

Phase 1 Archaeological Impact Assessment -

**(PORTIONS OF) PORTION 2 OF KLOOF 143,
HAY DISTRICT, NORTHERN CAPE, SOUTH AFRICA**

DATE: 2006-08-14



Our Ref : 2922BB 2006.001

SAHRA Ref :
DME Ref :

Phase 1 Archaeological Impact Assessment -
**(PORTIONS OF) PORTION 2 OF KLOOF 143,
HAY DISTRICT, NORTHERN CAPE, SOUTH AFRICA**



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1) PROJECT BRIEF

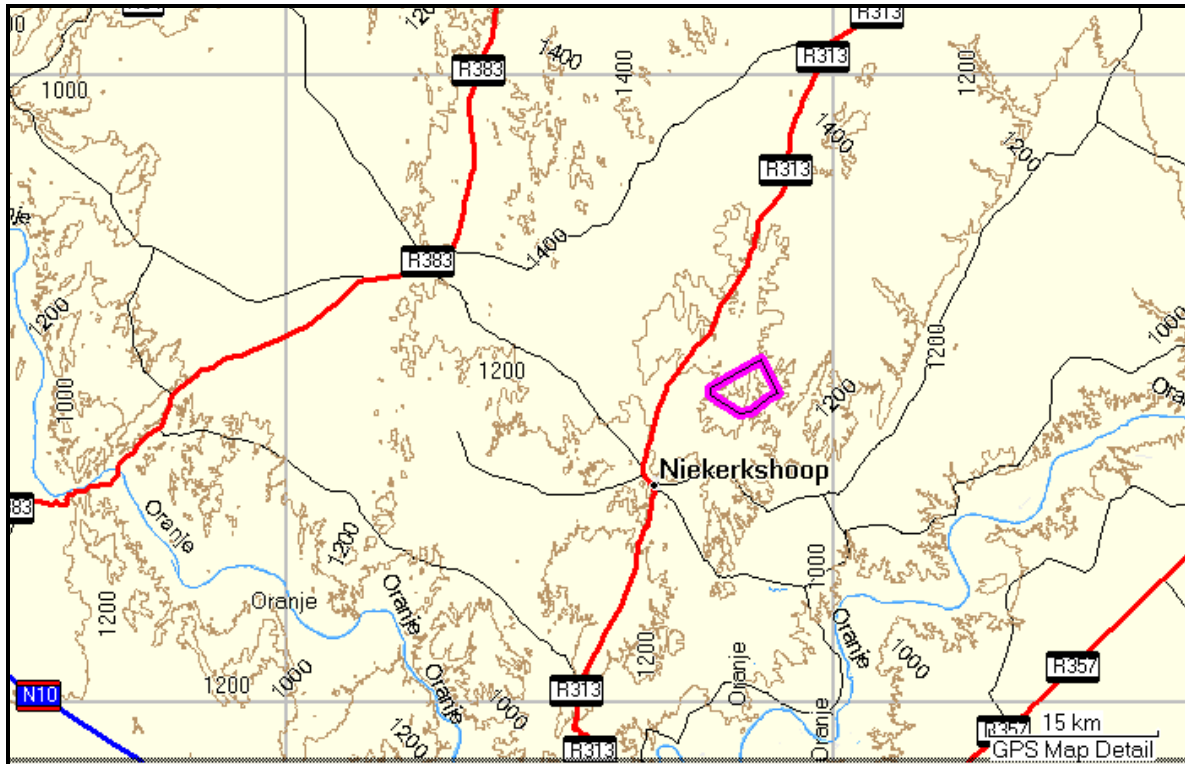
The National Museum Bloemfontein, Archaeology Contracts Office, was contracted by the developers, P.J. Smit and M.H.P. Smit, to conduct a Phase 1 Archaeological Impact Assessment. The assessment was requested in compliance with prospecting and mining right environmental requirements as set out in the Mineral and Petroleum Resources Development Act, No 28 of 2002, represented by the Department of Minerals and Energy (DME), the particulars of which are described in the National Environmental Management Act, No 107 of 1998, represented by the Department of Economic and Environmental Affairs and Tourism (DEEAT) and the National Heritage Resources Act, No 25 of 1999, represented by the South African Heritage Resources Agency (SAHRA).

