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**PHASE 1 HIA REPORT FOR PROPOSED PROSPECTING  
ON THE FARM BOERDRAAI 228 NEAR HOTAZEL  
IN THE JOE MOROLONG LOCAL MUNICIPALITY  
NORTHERN CAPE PROVINCE**

For:

***SLR CONSULTING (PTY) LTD  
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**REPORT: APAC019/119**

by:

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***December 2019***

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I hereby declare that I, Anton Johan Pelser, am an Independent Consultant with no vested interest in the Proposed Development other than being an Appointed Heritage Specialist to undertake a Specialist Assessment for the proposed development.

Signed at Pretoria on this 1<sup>st</sup> day of December 2019

Anton Pelser

ID Number: 711223 5283 088

A handwritten signature in black ink, appearing to read 'A. Pelser', with a stylized flourish at the end.

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**Clients & Developers should not continue with any development actions until SAHRA or one of its subsidiary bodies has provided final comments on this report. Submitting the report to SAHRA is the responsibility of the Client unless required of the Heritage Specialist as part of their appointment and Terms of Reference**

A handwritten signature in black ink, appearing to be 'J. Pel' or similar, located below the disclaimer text.

## SUMMARY

A Pelser Archaeological Consulting (APAC) was appointed by SLR Consulting (Pty) Ltd to conduct a Phase 1 HIA for Khwara Manganese (Pty) Ltd's proposed Iron Ore and Manganese prospecting on the farm Boerdraai 228. The prospecting and study area is located in the Joe Morolong Local Municipality, John Taolo Gaetsewe District Municipality of the Northern Cape Province. The area is situated approximately 27km north-west of the town of Hotazel.

The prospecting activities will include non-invasive and invasive activities. Non-invasive activities will comprise analyzing existing core, ground penetrating radar and hand held ground magnetic mapping. Invasive activities would comprise drilling of four prospecting boreholes on the Boerdraai farm.

Background research indicates that there are some cultural heritage sites and features in the larger geographical area within which the study area falls, while no known sites are known for the specific study area. The assessment of the specific study area identified some sites, features or material of cultural heritage (archaeological and/or historical) origin and significance including some Stone Age and recent historical sites. This report discusses the results of both the background research and physical assessment and provides recommendations on the way forward at the end.

**From a Cultural Heritage point of view it is recommended that the proposed prospecting activities be allowed to continue once the recommended mitigation measures put forward at the end of the report have been implemented.**

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## **1. INTRODUCTION**

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Background research indicates that there are some cultural heritage sites and features in the larger geographical area within which the study area falls, while no known sites are known for the specific study area. The assessment of the specific study area identified some sites, features or material of cultural heritage (archaeological and/or historical) origin and significance including some Stone Age and recent historical sites.

The client indicated the location and boundaries of the study area and the assessment concentrated on this portion.

## **2. TERMS OF REFERENCE**

The Terms of Reference for the study was to:

1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the portion of land that will be impacted upon by the proposed development;
2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;
4. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;
5. Review applicable legislative requirements;

## **3. LEGISLATIVE REQUIREMENTS**

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. These are the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

### 3.1. The National Heritage Resources Act

According to the above-mentioned act the following is protected as cultural heritage resources:

- a. Archaeological artifacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

The National Estate includes the following:

- a. Places, buildings, structures and equipment of cultural significance
- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Sites of Archaeological and palaeontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment (AIA) only looks at archaeological resources. An HIA must be done under the following circumstances:

- a. The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length
- b. The construction of a bridge or similar structure exceeding 50m in length
- c. Any development or other activity that will change the character of a site and exceed 5 000m<sup>2</sup> or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m<sup>2</sup>
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

## **Structures**

Section 34 (1) of the mentioned act states that no person may demolish any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Alter means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

## **Archaeology, palaeontology and meteorites**

Section 35(4) of this act deals with archaeology, palaeontology and meteorites. The act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial)

- 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 that assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
- e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

**The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.**

## **Human remains**

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict
- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. human remains



In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

- a. destroy, damage, alter, exhume or remove from its original position of otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- b. destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- c. bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the **Ordinance on Excavations (Ordinance no. 12 of 1980)** (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated to) before exhumation can take place.

Human remains can only be handled by a registered undertaker or an institution declared under the **Human Tissues Act (Act 65 of 1983 as amended)**.

### **3.2. 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 change the face of 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 should also take the cultural and social needs of people into account. 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.

## **4. METHODOLOGY**

### **4.1. Survey of literature**

A survey of available literature was undertaken in order to place the development area in an archaeological and historical context. The sources utilized in this regard are indicated in the bibliography.

## **4.2. Field survey**

The field assessment section of the study was conducted according to generally accepted HIA practices and aimed at locating all possible objects, sites and features of heritage significance in the area of the proposed development. The location/position of all sites, features and objects is determined by means of a Global Positioning System (GPS) where possible, while detail photographs are also taken where needed.

