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Cultural Resources Management Impact Assessment:  
(PORTION OF) AREACHAP 426,  
UPINGTON DISTRICT, NORTHERN CAPE,  
SOUTH AFRICA

2005-10-27



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McGREGOR MUSEUM, KIMBERLEY

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(PORTION OF) AREACHAP 426,  
UPINGTON DISTRICT, NORTHERN CAPE,  
SOUTH AFRICA

**REPORT TO –**

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## 1) Project Brief

The McGregor Museum CRM Unit was contracted by the developer, Amber Mountain Investments, to conduct a Phase 1 Cultural Resources Management (CRM) impact assessment. The impact 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 Environmental Affairs & Tourism (DEAT) and the National Heritage Resources Act, No 25 of 1999, represented by the South African Heritage Resources Agency (SAHRA).

This document reports on the findings of the CRM assessment.

## 2) The CRM Assessment

### **PROPERTY DESCRIPTION:**

The proposed localised zinc, copper and sulphur mining development is situated on a portion of the property known as Areachap 426, in the Upington District of the Northern Cape, South Africa (1:50,000 map reference: 2820BB Gelugspruit, 2820BD Colston, 2821AA Gams and 2821AC Upington).

### **DEVELOPMENT IMPACT:**

The developer has applied for a prospecting and mining permit / right for an approximate 120 ha area (ARC 1). The proposed development will thus be localised and impact restricted to the access road and ARC 1. Material will be processed on site and existing on site buildings (dating to the opening of the mine in the late 1960's, early 1970's) will be upgraded for use during the course of development.

Prospecting will impact on a number of areas in a 1 km – 500 m to 300 – 50 m surface grid, where samples impacting on up to 20 cm of the sub-surface deposit will be taken. Sample sizes will not exceed 2 kg in mass. Geochemical sampling will be taken on a 50 m surface grid, impacting sub-surface up to 20 cm. Sample sizes will not exceed 500 g in mass. Prospecting is also envisioned to include approximately 70 drill holes ranging in size from 165 – 300 mm in diameter each. Prospecting impact will thus be limited.

Mechanised mining impact will be total and will result in the loss of surface and sub-surface context of cultural material.

### **CRM ASSESSMENT METHODOLOGY:**

One McGregor Museum CRM Unit staff member, accompanied by Mr. JP van Niekerk and Mr. Jan van Zyl (Amber Mountain Investments) visited the site on 2005-10-24. The assessment was limited to a Phase 1 surface survey. No excavation or subsurface testing was done since a permit from SAHRA is required to do so. 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 the:

- i. Existing access road; and
- ii. Proposed mining area ARC 1.

In accordance with current legislation no development had started prior to the CRM impact assessment.

**CRM ASSESSMENT FINDINGS:****i EXISTING ACCESS ROADS:**

An existing gravel access road on the property will be utilised during proposed mining development. The road is longer than 300 m, any impact thereon or alteration thereto is covered by the NEMA (1998) and the NHRA (1999).

The access road is intersected by concentrations of low density artefacts generally in association with shallow calcrete outcrops. Artefacts are representative of Middle Stone Age (MSA) tool types.

**ii PROPOSED MINING AREA ARC 1:**

Mining will impact on an area of approximately 120 ha. Any impact thereon or alteration thereto is covered by the MPRDA (2002), the NEMA (1989) and the NHRA (1999).

The development area is characterised by a low density artefact concentration identifiable within shallow calcrete outcrops. Calcrete outcrops are mantled by Hutton sands.

Formal artefact tool types are representative of the Middle Stone Age (MSA). General non-temporally identifiable artefacts include cores and flakes, associated with the MSA *fossils directeurs*. Artefact ratios (artefact: m<sup>2</sup>) vary from 1: 25 – 4:1 throughout the number of recorded calcrete outcrops, with the highest recorded concentration ratio of 8.5:1 located on the south-western corner of the development area (FS 21). Find spot FS 21 however represent a lag deposit and scientific information relating to technological and typological stratigraphic sequencing and dating would not be possible due to the absence of adequate *in situ* context.

In general artefact concentrations are restricted to calcrete outcrops areas. The only two find spots located within Hutton sand contexts are FS 22 and FS 23, both with an artefact ratio of <1:1. Animal burrows in red sands provided a sub-surface interpretation of the deposit. In general soil from burrows seemed to be artefactually sterile with a low concentration of flakes detected in burrows along the northern and eastern part of ARC 1, supporting the observation that artefact concentrations are primarily restricted to calcrete outcrops.