The assessment was requested prior to their application to DME; no DME or SAHRA Ref. no's thus exist.

This document reports on the findings of the Archaeological Impact Assessment.

PROPERTY DESCRIPTION:

The proposed development is situated on Portion 2 of the farm Kloof 143, Hay District, within the Asbestos Mountains of the Northern Cape (1:50,000 map reference: 2922BB & 2922BD).



MAP1: General location of Portion 2 of the farm Kloof 143, Hay District, Northern Cape

DEVELOPMENT IMPACT:

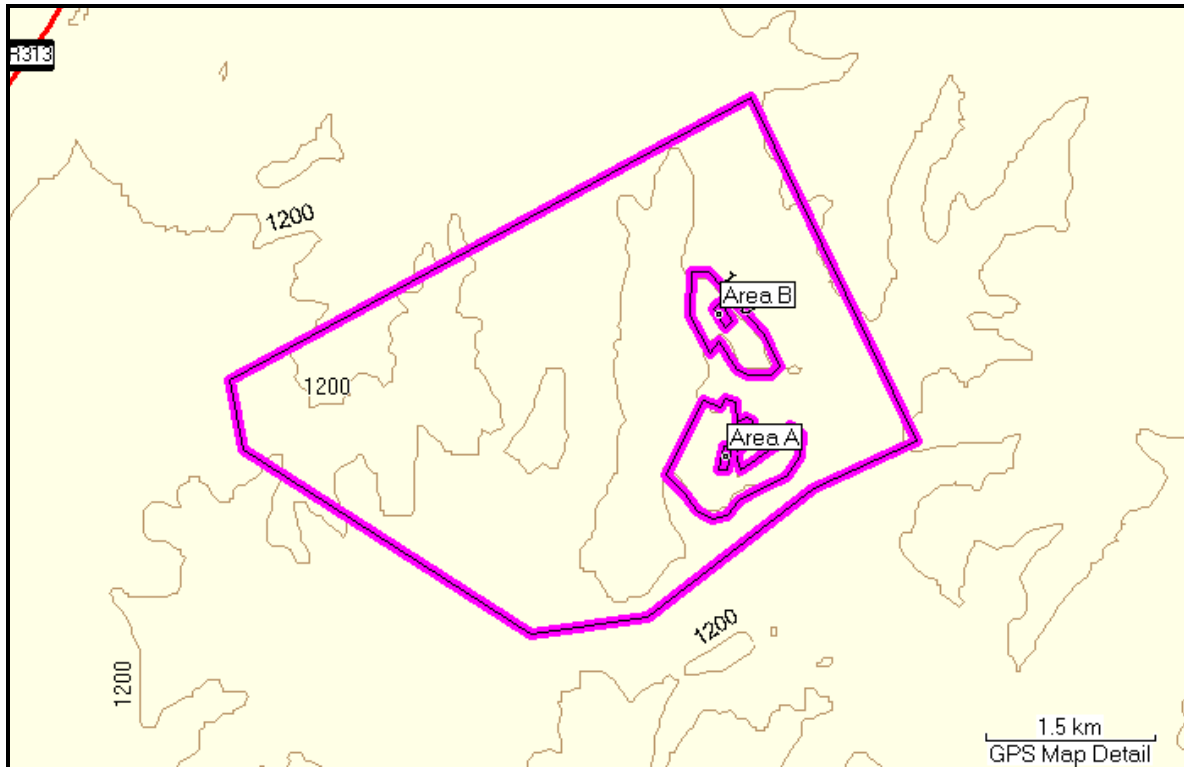
The developers intend to apply for two 1.5ha tigers' eye mining permits (mining Areas A and B) on the approximate 1,620ha property known as Portion 2 of Kloof 143. Application for Area A will be made by P.J. Smit and application for Area B by M.H.P. Smit.