## **4.3. Oral histories**

People from local communities are sometimes interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography.

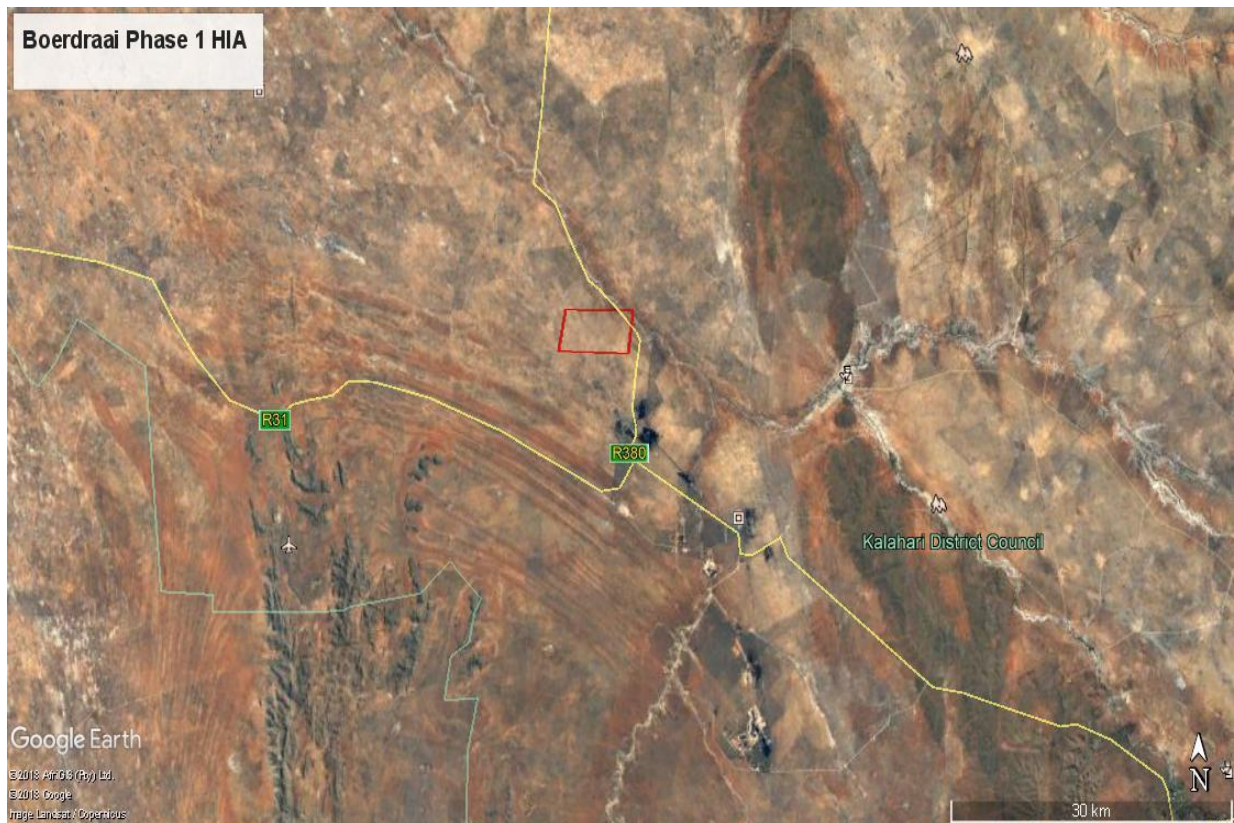
## **4.4. Documentation**

All sites, objects, features and structures identified are documented according to a general set of minimum standards. Co-ordinates of individual localities are determined by means of the Global Positioning System (GPS). The information is added to the description in order to facilitate the identification of each locality.