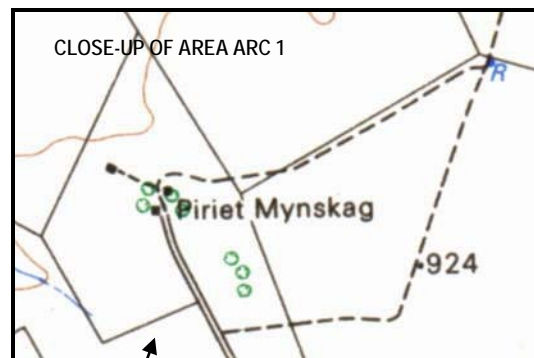
On site structures were erected during the late 1960's, early 1970's. Buildings will be renovated for use during the mining operation. None of the structures are older than 60 years and as such protected by the NHRA (1999)

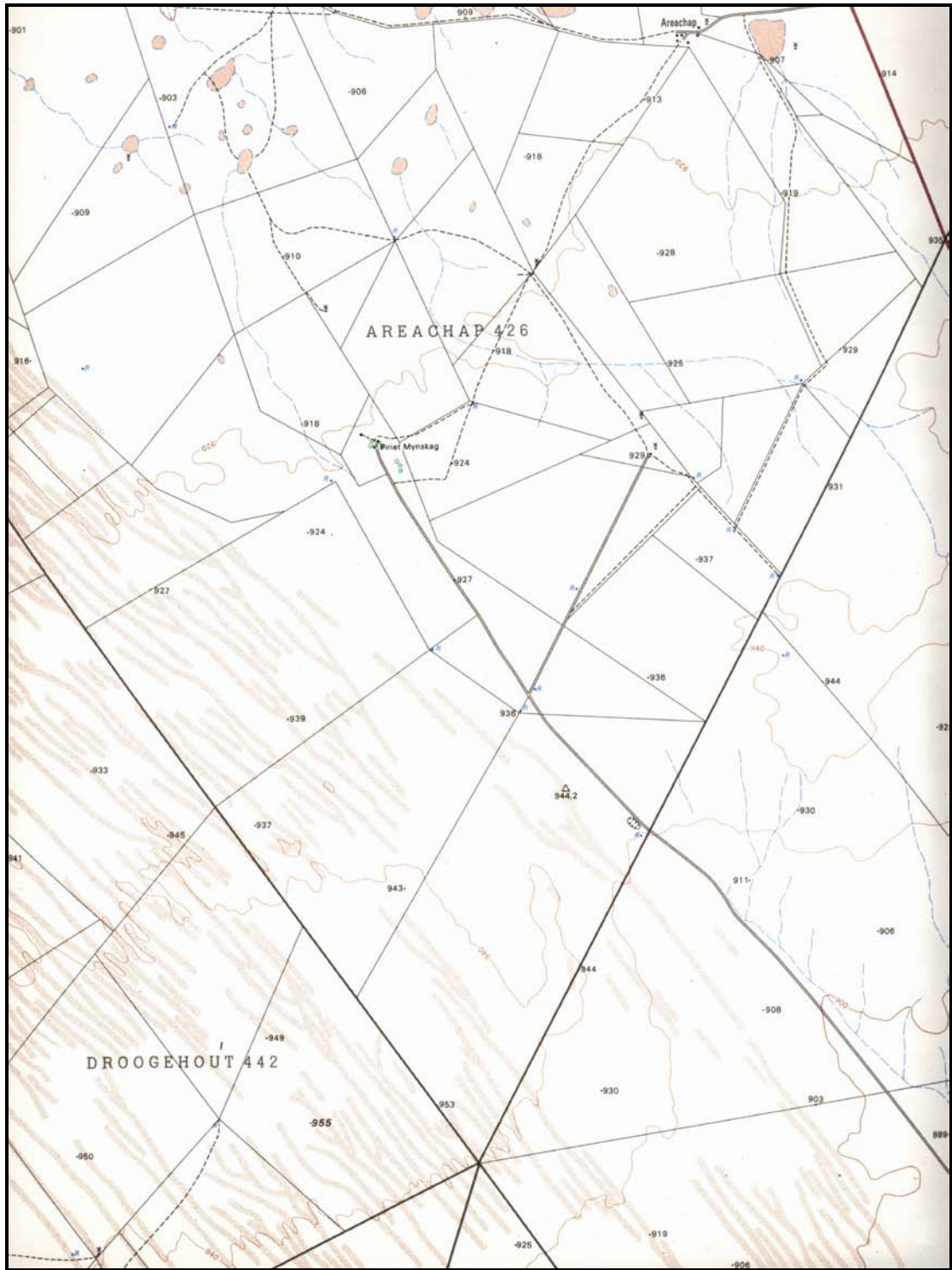
Development section	Recorded sites / findplaces / features	Image nr	Co-ordinates	
			South	East
Mining area ARC 1	Existing mine complex		S 28°17'44.0"	E 21°02'36.4"
	<i>Recorded find spots within calcrete outcrops</i>			
	FS 1 (app. 40 x 25 m area)		S 28°17'43.4"	E 21°02'41.9"
	FS 2 (app. 6 x 6 m area)		S 28°17'48.2"	E 21°02'40.9"
	FS 3 (app. 6 x 6 m area)		S 28°17'48.0"	E 21°02'46.2"
	FS 4 (app. 8 x 6 m area)		S 28°17'47.0"	E 21°02'51.1"
	FS 5 (app. 6 x 4 m area)		S 28°17'49.5"	E 21°02'52.7"
	FS 6 (app. 4 m in width to FS 7...)		S 28°17'51.2"	E 21°02'56.8"
	FS 7		S 28°17'49.8"	E 21°02'57.8"
	FS 8 (app. 4 m in width to FS 9...)		S 28°17'40.5"	E 21°02'49.1"