Mining will be done manually (pick and shovel), by small mining crews consisting of 3->10 people. Rehabilitation forms an integrated part of the mining method; sides are rehabilitated immediately as mining progress, serving also as a means of safety to miners. Mining will largely be restricted to areas formerly impacted on by tigers' eye mining activities. The processing and rehabilitation of old mine dumps will form a further part of both applications. Existing farm access roads will be used during mining operations.

2) THE ARCHAEOLOGICAL IMPACT ASSESSMENT

I visited the site on 2006-07-31. Assessment focussed on the general areas surrounding both proposed mining Areas A and B. The assessment was limited to a Phase 1 surface survey, done by foot and vehicle. No excavation or sub-surface testing was done since a permit from SAHRA is required to do so. Sub-surface interpretations are based on inspected existing open mining sections. GPS co-ordinates were taken with a Garmin e-trex vista GPS (3-8 m error margin). Photographic documentation was done with a Casio exilim EX-S2 camera.

The assessment covered existing access roads and proposed mining Areas A and B.



MAP2: Close-up of the property Portion 2 of Kloof 143, indicating the locality of proposed 1.5 ha mining areas, Area A and Area B and the assessed areas surrounding these localities

ACCESS ROADS

Proposed tiger's eye mining development in Areas A and B will make use of existing farm roads as an integral part of the *mining area(s)* as defined in the MPRDA (2002). In totality roads are in excess of 300m and subject to assessment requirements of the NHRA (1999).

- No cultural heritage resources as defined and protected by the NHRA (1999) were identified during assessment of the access roads. Low impact mining activities will not require any alterations to the roads.