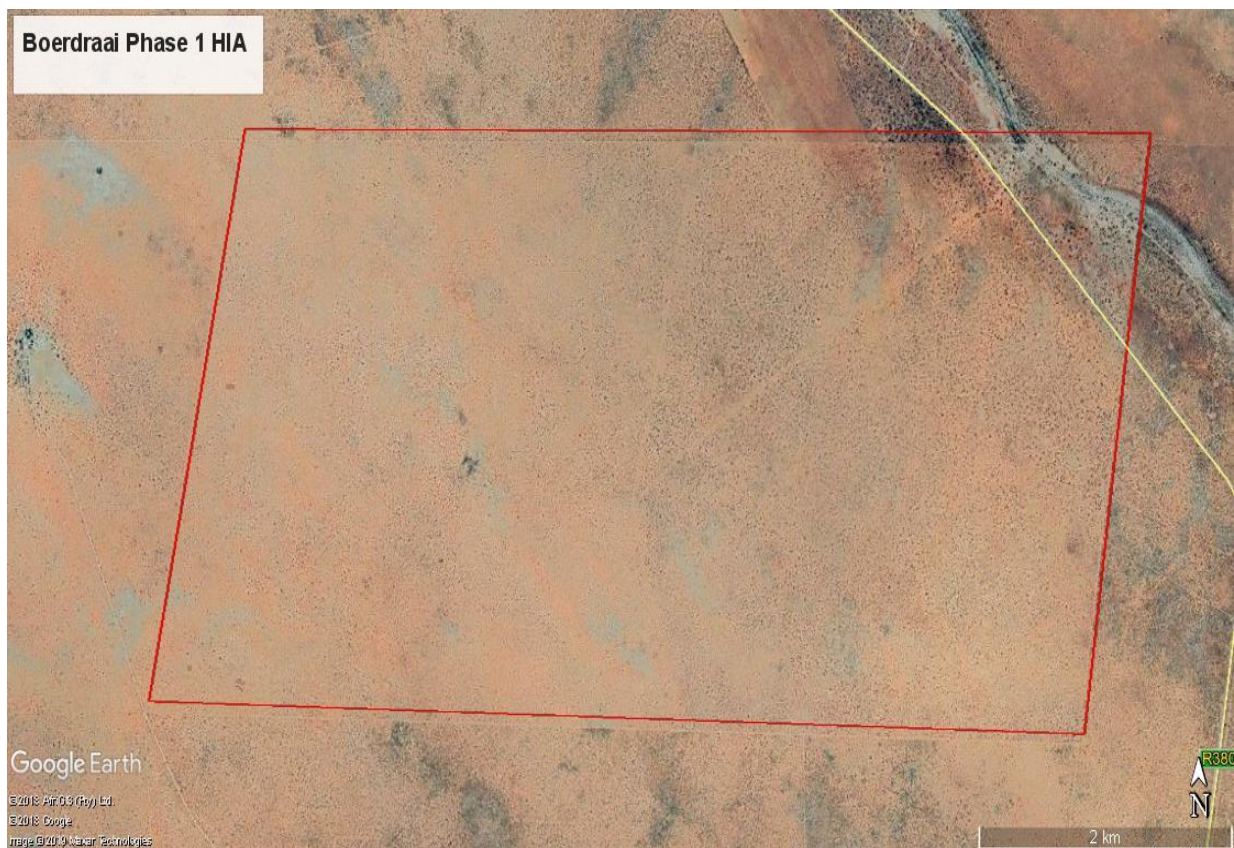
## **5. DESCRIPTION OF THE AREA**

The study area is situated on the farm Boerdraai 228 near Hotazel in the Magareng Local Municipality of the Northern Cape Province. The prospecting and study area is located in the Joe Morolong Local Municipality, John Taolo Gaetsewe District Municipality of the Northern Cape Province.

The topography of the study area is in general fairly flat, although there are some rocky outcrops. Vegetation cover (trees, shrubs, grass) is present, but although dense in sections, visibility was relatively good during the assessment. Red Kalahari sands and dunes characterize large parts of the study area while a dry stream bed (Kuruman River) is found in the north-eastern corner of the area. Banks of calcrete outcrops, erosion dongas and river gravels are also found in this section. The farm has been used in the past mainly for agricultural purposes (livestock including cattle and sheep).



**Figure 1: General view of study area location (Google Earth 2019).**



**Figure 2: Closer view of the study area (Google Earth 2019).**





**Figure 3: A view of a section of the study area.**



**Figure 4: A view of the dunes and red Kalahari sands covering large sections of the study area.**





**Figure 5: A view of a part of the stream/river bed in the study area.**



**Figure 6: Another view of the stream bed.**





**Figure 7: A section of calcrete outcrop.**



**Figure 8: Sections of the study area close to the streambed is characterized by “outcrops” of river gravels.**





**Figure 9: Erosion channels through the river gravels towards the stream bed.**



**Figure 10: Another view of the red sands covering large parts of the study area.**

## 6. DISCUSSION

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools. In South Africa the Stone Age can be divided into basically three periods. It is however important to note that dates are relative and only provide a broad framework for interpretation. A basic sequence for the South African Stone Age (Lombard et.al 2012) is as follows:

Earlier Stone Age (ESA) up to 2 million – more than 200 000 years ago

Middle Stone Age (MSA) less than 300 000 – 20 000 years ago

Later Stone Age (LSA) 40 000 years ago – 2000 years ago

It should also be noted that these dates are not a neat fit because of variability and overlapping ages between sites (Lombard et.al 2012: 125).

No known Stone Age sites or artifacts are present in the study area. According to David Morris of the McGregor Museum in Kimberley the archaeology of the Northern Cape is rich and varied, covering long spans of human history. The Karoo is particularly bountiful. Some areas are richer than others, and not all sites are equally significant. The significance of sites encountered in the study area may be assessed against previous research in the region and subcontinent. The region's remoteness from research institutions accounts for a relative lack of archaeological research in the area. The area has probably been relatively marginal to human settlement for most of its history, yet it is in fact exceptionally rich in terms of Stone Age sites and rock art, as a relatively few but important studies have shown (Morris 2006).

