

**PHASE I HERITAGE IMPACT ASSESSMENT (INCLUDING
PALAEOLOGICAL ASSESSMENT) REQUESTED IN TERMS OF
SECTION 38 OF THE NATIONAL HERITAGE RESOURCES ACT NO
25/1999 FOR THE PROPOSED MINE PROSPECTING AND
APPLICATION FOR MINING RIGHTS ON THE FARM 85, BARKLY
WEST DISTRICT, NORTHERN CAPE PROVINCE**

Prepared by

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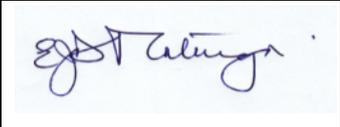


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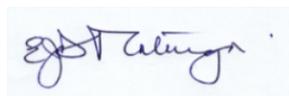
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DECLARATION OF INDEPENDENCE

AHSA Pty Ltd is an independent consultancy: I hereby declare that I have no interest, be it business, financial, personal or other vested interest in the undertaking of the proposed activity, other than fair remuneration for work performed, in terms the National Heritage Resources Act (No 25 of 1999).

DISCLAIMER

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



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ABBREVIATIONS

EIA	Environmental Impact Assessment
ESA	Early Stone Age
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

DEFINITIONS

Archaeological material: remains resulting from human activity left as evidence of their presence which, as proscribed by South African heritage legislation, are older than 100 years, which are in the form of artefacts, food remains and other traces such as rock paintings or engravings, burials, fireplaces and structures.

Artefact/Ecofact: 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/heritage place or landscape including maintenance, preservation, restoration, reconstruction and adaptation.

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

Cultural landscape: “the combined works of nature and man” and demonstrate “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”.

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

Early Stone Age: Predominantly the Acheulean hand axe industry complex dating to + 1Myr yrs – 250 000 yrs. before present.

Early Iron Age: Refers cultural period of the first millennium AD associated with the introduction of metallurgy and agriculture in Eastern and Southern Africa.

Later Iron Age: Refers to the period after 1000AD marked by increasing social and political complexity. Evidence of economic wealth through trade and livestock keeping especially cattle.

Excavation: A method in which archaeological materials are extracted, involving systematic recovery of archaeological remains and their context by removing soil and any other material covering them.

Grave: a place of burial which include materials such as tombstone or other marker such as cross etc.

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

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

Historical archaeology: the study of material remains from both the remote and recent past in relationship to documentary history and the stratigraphy of the ground in which they are found; or archaeological investigation on sites of the historic period. In South Africa it refers to the immediate pre-colonial period, contact with European colonists and the modern industrial period.

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-yr. to the introduction of metals and farming technology

Middle Stone Age: Various stone using industries dating from ± 250 000 yr. - 30 000 yrs. ago

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

Sherd: ceramic fragment.

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.

EXECUTIVE SUMMARY

A Heritage Impact Assessment was conducted in terms of Section 38 of the National Heritage Resources Act (25 of 1999) in respect of the proposed prospecting and application for mining rights on the Farm 85, Barkly West District, Northern Cape. HIA is a precaution to mitigate likely negative impacts of the proposed activities on heritage resources. This assessment is part of a portfolio of multi-disciplinary studies required for Environmental Authorisation of the project in terms of the National Environmental Management Act (NEMA).

The following is a summary of the findings of the study:

Twenty-five sites have been recorded:

The Stone Age

Twenty-four (24) Stone Age Sites were recorded all with a low density of lithics, and none demonstrate concentrated or regular activity. None of the sites represent substantial deposits to warrant further investigation. The sites indicating hunter-gatherer foraging activities are concentrated in a the northern portion of the property

The Iron Age

No Iron Age sites were found on the property.

Early Modern Mining

Only one (1) site shows possible evidence of early mine prospecting (MSN17).

The sites are catalogued in Section 8 of this Report. They are ranked in terms of their cultural significance relative to the potential risks of the proposed development:

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. Footprint of early modern mining. These may be protected at the recommendations of a heritage expert.	5
3	Medium B	Sites exhibiting archaeological characteristics of the area, but do not warrant further action after they have been documented.	25
4	Low	Heritage sites which have been recorded, but considered of minor value relative to the proposed development.	0
		TOTAL	25

The following table is an inventory with a summary of the key attributes of the sites.

FARM 85

SITE NO	LATITUDE	LONGITUDE	PERIOD	DESCRIPTION	RANKING
MSN01	28° 3'45.70"S	24°22'49.80"E	MSA/LSA	Flat terrain, calcretic soils, scattered bushes. 1 bladelet.	Medium B
MSN02	28° 3'45.80"S	24°22'47.80"E	MSA/LSA	Flat terrain, calcrete, dried bushes. 1 flake (waste material) possibly also used as a scraper.	Medium B
MSN03	28° 3'44.90"S	24°22'41.40"E	MSA/LSA	Flat terrain, calcretic surface, dried bushes. 1 blade/waste material	Medium B
MSN04	28° 3'41.40"S	24°22'42.50"E	MSA/LSA	Flat terrain, calcrete, dried bushes. Blade/scraper with straight cutting edge and curved retouched edge.	Medium B
MSN05	28° 3'36.90"S	24°22'46.80"E	MSA/LSA	Flat terrain, calcrete, sparse bush. Core (with multiple flake surfaces) and waste material.	Medium B
MSN06	28° 3'38.50"S	24°22'58.40"E	MSA/LSA	Flat terrain, calcrete sparse dried bush. 2 chert scrapers and waste material.	Medium B
MSN07	28° 3'42.80"S	24°22'58.40"E	MSA/LSA	Flat terrain, calcrete, dried bushes. Waste material, one from a rare greyish/greenish stone.	Medium B
MSN08	28° 3'44.90"S	24°22'58.20"E	MSA/LSA	Flat terrain, calcrete, sparse bush. 2 finds including scarper from a rare greyish/greenish stone.	Medium B
MSN09	28° 3'46.00"S	24°22'57.70"E	MSA/LSA	Flat terrain, calcrete, sparse bush. 1 waste material.	Medium B
MSN10	28° 2'54.70"S	24°20'45.10"E	MSA/LSA	Flat terrain, calcrete, sparse bush. Core possibly also used as a scraper, waste material.	Medium B
MSN11	28° 2'54.80"S	24°21'0.40"E	MSA/LSA	Flat terrain, calcrete, sparse bush. 3 waste material.	Medium B
MSN12	28° 3'42.00"S	24°20'56.70"E	MSA/LSA	Flat terrain, calcrete, sparse bush. 1 scraper.	Medium B
MSN13	28° 3'25.40"S	24°22'40.40"E	MSA/LSA	Flat terrain, sparse bush. 1 waste material.	Medium B
MSN14	28° 3'29.00"S	24°22'38.80"E	MSA/LSA	Flat terrain, bushes, some of which are dried. 2 cores with multiple flake surfaces.	Medium B
MSN15	28° 3'28.60"S	24°22'36.90"E	MSA/LSA	Low north-south trending ridge. Calcrete. Sparse bush. 2 scrapers/waste material.	Medium B