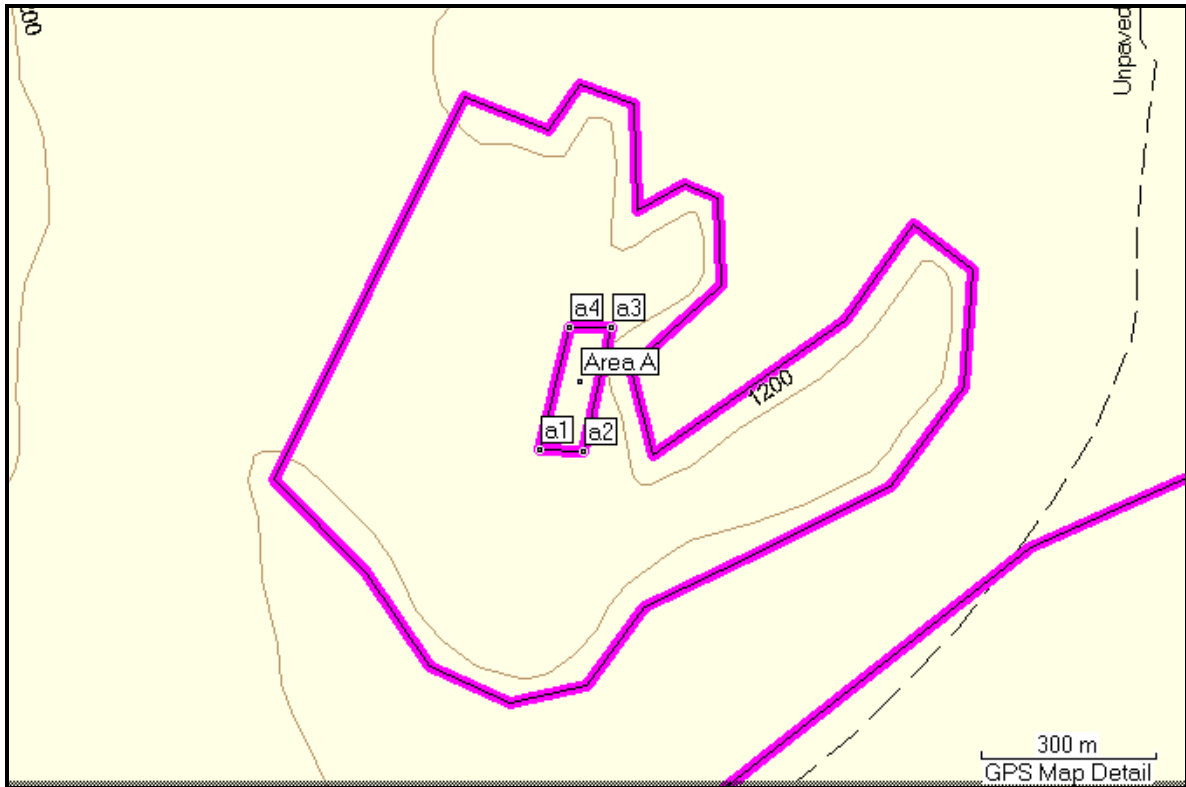
MINING AREA A

Mining in proposed mining Area A will exceed ½ ha, the proposed development is thus subject to requirements of the NHRA (1999).

An approximate 67ha area incorporating proposed mining Area A (a1-a4) was assessed. The general area is characterised by a high rise overlooking a valley to the north-east. Geologically the area comprise of banded ironstone within which bands of tigers' eye (fossilized asbestos) were formed. Banded ironstone often surface, with little to no topsoil (Hutton sand), providing minimum context material for archaeological or cultural remains.

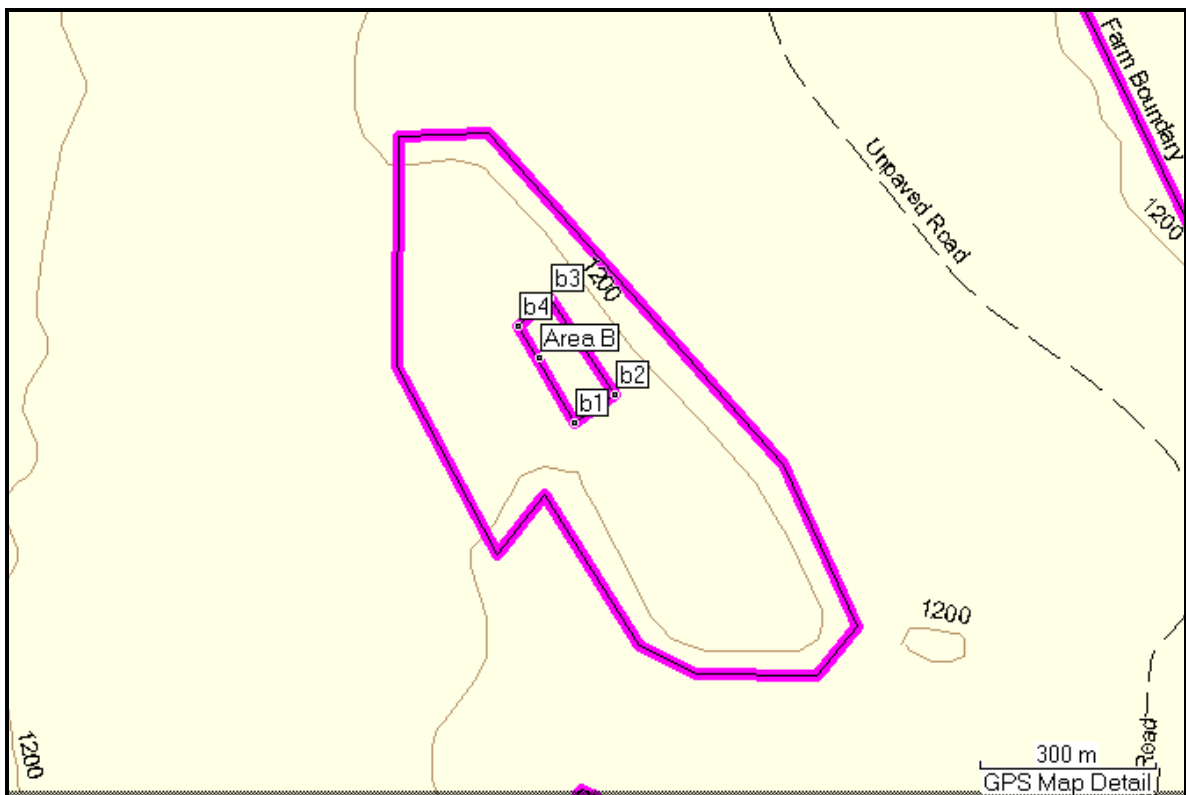
A number of Stone Age artefacts were identified within the assessed area. No associated faunal or organic material was observed. Typologically and technologically the artefacts can be ascribed to the Middle Stone Age (MSA). Artefacts were produced from yellow jasperlite; a lesser indigenous raw material to the area. No artefacts were produced from banded ironstone, probably due to the flake-like quality of the local banded ironstone. Artefact ratios (artefacts:m²) are extremely low, approaching ≤1:100. Artefacts were observed on exposed basal layers (banded ironstone) or within shallow Hutton sand. Exposed mining sections and the geological stratigraphy of the hill supports the observation that little archaeological stratigraphic depth can be expected, and if so in a disturbed Hutton sand context only.