Stone Age sites are known to occur in the larger geographical area, including the well-known Wonderwerk Cave in the Kuruman Hills, Tsantsabane, an ancient specularite working on the eastern side of Postmasburg, Doornfontein, another specularite working north of Beeshoek and a cluster of important Stone Age sites near Kathu. Additional specularite workings with associated Ceramic Later Stone Age material and older Fauresmith sites (early Middle Stone Age) are known from Lylyfeld, Demaneng, Mashwening, King, Rust & Vrede, Paling, Gloucester and Mount Huxley to the north. Rock engraving sites are known from Beeshoek and Bruce (Morris 2005: 3). Studies done by Kusel (2009) and by Pelsner & Van Vollenhoven (2011) at Black Rock and Gloria Mines near Hotazel, not far from the study area at Perth did reveal a number of Early to Later Stone Age artifacts and sites in the area. A single stone tool was identified during a 2012 site assessment on the farm Adams 328 close to UMK by the author of this report (Pelsner 2012: 17-18).

***A number of Stone Age sites and finds were identified in the area during the assessment. The results of the assessment will be discussed in more details later on.***

The Iron Age is the name given to the period of human history when metal was mainly used to produce metal artifacts. In South Africa it can be divided in two separate phases (Bergh 1999: 96-98), namely:



Early Iron Age (EIA) 200 – 1000 A.D  
Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) however indicates that a Middle Iron Age should be included. His dates, which now seem to be widely accepted in archaeological circles, are:

Early Iron Age (EIA) 250 – 900 A.D.  
Middle Iron Age (MIA) 900 – 1300 A.D.  
Late Iron Age (LIA) 1300 – 1840 A.D.

The expansion of early farmers, who, among other things, cultivated crops, raised livestock, made ceramic containers (pots), mined ore and smelted metals, occurred in this area between AD 400 and AD 1100 and brought the Early Iron Age (EIA) to South Africa. They settled in semi-permanent villages (De Jong 2010: 35).

While there is some evidence that the EIA continued into the 15th century in the South African Lowveld, on the escarpment it had ended by AD1100. The Highveld became active again from the 15th century onwards due to a gradually warmer and wetter climate. From here communities spread to other parts of the interior. This later phase, termed the Late Iron Age (LIA), was accompanied by extensive stonewalled settlements, such as the Thlaping capital Dithakong, 40 km north of Kuruman (De Jong 2010: 35-36).

Sotho-Tswana and Nguni societies, the descendants of the LIA mixed farming communities, found the region already sparsely inhabited by the Late Stone Age (LSA) Khoisan groups, the so-called 'first people'. Most of them were eventually assimilated by LIA communities and only a few managed to survive, such as the Korana and Griqua. This period of contact is sometimes known as the Ceramic Late Stone Age and is represented by the Blinkklipkop specularite mine near Postmasburg and finds at the Kathu Pan (De Jong 2010: 36).

***No Iron Age sites, features or material were found in the area during the assessment.***

Factors such as population expansion, increasing pressure on natural resources, the emergence of power blocs, attempts to control trade and penetration by Griquas, Korana and white communities from the south-west resulted in a period of instability in Southern Africa that began in the late 18th century and effectively ended with the settlement of white farmers in the interior. This period, known as the difaqane or Mfecane, also affected the Northern Cape Province, although at a relatively late stage compared to the rest of Southern Africa.

Here, the period of instability, beginning in the mid-1820s, was triggered by the incursion of displaced refugees associated with the Tlokwa, Fokeng, Hlakwa and Phuting tribal groups. The difaqane coincided with the penetration of the interior of South Africa by white traders, hunters, explorers and missionaries. The first was PJ Truter's and William Somerville's journey of 1801, which reached Dithakong at Kuruman. They were followed by Cowan, Donovan, Burchell and Campbell and resulted in the establishment of a London Mission Society station near Kuruman in 1817 by James Read.

The Great Trek of the Boers from the Cape in 1836 brought large numbers of Voortrekkers up to the borders of large regions known as Bechuanaland and Griqualand West, thereby coming into conflict with many Tswana groups and also the missionaries of the London Mission Society. The conflict between Boer and Tswana communities escalated in the 1860s and 1870s when the Korana and Griqua communities became involved and later also the British government. The conflict mainly centered on land claims by various communities. For decades the western border of the Transvaal Boer republic was not fixed. Only through arbitration (the Keate Arbitration), triggered by the discovery of gold at Tati (1866) and diamonds at Hopetown (1867) was part of the western border finally determined in 1871. Ten years later, the Pretoria Convention fixed the entire western border, thereby finally excluding Bechuanaland and Griqualand West from Boer domination (De Jong 2010: 36).