	FS 9	S	28°17'38.3"	E	21°02'48.6"
	FS 10 (app. 30 x 30 m area)	S	28°17'39.1"	E	21°02'43.9"
	FS 11 (app. 6 m in width to FS 12...)	S	28°17'32.6"	E	21°02'40.2"
	FS 12	S	28°17'35.7"	E	21°02'43.7"
	FS 13 (app. 4 x 8 m area)	S	28°17'33.6"	E	21°02'37.6"
	FS 14 (area FS 14 – FS 15 – FS 16)	S	28°17'32.4"	E	21°02'31.5"
	FS 15	S	28°17'36.8"	E	21°02'28.2"
	FS 16	S	28°17'41.4"	E	21°02'33.0"
	FS 17 (app.6 x 4 m area)	S	28°17'42.9"	E	21°02'29.5"
	FS 18 (app. 6 x 6 m area)	S	28°17'44.4"	E	21°02'27.6"
	FS 19 (app 6 m in width to FS 20)	S	28°17'46.5"	E	21°02'21.6"
	FS 20	S	28°17'47.6"	E	21°02'19.5"
	FS 21 (app. 30 x 20 m area)	S	28°17'48.8"	E	21°02'17.4"
	FS 22 (app. 2 x 2 m area)	S	28°17'56.7"	E	21°02'28.7"
	FS 23 (Hutton sands)	S	28°17'57.0"	E	21°02'38.6"
	FS 24 (app. 4 x 4 m area)	S	28°18'02.2"	E	21°02'38.4"
	FS 25 (app. 6 x 4 m area)	S	28°18'04.4"	E	21°02'40.8"
	FS 26 (app 4 x 4 m area)	S	28°18'06.0"	E	21°02'42.1"
	FS 27 (area FS 27 – FS 28 – FS 29)	S	28°17'58.2"	E	21°02'46.2"
	FS 28	S	28°17'55.3"	E	21°02'45.5"
	FS 29	S	28°17'51.7"	E	21°02'42.1"

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

**MAP 1:** Extract of the 1:50,000 map 2821AC Upington indicating a portion of the farm Areachap 426 on which the proposed Amber Mountain development is situated.





### 3) Image Gallery





**IMAGE 1 & 2:** Existing mine complex (buildings and mine dump)



**IMAGE 3:** Existing open mine: note the shallow surface / cultural deposit in relation to the geological stratigraphy



**IMAGE 4:** Artefacts from FS 1  
5



**IMAGE 5:** Artefacts from FS  
7





**IMAGE 6:** Artefacts from FS 11



**IMAGE 7:** Artefacts from FS 21



**IMAGE 8:** Artefacts from FS 22



**IMAGE 9:** Artefacts from FS 23



**IMAGE 10:** View of find spot FS 21

## 4) Interpretation



Low density Middle Stone Age (MSA) artefact collections primarily concentrated at shallow calcrete outcrops characterises the mining area inclusive of the access road and area ARC 1. Find spot FS 21 represents the densest concentration of MSA artefacts in a lag deposit context located during the survey. Low density artefact concentrations seem to be a general feature throughout most of the landscape. Low density spreads of artefacts have little to no scientific and by implication mitigatory value. Richer concentrations of MSA artefacts, such as represented by FS 21 may well hold scientific value, provided a better *in situ* context is present, a possibility that can not be excluded upon further survey of the property.

## 5) Conclusion

The assessment focussed on the identification of cultural heritage resources, inclusive of archaeological deposits and their significance, built structures older than 60 years, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict and cultural landscapes or viewsapes as protected by the NHRA (1999).

No cultural heritage resources as defined and protected by the NHRA (1999) will be impacted on by the proposed localised mining development (inclusive of prospecting and mining impact on demarcated area ARC 1 and upgrading and use of the access road).