- In general the archaeology can be described as a low density MSA lithic scatter. The heritage significance of he assessed area can be described as of *Low Significance* with a *General Protected C* field rating (the site does not require further recording before destruction).



MAP3: Locality of proposed 1.5 ha mining Area A (a1-a4) and the general assessed area surrounding Area A

MINING AREA B



MAP3: Locality of proposed 1.5 ha mining Area B (b1-b4) and the general assessed area surrounding Area B
 Mining in proposed mining Area B will exceed ½ ha, the proposed development is thus subject to requirements of the NHRA (1999).

An approximate 38ha area incorporating proposed mining Area B (b1-b4) was assessed. The general area is topographically and geologically very similar to the area surrounding mining Area A; namely a high rising banded ironstone hill overlooking a valley to the north-east. Basal banded ironstone surfaces on regular occasions, indicating shallow Hutton sand cover, if present.

Identified archaeological material was restricted to a number of MSA lithic artefacts, primarily made from yellow jasperlite. Low artefact ratios, approximating $\leq 1:100$ was recorded. Artefacts were observed on exposed banded ironstone surfaces or within shallow Hutton sand pockets.

- The low quantity of artefacts together with their limited, secondary proximity in Hutton sand pockets would ascertain a *Low Significance* to the artefact scatter with a *General Protected C* field rating (the site does not require further recording before destruction).

DEVELOPMENT AREA	RECORDED SITES, FIND PLACES AND FEATURES	IMAGE NR	CO-ORDINATES	
			SOUTH	EAST
ASSESSED AREA A				
Mining Area A	a1	Image 1	S29° 15' 24.0"	E22° 55' 53.3"
	a2	Image 1	S29° 15' 24.1"	E22° 55' 56.1"
	a3	Image 1	S29° 15' 17.2"	E22° 55' 57.8"
	a4	Image 1	S29° 15' 17.2"	E22° 55' 55.2"
ASSESSED AREA B				
Mining Area B	b1	Image 4	S29° 14' 43.3"	E22° 55' 55.5"
	b2	Image 4	S29° 14' 41.8"	E22° 55' 58.1"
	b3	Image 4	S29° 14' 36.4"	E22° 55' 54.0"
	b4	Image 4	S29° 14' 38.0"	E22° 55' 52.0"

TABLE 1: GPS co-ordinates of the proposed development area, identified and associated sites and features

3) IMAGE GALLERY



IMAGE 1: General view of proposed mining Area A



IMAGE 2: Banded ironstone surface cover incorporating a low density MSA lithic scatter in assessed Area A



IMAGE 3: Jasperlite MSA artefacts from assessed Area A



IMAGE 4: General view of proposed mining Area B



IMAGE 5: General view: assessed Area B



IMAGE 6: Banded ironstone surface cover incorporating a low density MSA lithic scatter in assessed Area B

4) CONCLUSION

Assessment of a 67ha area incorporating proposed mining Area A (1.5) and a 38ha area incorporating proposed mining Area B (1.5ha) indicated that the general area is archaeologically characterised by a low density MSA lithic scatter. Artefacts were produced from a yellow jasperlite, a raw material indigenous, but not primary, to the immediate surrounds. The collection consists mostly of irregularly shaped scrapers, with a number of cores and waste material present. No associated faunal or palaeo-botanical material was observed.