The first Geologist to have surveyed the Northern Cape was Dr. A. W. Rogers of the Geological Commission of the Cape Colony in 1906. One of the features he noted was a small hill called Black Rock and reported on the presence of manganese ore at the base of the hill. In 1940 Associated Manganese Mines of South Africa acquired the manganese outcrop known as Black Rock and shortly afterwards started mining the deposit. The ore is extracted by both underground and open cast operations. Mines in the larger area (over and above UMK) include Wessels, N'Chwaning I, N'Chwaning II, Black Rock, Hotazel, Langdon, Devon, Perth, Smart, Adams, Mamatwan (largest opencast mine in the area), Middleplaats and Gloria. Gloria Mine was opened in 1978 (Kusel et.al. 2009: 3).

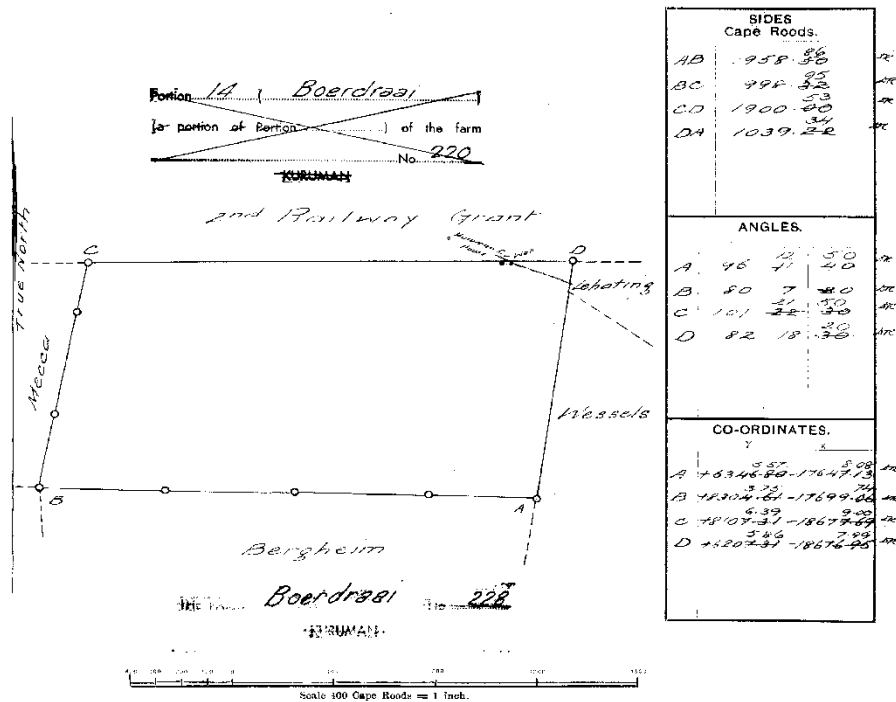
The oldest map for the farm that could be obtained from the database of the Chief Surveyor General ([www.csg.dla.gov.za](http://www.csg.dla.gov.za)) dates to 1916 (CSG Document 10028688). It shows that the farm was then located in the Field Cornetcy No.5 Korannaberg, Division of Kuruman. It was surveyed in March 1916. An old well and farm house is indicated on this map. The old house identified and recorded during the end of November 2019 assessment might be this indicated house.

No. 1107, 1916

Tracing

Approved

*W. J. K. J. J.*  
Surveyor General.



The above diagram lettered *ABCD* represents *323.5 Morgen*  
or *440 489* Square Roods of land situate in Field-Coronet No. 5 Kurumanberg  
DIVISION OF KURUMAN, being the farm *Boerdraai*

Bounded N. *Wds* by 2nd Railway Grant  
E. *Wds* by Vessels & Lehoting  
S. *Wds* by Bergheim  
W. *Wds* by Mecca

This diagram is annexed to the  
Title Deed No. *1107* dated *1916*  
dated *1916* in favour of

Surveyed and beaconed by me according to regulations.

*W. J. K. J. J.*  
Government Land Surveyor

I certify that this Diagram belongs to the Title Deed this day issued  
in favour of

*March 1916*

Department of Lands,  
Pretoria.

Secretary for Lands

Figure 11: A 1916 map of the farm Boerdraai 228 ([www.csg.dla.gov.za](http://www.csg.dla.gov.za)).

## Results of the study area assessment

The study area is fairly large, and with large sections covered by dunes and red Kalahari sands, the main focus of the assessment was on the dry stream bed of the Kuruman River that runs through the north-eastern corner of the farm. Open areas and erosion dongas, calcrete outcrops and deposits & sections with concentrations and deposits of river gravels were also focused on. These areas are the most likely to contain archaeological deposits and material.

A fairly large amount of Stone Age artifacts (either single tools or scatters of more dense tools) and sites were found in the area and recorded. The possibility that more similar finds and sites exist in the area is very likely, and recommended mitigation measures to negate the negative impacts of the proposed prospecting activities will be provided further on in the report. Over and above the Stone Age sites, two recent historical sites were also recorded and will be discussed here.