MSN16	28° 3'22.30"S	24°22'37.00"E	MSA/LSA	Low north-south trending ridge. Calcrete. Sparse bush. 2 scrapers/waste material.	Medium B
MSN17	28° 03'00.4"S	024°21'40.3"E	MSA/LSA	Flat terrain with substantial deposit of calcrete. Bushes and trees. Prospecting trench, or old borrow pit for calcretic gravel.	Medium B
MSN18	28° 03'03.8"S	24°21'39.5"E	MSA/LSA	Flat terrain, calcrete, sparse bush. 1 flake/scrapper.	Medium B
MSN19	28° 03'08.2"S	28° 03'08.2"S	MSA/LSA	Flat terrain, calcrete, sparse bush. 1 scraper.	Medium B
MSN20	28° 03'25.9"S	024°21'31.5"E	20th C	Flat terrain, calcrete, sparse bush. 5 waste material.	Medium B
MSN21	28° 03'24.3"S	024°21'30.7"E	MSA/LSA	Flat terrain, calcrete, sparse bush. 2 core and waste material.	Medium B
MSN22	28° 03'17.1"S	024°21'28.0"E	MSA/LSA	Flat terrain, calcrete, sparse bush. 3 waste material.	Medium B
MSN23	28° 02'35.7"S	24°21'41.8"E	MSA/LSA	Flat terrain, calcrete, sparse bush. 1 blade tool, single cutting edge.	Medium B
MSN24	28° 02'51.1"S	28° 02'51.1"S	MSA/LSA	Flat terrain, calcrete, sparse bush. 2 waste material.	Medium B
MSN25	28° 3'56.93"S	24°20'24.03"E	MSA/LSA	Flat terrain, calcrete with sparse bush. 1 flake tool.	Medium B

Recommendations

The mine prospecting can go ahead. In the event of discovery of other heritage resources in future phases of the project, the Provincial Heritage Resources Authority or SAHRA must be alerted immediately and an archaeologist or heritage expert called to attend.

1. INTRODUCTION

A Heritage Impact Assessment was requested in terms of Section 38 of the National Heritage Resources Act (25 of 1999) (NHRA) for the proposed mine prospecting and application for a mining right on the Farm 85, Barkly West District, Northern Cape Province.

1.1. Nature of Development

Messina Diamonds Pty Ltd intends to prospect for diamonds and to apply for mining rights if the results to the sampling are positive. 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).

A Heritage Impact Assessment (HIA) is required in terms of Section 38 of the National Heritage Resources Act (No 25 / 1999). The HIA is part of a portfolio of multi-disciplinary studies required for Environmental Authorisation of the project in terms of the National Environmental Management Act (NEMA).

2. GEOGRAPHICAL SETTING

2.1. Physical setting

Farm 85 is located 45km west of Barkly West in the Northern Cape Province (Figure 1). It is situated on a high plain 1200m AMSL called the Ghaap Plateau. Dolomite beds are exposed on the edge of the Plateau facing the Harts River which forms an escarpment. There are extensive surface exposures of calcrete which overlies dolomite, the former accumulated over time as water washed through the dolomite bedrock leaving behind the calcium carbonate residue. Vegetation is sparse and

predominantly acacia scrub. The short hooked thorn (Afrikaans - *haakbos* - *Acacia mellifera* subsp. *detinens*) is endemic and further to the west there is increasing occurrence of the *vaalbos* (*Tarchonanthus camphoratus*). Dried bushes of the hooked thorn is possible evidence of prolonged droughts in the recent past.