The secondary context of artefacts are ascribed to palaeo-environmental processes; where the original context have largely been weathered away leaving artefacts exposed on basal banded ironstone surfaces interspersed with shallow pockets of Hutton sand.

In both assessed Areas A and B low density lithic artefact scatters can be described as of *Low Significance* with a *General Protected C* field rating (the sites does not require further recording before destruction).

Apart from the above-mentioned low density MSA lithic artefact scatters no built structures older than 60 years, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, cultural landscapes or viewsapes or palaeontological deposits that require protection under the NHRA (1999) have been identified.

5) RECOMMENDATIONS

Initial mining right applications will focus on two 1.5ha areas situated within assessed Areas A and B respectively.

I would recommend that mining in both assessed Areas A and B proceed without the developer having to apply for destruction permits.

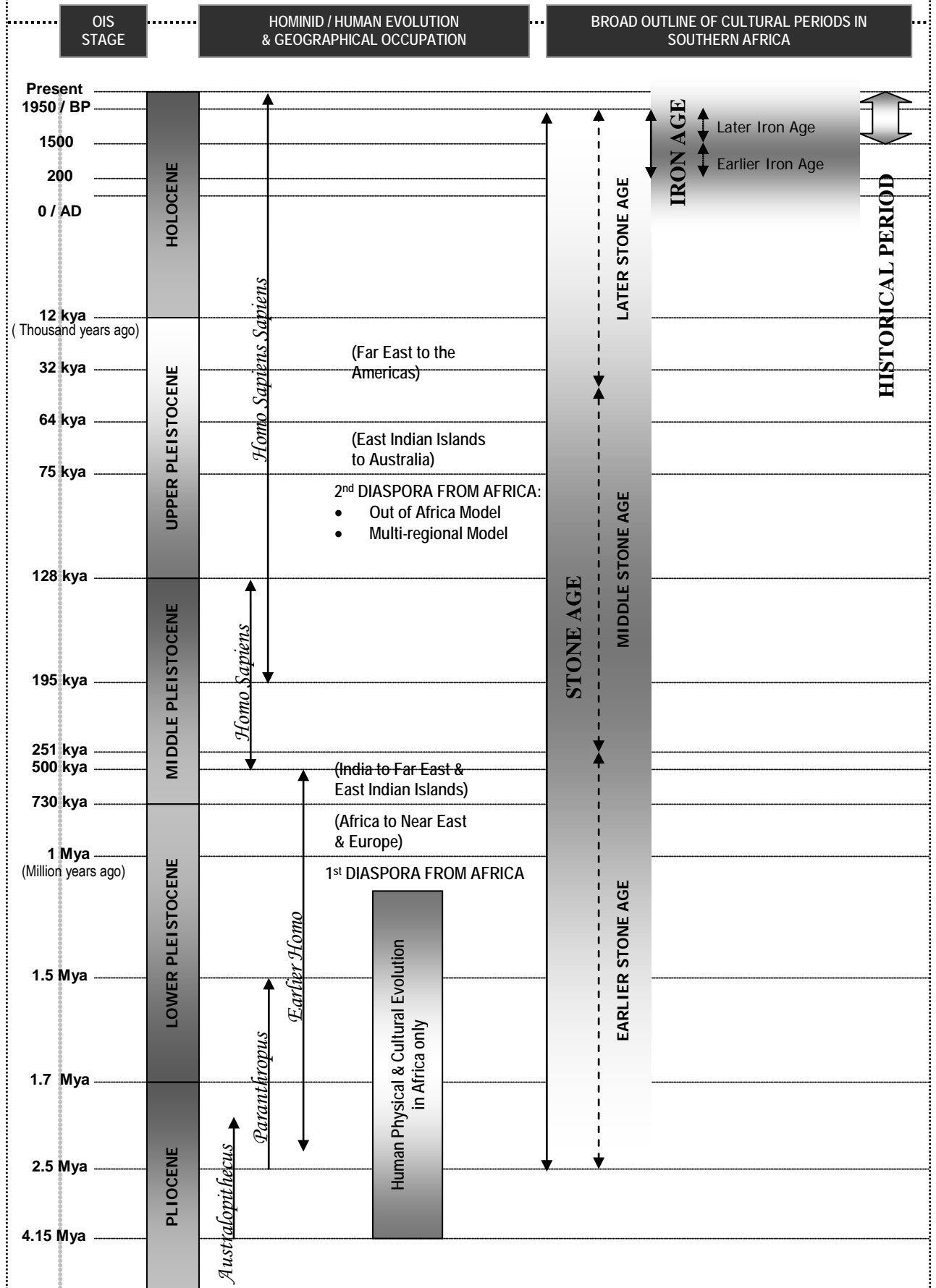
6) ACKNOWLEDGEMENTS

I would like to thank P.J. Smit for accompanying me to the site and for supplying development and on site information.

NOTE: Should the developer encounter any heritage resources, not reported on in this report, and as defined and protected by the NHRA (1999) during the course of development, the developer should immediately cease operation in the immediate vicinity and report the site to SAHRA or an ASAPA accredited CRM archaeologist.



Schematic Outline of the Pre-historic and Historic Periods



NATIONAL HERITAGE RESOURCES ACT (NO 25 OF 1999)

DEFINITIONS

Section 2

In this Act, unless the context requires otherwise:

- ii. *"Archaeological"* means –
 - a) material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
 - b) rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10 m of such representation;
 - c) wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the Republic, ... and any cargo, debris, or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation.
- viii. *"Development"* means any physical intervention, excavation or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including –
 - a) construction, alteration, demolition, removal or change of use of a place or structure at a place;
 - b) carrying out any works on or over or under a place;
 - c) subdivision or consolidation of land comprising, a place, including the structures or airspace of a place;