### ***Sites 1, 2, 3, 4, 7 & 8 – Stone Age***

Although only 6 sites and areas with material were physically recorded, there are many more sites and material scattered all over the area of the dry Kuruman River bed and the associated erosion dongas and calcrete outcrops. Also, some of these sites are eroding out from under the overlying red (Aeolian) Kalahari sands covering large parts of the area. It is therefore expected that many sites and finds are currently invisible to the naked eye, and that suitable mitigation measurements will have to be implemented before and when the proposed prospecting activities commence.

The significance of the Stone Age sites and finds in the Boerdraai study area is deemed to be of between Medium and High. With the exact positions of the proposed prospecting boreholes on Boerdraai not provided, the cumulative impacts of these activities on these sites and the potentially many other present in the area would be difficult to determine currently. Any future full-scale mining in the area will also have a negative impact and this need to be mitigated as well. The following is recommended:

1. that the dry Kuruman River bed area located in the north-eastern corner of the study area be avoided at all costs if possible by any prospecting and future mining activities. This will included the outcrops of river gravels and banks of calcrete deposits.
2. that the exact positions of the 4 prospecting boreholes, once determined, be assessed before prospecting starts for the presence of archaeological deposits and sites. Once this has been done the cumulative impacts of the proposed prospecting can then be determined and Phase 2 mitigating measures be proposed for implementation.
3. that once full-scale mining commences that the footprint of the mine layout and areas of mining and related activities be assessed in detail.

What is clear from the assessment of the Boerdraai area is that there are numerous archaeological sites and deposits present. Any prospecting and related mining actions will negatively impact on these archaeological deposits and the Stone Age record of the area. However, without the details of the location and extent of the proposed boreholes available, the scale of impact on these resources will not be possible to be determined. The mitigation measures proposed above will serve to determine and to minimize these impacts however.

Site 1 contains a fairly large number of Stone Age tools dating to the Middle and Later Stone Ages. The material is scattered around the area of the site in an area with a deposit of river gravels. Site 2 is located in an “outcrop” of calcrete that are situated just below the overlying red sands. The scatter of stone tools is quite dense and contains flakes and flake-tools such as scrapers, cores and possible formal tools. Sites 3 & 4 are located in the dry river bed and contain scatters of MSA/LSA Stone Age artifacts. A fragment of ostrich eggshell (OES) was also identified in the area. OES was used to make beads especially during the later Stone Age. Site 7 consisted of a single stone tool, while Site 8 is represented by a single Earlier Stone Age handaxe. This find is evidence that the area might have been utilized during the whole time-frame of the Stone Age (Early to Later) and that the archaeological record here could span between 2 million and 2000 years ago.

**GPS Location of Sites:** S27 02 17.00 E22 50 33.90 (Site 1); S27 02 17.40 E22 50 34.90 (Site 2) S27 02 15.60 E22 50 49.80 (Site 3); S27 02 12.90 E22 50 32.60 (Site 4); S27 02 03.50 E22 50 08.10 (Site 7) & S27 02 13.00 E22 50 21.70 (Site 8).

**Cultural Significance:** Medium to High

**Heritage Significance:** Grade III: Other heritage resources of local importance and therefore worthy of conservation.

**Field Ratings:** Local Grade IIIB: Should be included in a Heritage register and may be mitigated (High/Medium significance).

**Mitigation:** See Above



**Figure 12: The general location of Site 1.**





**Figure 13: Some of the Stone Age material found at Site 1.**



**Figure 14: A view of the location of Site 2.**





**Figure 15: Closer view of Stone Age material in the calcrete outcrop of Site 2.**



**Figure 16: A MSA core in the area.**





**Figure 17: A fragment of ostrich eggshell found in the area.**



**Figure 18: Some of the stone tools from Site 4.**





**Figure 19: An Early Stone Age handaxe at Site 8.**

#### ***Site 5 – Historical Grave***

This site contains the single grave of one Johanna Maria du Plessis (an infant girl) who was born on the 27<sup>th</sup> of July 1927 and who passed away on the 10<sup>th</sup> of September 1928.

Graves always carry a High Cultural Heritage Significance rating and should preferably be protected and not impacted by any development. The best practice would be to steer clear of the grave site and fence it in to ensure its protection. The site should then be managed through a Heritage Management Plan. Although the grave site might not be directly impacted on by the proposed prospecting, there could be some indirect impacts on it as a result of it. It is therefore recommended that the site be properly cleaned, the grave on recorded in detail and a Graves Register be drafted and the site fenced-in properly.

Finally, if the proposed prospecting and possible future mining cannot avoid the grave site then the option to exhume and relocate the grave does exist. This will entail detailed and extensive social consultation to try and locate any possible descendants of the deceased and to obtain consent for the exhumation and relocation. Once this has been done various permits will have to be obtained before the work is conducted.