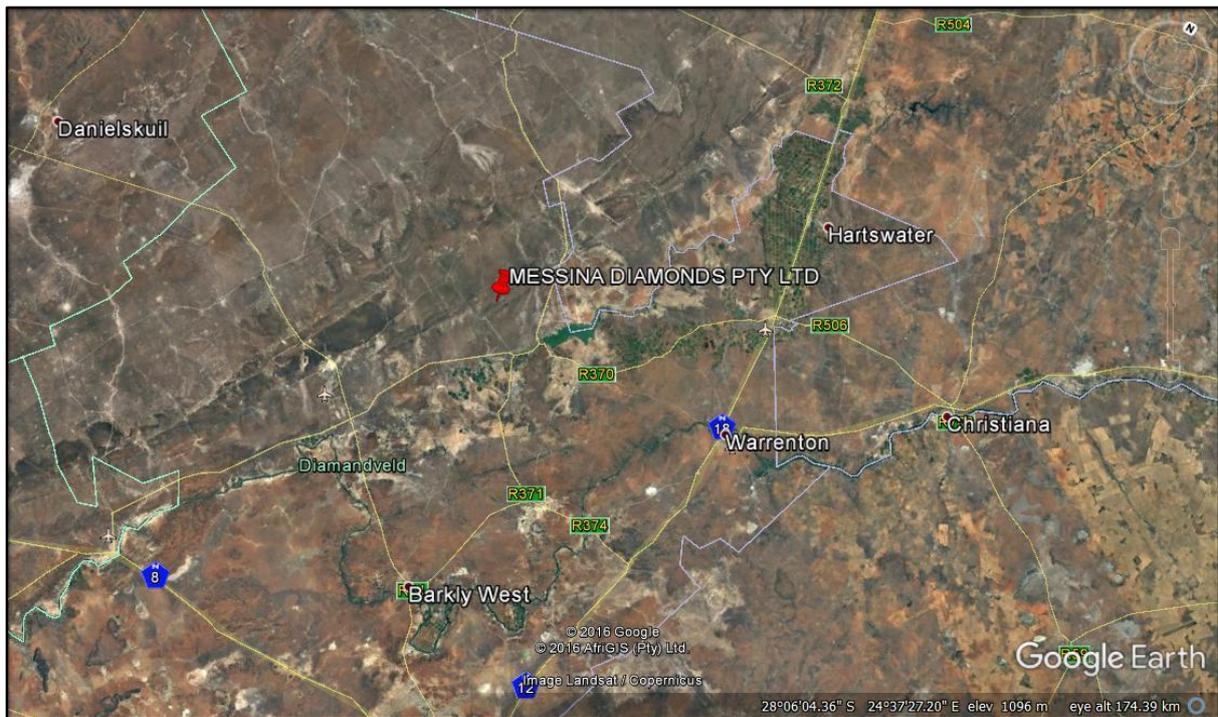


Figure 1. Google-Earth map of area.

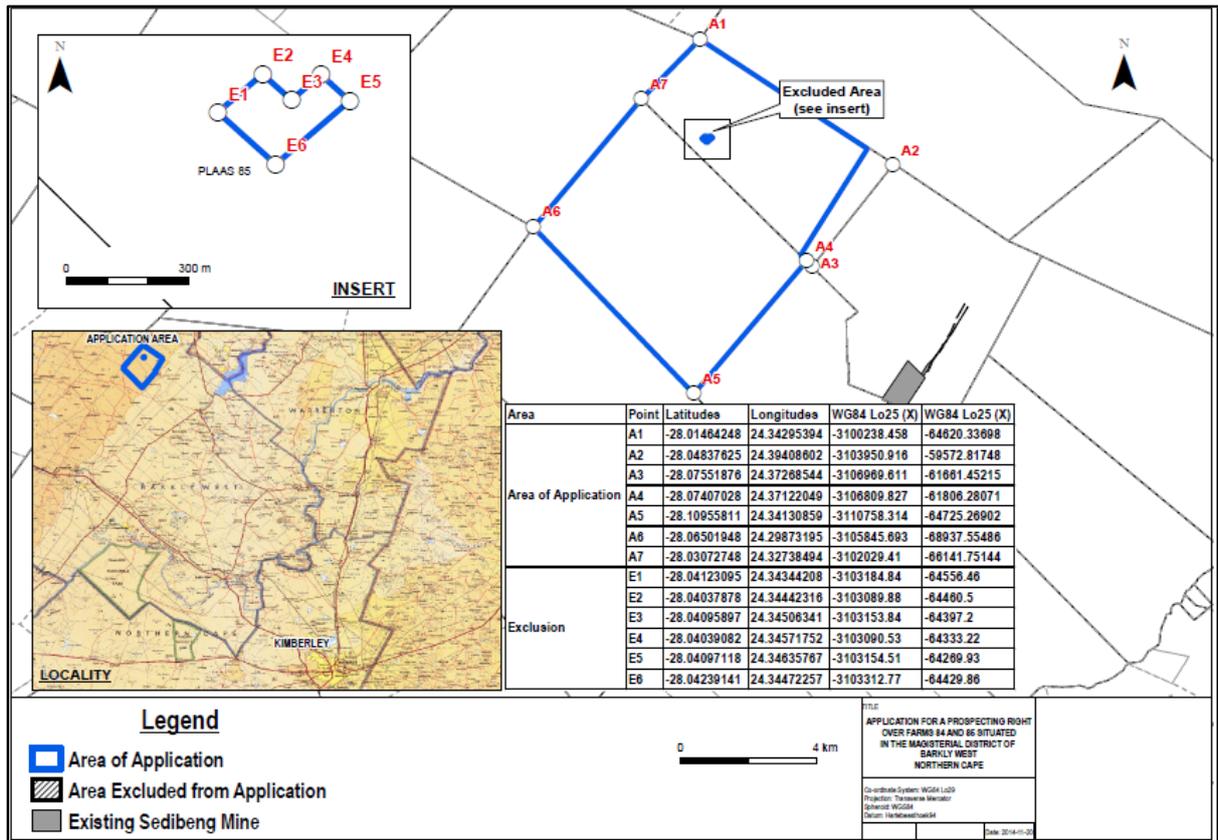


Figure 2: Farm 85, Messina Diamonds, Barkly West, Localities Map.



Figure 3: Calretic surface.



Figure 4: Dried hooked thorn.



Figure 5: Increasing frequency of the *vaalbos* in the western part of the property.

3. LEGAL FRAMEWORK

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

The proposed prospecting requires a Heritage Impact Assessment as stipulated under Section 38 of the National Heritage Resources Act (No 25 1999). The 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 000m² in extent; or

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

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

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

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

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

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 and respect the sanctity of all graves 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. APPROACH AND METHODOLOGY

4.1. Literature Survey

The purpose of a literature survey is to obtain background information in order to form a picture of the heritage potential of the area. A number of reports generated through heritage impact assessment studies in the area were available as reference material. I have had the privilege to carry out heritage surveys in adjoining properties and in the broader area:

Matenga, E. 2016. Phase 1 heritage Impact Assessment Requested in terms of Section 38 of the National Heritage Resources Act No 25/1999 for the proposed Mine Prospecting on the Remaining Portion of the Farm Jacobsfontein 503 (Werda) near Postmasburg in the Northern Cape Province.