 - d) constructing or putting up for display signs or hoardings;
 - e) any change to the natural or existing condition or topography of land; and
 - f) any removal or destruction of trees, or removal of vegetation or topsoil;
- xiii. *"Grave"* means a place of interment and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place;
- xxi. *"Living heritage"* means the intangible aspects of inherited culture, and may include –
 - a) cultural tradition;
 - b) oral history;
 - c) performance;
 - d) ritual;
 - e) popular memory;
 - f) skills and techniques;
 - g) indigenous knowledge systems; and
 - h) the holistic approach to nature, society and social relationships.
- xxxi. *"Palaeontological"* means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace;
- xli. *"Site"* means any area of land, including land covered by water, and including any structures or objects thereon;
- xliv. *"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;

NATIONAL ESTATE

Section 3

- 1) For the purposes of this Act, those heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate and fall within the sphere of operations of heritage resources authorities.
- 2) Without limiting the generality of subsection 1), the national estate may include –
 - 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 natural features of cultural significance;
 - e) geological sites of scientific or cultural importance
 - f) archaeological and palaeontological sites;
 - g) graves and burial grounds, including –
 - i. ancestral graves;
 - ii. royal graves and graves of traditional leaders;
 - iii. graves of victims of conflict
 - iv. graves of individuals designated by the Minister by notice in the Gazette;
 - v. historical graves and cemeteries; and
 - vi. other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No 65 of 1983)
 - h) sites of significance relating to the history of slavery in South Africa;

- i) movable objects, including –
 - i. objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
 - ii. objects to which oral traditions are attached or which are associated with living heritage;
 - iii. ethnographic art and objects;
 - iv. military objects;
 - v. objects of decorative or fine art;
 - vi. objects of scientific or technological interest; and
 - vii. books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 xiv) of the National Archives of South Africa Act, 1996 (Act No 43 of 1996).