**GPS Location of Grave Site:** S27 02 08.40 E22 50 20.50.

**Cultural Significance:** High – Graves always carry a High Significance rating

**Heritage Significance:** Grade III: Other heritage resources of local importance and therefore worthy of conservation.

**Field Ratings:** Local Grade IIIB: Should be included in a Heritage register and may be mitigated (High/Medium significance).

**Mitigation:** Clean site and document grave. Fence-in and protect and include in a Graves Management Plan. Normally if graves cannot be protected in situ and is to be negatively impacted then they could be exhumed and relocated after detailed consultation with possible descendants have been concluded and permits have been obtained from various local, provincial and National government departments.



**Figure 20: Grave - Site 5.**





**Figure 21: Close-up of headstone at Site 5.**

### ***Site 6 – Historical farmhouse***

This structure is located on a part of Boerdraai and close to the area where the current farm workers on Boerdraai resides. It forms part of the larger farmhouse and its related infrastructure. Currently it is not sure if the proposed prospecting and/or possible future mining activities will impact negatively on this site. The old homestead is more than likely older than 60 years of age and if impacted then a detailed Phase 2 HIA will have to be undertaken before the structure is demolished. The structure is in a relatively bad state of repair.

**GPS Location of Site:** S27 02 04.20 E22 50 13.50.

**Cultural Significance:** Low to Medium.

**Heritage Significance:** None

**Field Ratings:** General protection B (IV B): site should be recorded before destruction (medium significance)

**Mitigation:** See above.



**Figure 22: View of Site 6 homestead.**



**Figure 23: A closer view of the Site 6 homestead.**





**Figure 24: Closer view of the study area showing the sites found during the assessment (Google Earth 2019).**

*It should be noted that although all efforts are made to cover a total area during any assessment and therefore to identify all possible sites or features of cultural (archaeological and/or historical) heritage origin and significance, that there is always the possibility of something being missed. This will include low stone-packed or unmarked graves. This aspect should be kept in mind when development work commences and if any sites (including graves) are identified then an expert should be called in to investigate and recommend on the best way forward.*

## **7. CONCLUSIONS AND RECOMMENDATIONS**

In conclusion it is possible to say that the Khwara Manganese (Pty) Ltd's proposed Iron Ore and Manganese prospecting on the farm Boerdraai 228 was conducted successfully. The prospecting and study area is located in the Joe Morolong Local Municipality, John Taolo Gaetsewe District Municipality of the Northern Cape Province. The area is situated approximately 27km north-west of the town of Hotazel.

The prospecting activities will include non-invasive and invasive activities. Non-invasive activities will comprise analyzing existing core, ground penetrating radar and hand held ground magnetic mapping. Invasive activities would comprise drilling of four prospecting boreholes on the Boerdraai farm. The location of the boreholes has not been determined. The exact location of the boreholes will be decided on once the ground penetrating radar and handheld ground magnetic mapping have been completed. It is however understood

that the orebody is anticipated to be towards the north eastern section of the farm Boerdraai 228 near the Kuruman River.

Background research indicates that there are some cultural heritage sites and features in the larger geographical area within which the study area falls, while no known sites are known for the specific study area. The assessment of the specific study area identified some sites, features or material of cultural heritage (archaeological and/or historical) origin and significance including some Stone Age and recent historical sites.

Although only 6 Stone Age sites and areas with material were physically recorded in the area during the assessment, there are many more sites and material scattered all over the area of the dry Kuruman River bed and the associated erosion dongas and calcrete outcrops. Also, some of these sites are eroding out from under the overlying red (Aeolian) Kalahari sands covering large parts of the area. It is therefore expected that many sites and finds are currently invisible to the naked eye, and that suitable mitigation measurements will have to be implemented before and when the proposed prospecting activities commence.

The significance of the Stone Age sites and finds in the Boerdraai study area is deemed to be of between Medium and High. With the exact positions of the proposed prospecting boreholes on Boerdraai not provided, the cumulative impacts of these activities on these sites and the potentially many other present in the area would be difficult to determine currently. Any future full-scale mining in the area will also have a negative impact and this need to be mitigated as well. The following is recommended:

1. It is understood that the orebody is anticipated to be towards the north eastern section of the farm Boerdraai 228 near the Kuruman River. The four prospecting boreholes need to be sited to avoid the six Stone Age sites as far as possible. In this regard, the sites need to be fenced off with a 20m buffer from each site. This 20m buffer is a typical SAHRA recommendation.
2. In the event that the any one of the six Stone Age sites cannot be avoided, a permit for the removal and/or destruction of these sites needs to be obtained from SAHRA. Linked to this is the completion of a Phase 2 HIA that needs to be undertaken by a qualified archaeologist.
3. Although only 6 Stone Age sites and areas with material were physically recorded in the area during the assessment, there are many more sites and material scattered all over the area of the dry Kuruman River bed. It follows that in the event of a chance find, a qualified archaeologist needs to be contacted.