Matenga, E. 2016. Phase I Heritage Impact Assessment (including Palaeontological Assessment) requested in terms of Section 38 of the National Heritage Resources Act

No 25/1999 for the Proposed Mine Prospecting on a Portion of the Remaining Extent of the Farm 84 & Portion of farm 393, Barkly West District, Northern Cape Province.

Matenga, E. 2017. Phase I Heritage Impact Assessment (including Palaeontological Assessment) requested in terms of section 38 of the National Heritage Resources Act No 25/1999 for the Proposed Mine Prospecting on a Portion of Farm 393, Barkly West District, Northern Cape Province.

Matenga, E. 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.

With this research carried in the vicinity previously, significant data existed to form a picture of the archaeological potential of the area.

4.2. Ground Survey

Field data was collected by means of walking surveys, largely random, but also targeting spots seen as likely to yield material. An archaeologist was accompanied by two field assistants.

4.3. Significance Ranking

Heritage sites have been ranked to show potential risks relative to their cultural significance.

	SIGNIFICANCE	RANKING
1	National and Provincial heritage sites (Section 7 of NHRA). All burials including those protected under Section 36 of NHRA. They must be protected.	High
2	Substantial archaeological deposits, buildings protected under Section 34 of NHRA. These may be protected at the recommendations of a heritage expert.	Medium A
3	Sites exhibiting archaeological characteristics of the area, but do not warrant further action after they have been documented.	Medium B
4	Heritage sites which have been recorded and are deemed of minor importance.	Low

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.

5.1. Cultural sequence summary

PERIOD	EPOCH	ASSOCIATED CULTURAL GROUPS	TYPICAL MATERIAL EXPRESSIONS
Early Stone Age 2.5m – 250 000 YCE	Pleistocene	Early Hominids: <i>Australopithecines</i> <i>Homo habilis</i> <i>Homo erectus</i>	Typically large stone tools such as hand axes, choppers and cleavers.
Middle Stone Age 250 000 – 25 000 YCE	Pleistocene	First <i>Homo sapiens</i> species	Typically smaller stone tools such as scrapers, blades and points.
Late Stone Age 20 000 BC – present	Pleistocene / Holocene	<i>Homo sapiens</i> including San people	Typically small to minute stone tools such as arrow heads, points and bladelets.
Early Iron Age / Early Farmer Period c300 – 900 AD (or earlier)	Holocene	Iron Age Farmers	Typically distinct ceramics, bead ware, iron objects, grinding stones.

Later Iron Age 900ADff	Holocene	Iron Age Farmers, emergence of complex state systems	Typically distinct ceramics, evidence of long distance trade and contacts
(ii) Mapungubwe (K2)	1350AD		Metals including gold, long distance exchanges
(ii) Historical period	Nguni / Sotho/Venda people	Iron Age Farmers	Mfecance / Difaqane
(iii) Colonial period	19 th Century	European settlers / farmers / missionaries/ industrialisation	Buildings, Missions, Mines, metals, glass, ceramics

5.2. Appearance of Hominids

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.¹ Hominid refers to primate species which are the immediate ancestors of man. The nearest hominid site is Taung near Vryburg (300km 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).

¹ Deacon, J. and N. Lancaster. 1986. *Later Quaternary Palaeo-environments of Southern Africa*. Oxford: Oxford University Press.

5.3. The Stone Age

The Stone Age dates back more than 1.5 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.

5.3.1. The Early Stone Age [1.4 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.²

5.3.2. 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

² A.C. van Vollenhoven. 2014. Heritage Scoping Report Related to the Eskom Kimberley strengthening phase 4 project between the Boundary and Ulco Substations in the Northern Cape province

steps in human cultural advancement.³ 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.⁴

5.3.3. *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.⁵ Both Rock paintings and engravings have been reported around Danielskuil ca80km to the west of the properties.⁶ Ancient workings of specularite at Tsantsabane and Doornfontein near Postmasburg and Beeshoek respectively seems to indicate the technology and demand for minerals date back to the MSA, contrary to the notion that it started during the Iron Age.⁷

5.4. **The Iron Age Culture [ca. 2000 years BP]**

The Iron Age culture supplanted the Stone Age at least 2000 years ago, associated with the introduction of farming (peoples practiced agriculture and kept domestic animals such as cattle, sheep, goat and chicken amongst others) and use of several

³ Deacon, J & H. Deacon. 1999. *Human Beginnings in South Africa*. Cape Town: David Philip.

⁴ Morris, D. 2005: Report on a Phase 1 Archaeological Impact Assessment of proposed mining areas on the farms Ploegfontein, Klipbankfontein, Welgevonden, Leeuwfontein, Wolhaarkop and Kapsteveld, west of Postmasburg, Northern Cape. p3.

⁵ Schalkwyk, J 2015. Heritage scoping assessment for the proposed Perseus-Kronos 765kv Transmission Power Line and Substations Upgrade, Northern Cape and Free State Provinces.

⁶ Orton. J. 2015. Heritage Impact assessment for the Proposed 132 KV Olien-Karats Power Line at Lime Acres, Postmasburg Magisterial District, Northern Cape.

⁷ 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.

metals and pottery. There is however increasing evidence that sheep might have moved into the area much earlier than the Iron Age.

5.4.1. Early Iron Age

The Early Iron is generally associated with the population of the subcontinent by speakers of Bantu languages. 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.