## 6) Recommendations

I would recommend that development (prospecting and mining) continues as applied for.

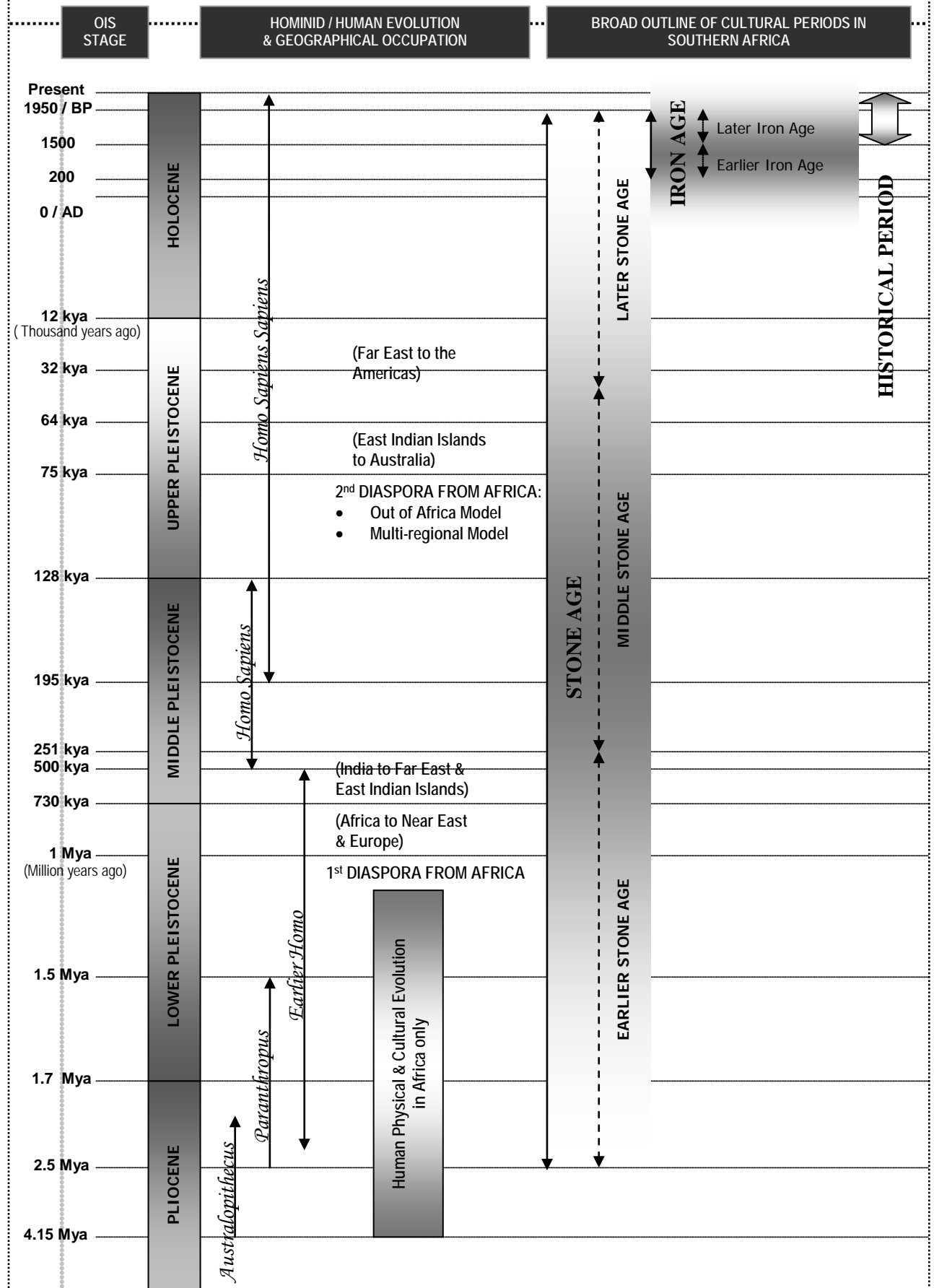
## 7) Acknowledgements

I would like to thank Mr. JP van Niekerk and Mr. Jan van Zyl (Amber Mountain Investments) for accompanying me to the site and for supplying mining and on site information.

**NOTE:** In accordance with the NHRA (1999), should any cultural heritage site be encountered during the course of development, the developer should immediately seize operation in the immediate vicinity and report the find to SAHRA.

McGregor Museum, Department of Archaeology, CRM Unit		
Name	Designation	ASAPA Accreditation
David Morris	Head of Archaeology	Principal Investigator
Karen van Ryneveld	Archaeologist	Field Director

# 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 m<sup>2</sup> 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 m<sup>2</sup> in extent; or
  - e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,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.