What is clear from the assessment of the Boerdraai area is that there are numerous archaeological sites and deposits present. Any prospecting activities will negatively impact on these archaeological deposits and the Stone Age record of the area. However, without the details of the location and extent of the proposed boreholes available, the scale of impact on these resources will not be possible to be determined. The mitigation measures proposed above will serve to determine and to minimize these impacts however.

The Site 5 grave and Site 6 historical homestead and related structures are both older than 60 years of age. Graves always carry a High Cultural Heritage Significance rating and should preferably be protected and not impacted by any development. The best practice would be to steer clear of the grave site and fence (20m buffer from site) it in to ensure its protection. In terms of Site 5 (historical farm house), this facility is utilized as part of farming activities and as such fencing this activity off is not deemed practical, however this site also needs to be avoided as part of the prospecting activities and no prospecting activities may take place within 20m of this site. The site should then be managed through a Heritage Management Plan. Although the grave site might not be directly impacted on by the proposed prospecting, there could be some indirect impacts on it as a result of it. It is therefore recommended that the site be properly cleaned, the grave on recorded in detail and a Graves Register be drafted and the site fenced-in properly.

If the proposed prospecting cannot avoid the grave site (Site 6) then the option to exhume and relocate the grave does exist. This will entail detailed and extensive social consultation to try and locate any possible descendants of the deceased and to obtain consent for the exhumation and relocation. Once this has been done various permits will have to be obtained before the work is conducted.

The old farmhouse at Site 6 is more than likely older than 60 years of age. If the old farmhouse cannot be avoided then a detailed Phase 2 HIA will have to be undertaken before the structure is demolished. The structure is in a relatively bad state of repair.

**The subterranean nature of archaeological and/or historical resources (including low stone-packed or unmarked graves) should also be taken into consideration. Should any previously unknown or invisible sites, features or material be uncovered during any development actions then an expert should be contacted to investigate and provide recommendations on the way forward.**

**Finally, from a Cultural Heritage point of view the proposed Boerdraai 228 prospecting should be allowed to continue taking into consideration the recommended mitigation measures provided above.**

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## **APPENDIX A: DEFINITION OF TERMS:**

**Site:** A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artifacts, found on a single location.

**Structure:** A permanent building found in isolation or which forms a site in conjunction with other structures.

**Feature:** A coincidental find of movable cultural objects.

**Object:** Artifact (cultural object).

(Also see Knudson 1978: 20).

## **APPENDIX B: DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE**

**Historic value:** Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.

**Aesthetic value:** Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.

**Scientific value:** Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period

**Social value:** Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.

**Rarity:** Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.

**Representivity:** Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province region or locality.

## **APPENDIX C: SIGNIFICANCE AND FIELD RATING:**

### **Cultural significance:**

- Low: A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.
- Medium: Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also any important object found out of context.
- High: Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as of a high importance. Also any important object found within a specific context.

### **Heritage significance:**

- Grade I: Heritage resources with exceptional qualities to the extent that they are of national significance
- Grade II: Heritage resources with qualities giving it provincial or regional importance although it may form part of the national estate
- Grade III: Other heritage resources of local importance and therefore worthy of conservation

### **Field ratings:**

- i. National Grade I significance: should be managed as part of the national estate
- ii. Provincial Grade II significance: should be managed as part of the provincial estate
- iii. Local Grade IIIA: should be included in the heritage register and not be mitigated (high significance)
- iv. Local Grade IIIB: should be included in the heritage register and may be mitigated (high/medium significance)
- v. General protection A (IV A): site should be mitigated before destruction (high/medium significance)
- vi. General protection B (IV B): site should be recorded before destruction (medium significance)
- vii. General protection C (IV C): phase 1 is seen as sufficient recording and it may be demolished (low significance)

## **APPENDIX D: PROTECTION OF HERITAGE RESOURCES:**

### **Formal protection:**

National heritage sites and Provincial heritage sites – Grade I and II

Protected areas - An area surrounding a heritage site

Provisional protection – For a maximum period of two years

Heritage registers – Listing Grades II and III

Heritage areas – Areas with more than one heritage site included

Heritage objects – e.g. Archaeological, palaeontological, meteorites, geological specimens, visual art, military, numismatic, books, etc.

### **General protection:**

Objects protected by the laws of foreign states

Structures – Older than 60 years

Archaeology, palaeontology and meteorites

Burial grounds and graves

Public monuments and memorials

## **APPENDIX E: HERITAGE IMPACT ASSESSMENT PHASES**

1. Pre-assessment or Scoping Phase – Establishment of the scope of the project and terms of reference.
2. Baseline Assessment – Establishment of a broad framework of the potential heritage of an area.
3. Phase I Impact Assessment – Identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
4. Letter of recommendation for exemption – If there is no likelihood that any sites will be impacted.
5. Phase II Mitigation or Rescue – Planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.
6. Phase III Management Plan – For rare cases where sites are so important that development cannot be allowed.