The Later Iron Age

The LIA is marked by the presence of extensive stonewalled settlements such as the Tlhaping capital at Dithakong near Kuruman.⁸

5.5. Historical period

The *Difaqane* or *Mfecane*, in the 19th century was a violent episode 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.⁹

5.6. The European Contact Period

As the *Difaqane* was playing out, the Griquas, the Korana and white people arrived from the southwest. The steady stream of White traders, hunters and missionaries from the Cape was to fundamentally change the political landscape. 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 started 1836 bringing in a large number of

⁸ De Jong 2010: 36

⁹

farmers with their stock. Conflicts increased which the British tried to resolve through the Keate Arbitration, setting the border between the Boers and the Bechuanaland Protectorate in 1871. The discovery of diamonds in the area in 1867 stoked further completion among 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 diamonds of Kimberley found in 1871 sparked a rush and created and provided the critical mass for industrialisation and urbanisation.

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

6. FINDINGS OF THE HERITAGE SURVEY

Twenty-five (25) sites were recorded and Catalogue and a catalogue is in Section 8 of this Report. The Table below is a Site Inventory in spreadsheet with a summary of the attributes of the sites.

6.1. 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. Footprint of early modern mining. These may be protected at the recommendations of a heritage expert.	0
3	Medium B	Sites exhibiting archaeological characteristics of the area, but do not warrant further action after they have been documented.	25
4	Low	Heritage sites which have been recorded, but considered of minor value relative to the proposed development.	0
		TOTAL	25

FARM 85

SITE NO	LATITUDE	LONGITUDE	PERIOD	DESCRIPTION	RANKING
MSN01	28° 3'45.70"S	24°22'49.80"E	MSA/LSA	Flat terrain, calcretic soils, scattered bushes. 1 bladelet.	Medium B
MSN02	28° 3'45.80"S	24°22'47.80"E	MSA/LSA	Flat terrain, calcrete, dried bushes. 1 flake (waste material) possibly also used as a scraper.	Medium B
MSN03	28° 3'44.90"S	24°22'41.40"E	MSA/LSA	Flat terrain, calcretic surface, dried bushes. 1 blade/waste material	Medium B
MSN04	28° 3'41.40"S	24°22'42.50"E	MSA/LSA	Flat terrain, calcrete, dried bushes. Blade/scraper with straight cutting edge and curved retouched edge.	Medium B
MSN05	28° 3'36.90"S	24°22'46.80"E	MSA/LSA	Flat terrain, calcrete, sparse bush. Core (with multiple flake surfaces) and waste material.	Medium B
MSN06	28° 3'38.50"S	24°22'58.40"E	MSA/LSA	Flat terrain, calcrete sparse dried bush. 2 chert scrapers and waste material.	Medium B
MSN07	28° 3'42.80"S	24°22'58.40"E	MSA/LSA	Flat terrain, calcrete, dried bushes. Waste material, one from a rare greyish/greenish stone.	Medium B
MSN08	28° 3'44.90"S	24°22'58.20"E	MSA/LSA	Flat terrain, calcrete, sparse bush. 2 finds including scarper from a rare greyish/greenish stone.	Medium B
MSN09	28° 3'46.00"S	24°22'57.70"E	MSA/LSA	Flat terrain, calcrete, sparse bush. 1 waste material.	Medium B
MSN10	28° 2'54.70"S	24°20'45.10"E	MSA/LSA	Flat terrain, clacrete, sparse bush. Core possibly also used as a scraper, waste material.	Medium B
MSN11	28° 2'54.80"S	24°21'0.40"E	MSA/LSA	Flat terrain, clacrete, sparse bush. 3 waste material.	Medium B
MSN12	28° 3'42.00"S	24°20'56.70"E	MSA/LSA	Flat terrain, clacrete, sparse bush. 1 scraper.	Medium B
MSN13	28° 3'25.40"S	24°22'40.40"E	MSA/LSA	Flat terrain, sparse bush. 1 waste material.	Medium B
MSN14	28° 3'29.00"S	24°22'38.80"E	MSA/LSA	Flat terrain, bushes, some of which are dried. 2 cores with with multiple flake surfaces.	Medium B
MSN15	28° 3'28.60"S	24°22'36.90"E	MSA/LSA	Low north-south trending ridge. Calcrete. Sparse bush. 2 scrapers/waste material.	Medium B

MSN16	28° 3'22.30"S	24°22'37.00"E	MSA/LSA	Low north-south trending ridge. Calcrete. Sparse bush. 2 scrapers/waste material.	Medium B
MSN17	28° 03'00.4"S	024°21'40.3"E	MSA/LSA	Flat terrain with substantial deposit of calcrete. Bushes and trees. Prospecting trench, or old borrow pit for calcretic gravel.	Medium B
MSN18	28° 03'03.8"S	24°21'39.5"E	MSA/LSA	Flat terrain, calcrete, sparse bush. 1 flake/scrapper.	Medium B
MSN19	28° 03'08.2"S	28° 03'08.2"S	MSA/LSA	Flat terrain, calcrete, sparse bush. 1 scraper.	Medium B
MSN20	28° 03'25.9"S	024°21'31.5"E	20th C	Flat terrain, clacrete, sparse bush. 5 waste material.	Medium B
MSN21	28° 03'24.3"S	024°21'30.7"E	MSA/LSA	Flat terrain, clacrete, sparse bush. 2 core and waste material.	Medium B
MSN22	28° 03'17.1"S	024°21'28.0"E	MSA/LSA	Flat terrain, clacrete, sparse bush. 3 waste material.	Medium B
MSN23	28° 02'35.7"S	24°21'41.8"E	MSA/LSA	Flat terrain, clacrete, sparse bush. 1 blade tool, single cutting edge.	Medium B
MSN24	28° 02'51.1"S	28° 02'51.1"S	MSA/LSA	Flat terrain, calcrete, sparse bush. 2 waste material.	Medium B
MSN25	28° 3'56.93"S	24°20'24.03"E	MSA/LSA	Flat terrain, calcrete with sparse bush. 1 flake tool.	Medium B

6.2. Summary of Findings

The Stone Age

Twenty-four (24) Stone Age Sites were recorded all with a low density of lithics, and none demonstrate concentrated or regular activity. None of the sites therefore represent substantial deposits to warrant further investigation. The sites are concentrated in a northern of the property

The Iron Age

No Iron Age sites were found on the property.