STRUCTURES

Section 34

- 1) No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

ARCHAEOLOGY, PALAEOLOGY AND METEORITES

Section 35

- 3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.
- 4) No person may, without a permit issued by the responsible heritage resources authority –
 - a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
 - b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
 - c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
 - d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
- 5) When the responsible heritage resources authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or palaeontological site is under way, and where no application for a permit has been submitted and no heritage resources management procedure in terms of section 38 has been followed, it may –
 - a) serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order;
 - b) carry out an investigation for the purpose of obtaining information on whether or not an archaeological or palaeontological site exists and whether mitigation is necessary;
 - c) if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph a) to apply for a permit as required in subsection 4); and
 - d) recover the costs of such investigation from the owner or occupier of the land on which it is believed an archaeological or palaeontological site is located or from the person proposing to undertake the development if no application for a permit is received within two weeks of the order being served.
- 6) The responsible heritage resources authority may, after consultation with the owner of the land on which an archaeological or palaeontological site or meteorite is situated, serve a notice on the owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

BURIAL GROUNDS AND GRAVES

Section 36

- 3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority –
 - a) destroy, damage, alter, exhume or remove from its original position or 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, 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 equipment, or any equipment which assists in the detection or recovery of metals.
- 4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction of any burial ground or grave referred to in subsection 3a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.
- 5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection 3b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority –
 - a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and

- b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.
- 6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority –
 - a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and
 - b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

HERITAGE RESOURCES MANAGEMENT

Section 38

- 1) Subject to the provisions of subsections 7), 8) and 9), any person who intends to undertake a development categorised as –
 - a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
 - b) the construction of a bridge or similar structure exceeding 50 m in length;
 - c) any development or other activity which will change the character of a site –
 - i. exceeding 5 000 m² in extent; or
 - ii. involving three or more existing erven or subdivisions thereof; or
 - iii. involving three or more erven or subdivisions thereof which have been consolidated within the past five years; or
 - iv. the costs which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
 - d) the rezoning 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,

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

- 2) The responsible heritage resources authority must, within 14 days of receipt of a notification in terms of subsection 1) –
 - a) if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report. Such report must be compiled at the cost of the person proposing the development, by a person or persons approved by the responsible heritage resources authority with relevant qualifications and experience and professional standing in heritage resources management; or
 - b) notify the person concerned that this section does not apply.
- 3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection 2a) ...
- 4) The report must be considered timeously by the responsible heritage resources authority which must, after consultation with the person proposing the development decide –
 - a) whether or not the development may proceed;
 - b) any limitations or conditions to be applied to the development;
 - c) what general protections in terms of this Act apply, and what formal protections may be applied, to such heritage resources;
 - d) whether compensatory action is required in respect of any heritage resources damaged or destroyed as a result of the development; and
 - e) whether the appointment of specialists is required as a condition of approval of the proposal.

APPOINTMENT AND POWERS OF HERITAGE INSPECTORS

Section 50

- 7) Subject to the provision of any other law, a heritage inspector or any other person authorised by a heritage resources authority in writing, may at all reasonable times enter upon any land or premises for the purpose of inspecting any heritage resource protected in terms of the provisions of this Act, or any other property in respect of which the heritage resources authority is exercising its functions and powers in terms of this Act, and may take photographs, make measurements and sketches and use any other means of recording information necessary for the purposes of this Act.
- 8) A heritage inspector may at any time inspect work being done under a permit issued in terms of this Act and may for that purpose at all reasonable times enter any place protected in terms of this Act.
- 9) Where a heritage inspector has reasonable grounds to suspect that an offence in terms of this Act has been, is being, or is about to be committed, the heritage inspector may with such assistance as he or she thinks necessary –
 - a) enter and search any place, premises, vehicle, vessel or craft, and for that purpose stop and detain any vehicle, vessel or craft, in or on which the heritage inspector believes, on reasonable grounds, there is evidence related to that offence;
 - b) confiscate and detain any heritage resource or evidence concerned with the commission of the offence pending any further order from the responsible heritage resources authority; and
 - c) take such action as is reasonably necessary to prevent the commission of an offence in terms of this Act.

- 10) A heritage inspector may, if there is reason to believe that any work is being done or any action is being taken in contravention of this Act or the conditions of a permit issued in terms of this Act, order the immediate cessation of such work or action pending any further order from the responsible heritage resources authority