Early Modern Mining

Only one (1) site shows possible evidence of early mine prospecting (MSN17).

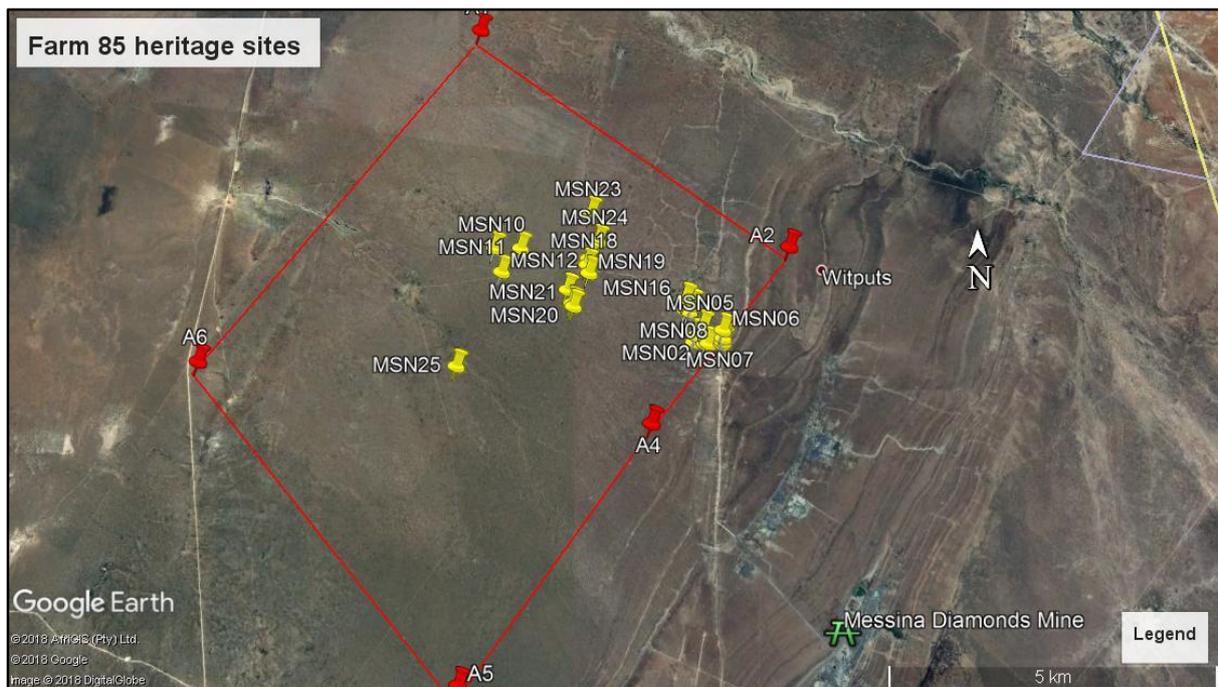


Figure 8. Heritage Sites on farm 85.

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

6.3.1. Section 3(3) of the NHRA

The following is an assessment of the value of the identified heritage resources in accordance with Section 3 of the NHRA which defines the National Estate.

(3) Without limiting the generality of subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of—

	STATUTORY REFERENCE	OBSERVATIONS
(a)	Its importance in the community, or pattern of South Africa's history	None
(b)	Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage	None
(c)	Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	The high frequency of stone tools dating to the MSA/LSA is typical of the highveld region of the Northern Cape
(d)	Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects	None
(e)	Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group	None
(f)	Its importance in demonstrating a high degree of creative or technical achievement at a particular period	None
(g)	Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	None
(h)	Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa	None
(i)	Sites of significance relating to the history of slavery in South Africa.	None

6.3.2 Section 38 of the NHRA

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

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

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

Twenty-five sites (25) sites were recorded.

(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. However the sites have been ranked in four categories for the purpose to recommend appropriate mitigation in view of the proposed development.

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

The risk ranking is a definition of potential risks based on perceived value of the heritage and potential threats posed by the proposed development. Five (5) sites may deserve to be protected.

(i) An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development

The proposed expansion of mining operations by Messina Diamonds Pty Ltd point to great future potential of the mineral wealth to provide stimulus for rapid socio-economic development in the Northern Cape Province and the country as a whole. Mining is labour intensive and there is real prospect of employment relief in view of the current high rate of employment in the country. General improvement in the quality of livelihoods in local communities and the country at large is expected.

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

N/A

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

Excavation, drilling, placement of rail/roads/conveyor belts must avoid the sensitive areas as identified in this survey.

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

In the event of discovery of other heritage resources during site preparation and mining phase, 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)
Nature of Impact	Negative, both direct & indirect impacts.
Extent of Impact	Test pits, drilling and ground clearing has potential to damage archaeological resources above and below the surface not seen during the survey.
Duration of Impact	Any accidental destruction of surface or subsurface relics is not reversible, but can be mitigated.
Intensity	Uncertain.
Probability of occurrence	Medium.
Confidence of assessment	High.
Level of significance of impacts before mitigation	High.

Mitigation measures	If archaeological or other heritage relics are found during the construction phase, heritage authorities will be advised immediately and a heritage specialist will be called to attend. This is standard precaution in view of inherent limitations of archaeological fieldwork.
Level of significance of impacts after mitigation	Low.
Cumulative Impacts	None.
Comments or Discussion	None.

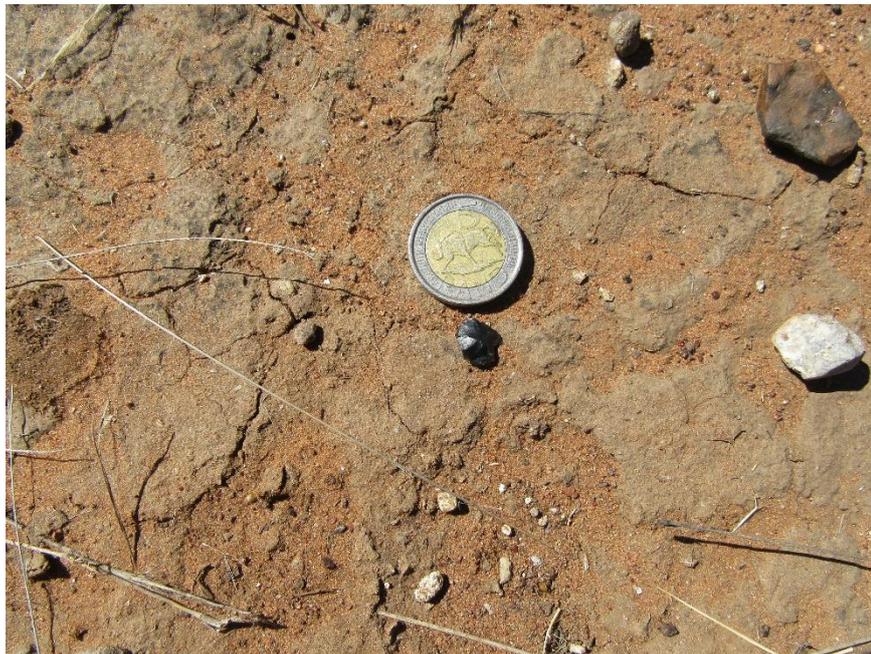
7. RECOMMENDATIONS AND CONCLUSIONS

As there are no sites that warrant further action, the mine prospecting can go ahead. In the event of discovery of other heritage resources in future phases of the project, the Provincial Heritage Resources Authority or SAHRA must be alerted immediately and an archaeologist or heritage expert called to attend.

8. CATALOGUE OF SITES

SITE NO	COORDINATES	PERIOD
MSN01	28° 3'45.70"S, 24°22'49.80"E	MSA/LSA
		
<p>DESCRIPTION: Flat terrain, calcretic soils, scattered bushes. 1 bladelet.</p> <p>HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.</p>		

SITE NO	COORDINATES	PERIOD
MSN02	28° 3'45.80"S, 24°22'47.80"E	MSA/LSA



DESCRIPTION. Flat terrain, calcrete, dried bushes. 1 flake (waste material) possibly also used as a scraper.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN03	28° 3'44.90"S, 24°22'41.40"E	MSA/LSA



DESCRIPTION: Flat terrain, calcretic surface, dried bushes. 1 blade/waste material

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN04	28° 3'41.40"S, 24°22'42.50"E	MSA/LSA



DESCRIPTION: Flat terrain, calcrete, dried bushes. Blade/scrapper with straight cutting edge and curved retouched edge.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN05	28° 3'36.90"S, 24°22'46.80"E	MSA/LSA



DESCRIPTION: Flat terrain, calcrete, sparse bush. Core (with multiple flake surfaces) and waste material.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN06	28° 3'38.50"S, 24°22'58.40"E	MSA/LSA



DESCRIPTION: Flat terrain, calcrete sparse dried bush. 2 chert scrapers and waste material.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN07	28° 3'42.80"S, 24°22'58.40"E	MSA/LSA



DESCRIPTION: Flat terrain, calcrete, dried bushes. Waste material, one from a rare greyish/greenish stone.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN08	28° 3'44.90"S, 24°22'58.20"E	MSA/LSA



DESCRIPTION: Flat terrain, calcrete, sparse bush. 2 finds including scarper from a rare greyish/greenish stone.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
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MSN09

28° 3'46.00"S, 24°22'57.70"E

MSA/LSA



DESCRIPTION: Flat terrain, calcrete, sparse bush. 1 waste material.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN10	28° 2'54.70"S, 24°20'45.10"E	MSA/LSA



DESCRIPTION: Flat terrain, clacrete, sparse bush. Core possibly also used as a scraper, waste material.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN11	28° 2'54.80"S, 24°21'0.40"E	MSA/LSA



DESCRIPTION: Flat terrain, clacrete, sparse bush. 3 waste material.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN12	28° 3'42.00"S, 24°20'56.70"E	MSA/LSA



DESCRIPTION: Flat terrain, clacrete, sparse bush. 1 scraper.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

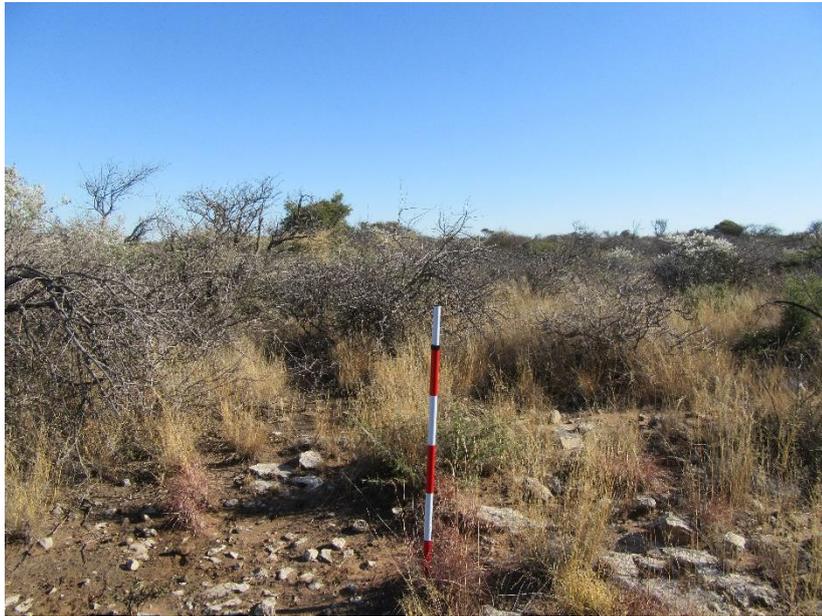
SITE NO	COORDINATES	PERIOD
MSN13	28° 3'25.40"S, 24°22'40.40"E	MSA/LSA



DESCRIPTION: Flat terrain, sparse bush. 1 waste material.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN14	28° 3'29.00"S, 24°22'38.80"E	MSA/LSA



DESCRIPTION: Flat terrain, bushes, some of which are dried. 2 cores with multiple flake surfaces.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

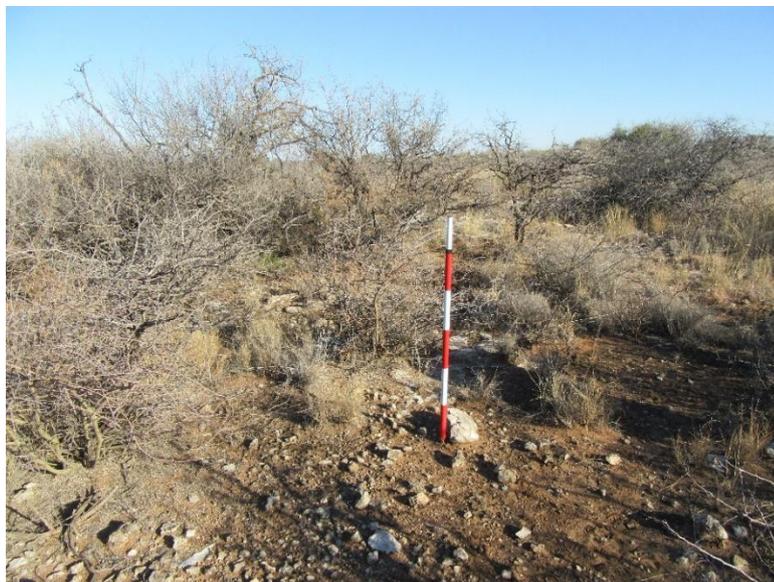
SITE NO	COORDINATES	PERIOD
MSN15	28° 3'28.60"S, 24°22'36.90"E	MSA/LSA



DESCRIPTION: Low north-south trending ridge. Calcrete. Sparse bush. 2 scrapers/waste material.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN16	28° 3'22.30"S, 24°22'37.00"E	MSA/LSA



DESCRIPTION: Low north-south trending ridge. Calcrete. Sparse bush. 2 scrapers/waste material.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN17	28° 03'00.4"S, 024°21'40.3"E	Mining Period
 <p data-bbox="204 1032 1182 1111">DESCRIPTION: Flat terrain with substantial deposit of calcrete. Bushes and trees. Prospecting trench, or old borrow pit for calcretic gravel.</p> <p data-bbox="204 1126 927 1160">HERITAGE SIGNIFICANCE: Mine prospecting in the 20th C.</p>		

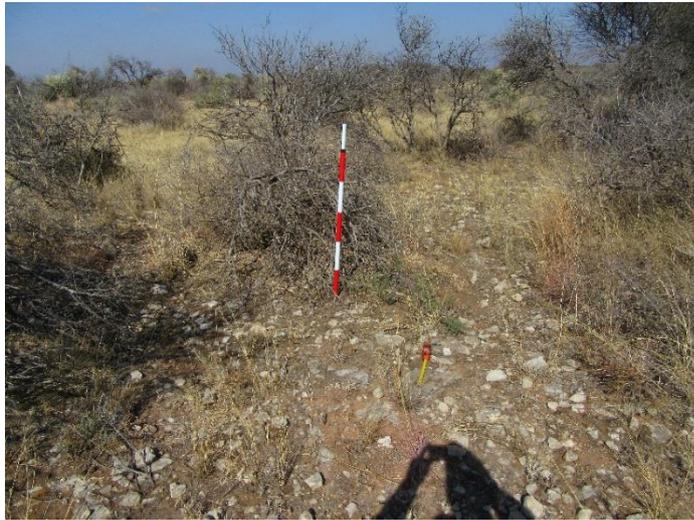
SITE NO	COORDINATES	PERIOD
MSN18	28° 03'03.8"S, 24°21'39.5"E	MSA/LSA



DESCRIPTION: Flat terrain, calcrete, sparse bush. 1 flake/scrapper.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN19	28° 03'08.2"S, 024°21'40.6"E	MSA/LSA



DESCRIPTION: Flat terrain, calcrete, sparse bush. 1 scraper.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN20	28° 03'25.9"S, 024°21'31.5"E	MSA/LSA



DESCRIPTION: Flat terrain, clacrete, sparse bush. 5 waste material.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN21	28° 03'24.3"S, 024°21'30.7"E	MSA/LSA



DESCRIPTION: Flat terrain, clacrete, sparse bush. 2 core and waste material.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN22	28° 03'17.1"S, 024°21'28.0"E	MSA/LSA



DESCRIPTION: Flat terrain, clacrete, sparse bush. 3 waste material.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN23	28° 02'35.7"S, 24°21'41.8"E	MSA/LSA



DESCRIPTION: Flat terrain, clacrete, sparse bush. 1 blade tool, single cutting edge.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN24	28° 02'51.1"S, 024°21'45.9"E	MSA/LSA



DESCRIPTION: Flat terrain, calcrete, sparse bush. 2 waste material.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

SITE NO	COORDINATES	PERIOD
MSN 25	28° 3'56.93"S, 24°20'24.03"E	MSA/LSA



DESCRIPTION: Flat terrain, calcrete with sparse bush. 1 flake tool.

HERITAGE SIGNIFICANCE: Significant as evidence of tool manufacturing and use during the MSA/LSA.

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Legislation

National Heritage Resources Act (No 25: 1999)

10. ACKNOWLEDGEMENTS

Mr Jan Rust, Geologist, Messina Diamonds (Pty) Ltd;