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Phase 1 Archaeological Impact Assessment -
**PORTION OF MOOIPAN 625, MEMEL,
PHUMELELA DISTRICT, FREE STATE, SOUTH AFRICA**

DATE: 2006-09-20



Our Ref : 2729DA 2006.001

SAHRA Ref : N/A
DEAT Ref : N/A

Phase 1 Archaeological Impact Assessment -
**Portion of Mooipan 625, Memel,
PHUMELELA DISTRICT, FREE STATE, SOUTH AFRICA**

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EXTRACTS from the NATIONAL HERITAGE RESOURCES ACT
(No 25 of 1999)

1) PROJECT BRIEF

The National Museum Bloemfontein, Archaeology Contracts Office, was contracted by Bokamoso Consultants Environmental & Geohydrological Scientists, to conduct a Phase 1 Archaeological Impact Assessment. The assessment was requested in compliance with environmental development requirements as prescribed by the National Environmental Management Act, No 107 of 1998, and associated regulations, 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).

The developer requested the assessment prior to a formal SAHRA request; no SAHRA or DEAT Ref no's exist. This document reports on the findings of the Archaeological Impact Assessment.

2) PROPOSED DEVELOPMENT AREA

The proposed development of sewerage treatment works is situated on the Municipal owned farm of Mooipan 625, Memel, in the Phumelela District, Free State (1:50,000 map reference: 2729 DA Memel) approximately 1km southwest of the Town of Memel. It is located just south of the R34 and west of the Pampoenspruit (Map 1).

Surveyed Area		
	South	East
North East	27° 40' 59.6"	29° 32' 44.1"
South East	27° 41' 09.6"	29° 32' 36.0"
South West	27° 41' 00.4"	29° 32' 19.5"
North West	27° 40' 5.05"	29° 32' 27.3"



Map 1: Location of surveyed area, Mooipan 625, Memel, Phumelela District, Free State, South Africa

3) PROPOSED DEVELOPMENT

The proposed construction of the sewerage treatment works will comprise the following:

- Sluice Gates;
- Tanker Discharge points
- 3 Anaerobic Ponds (4m);
- 4 Maturation Ponds (1.3m);
- 1 Facultative Pond 92m);
- 1 Evaporation Bed;
- Outfall Sewer Line (2,84 km in length and diameter of 350mm);
- Parking Bays
- Site offices and
- Security fencing.

4) SITE INSPECTION

A single day assessment was conducted on the property (2006-09-19). The coordinates for the proposed development area were not available on the day of the visit. There were also no survey points for the proposed development marked on the property itself. It was therefore decided to survey a larger area, thus ensuring that the proposed development area is included (See Map 2). The area between the marked-surveyed-area and the R34 was also surveyed.

The assessment was limited to a Phase 1 surface survey, done by foot. No excavation or sub-surface testing was done since a permit from SAHRA is required to do so. Animal burrows (Images 1-2, 4-5, 7-10) and sinkholes (Images 3,6) were used in some areas for sub-surface inspection (Table 1). The area is densely covered with grass; special attention was therefore given to footpaths (Image 13–14) and the access road (Image 15-16).

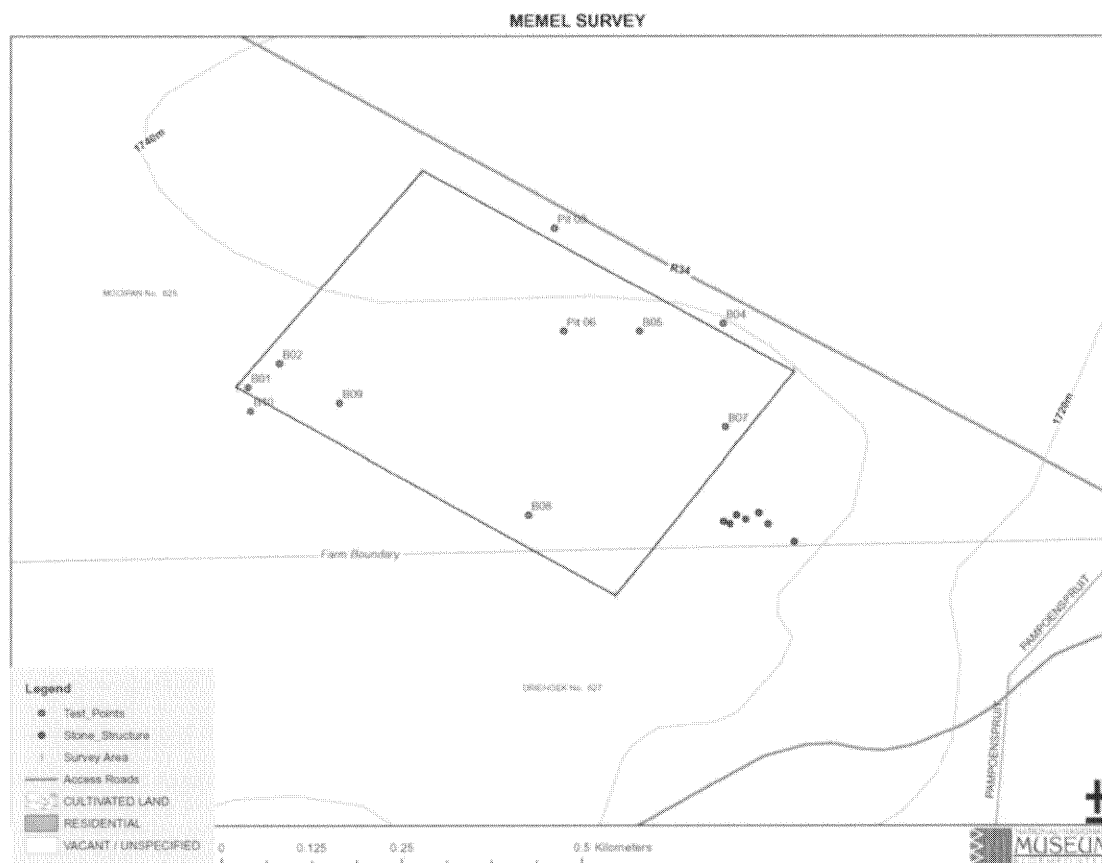
Sub-surface inspection	IMAGE NR	CO-ORDINATES	
		South	East
Burrow 01	Image 03	27° 41' 00.4"	29° 32' 19.5"
Burrow 02	Image 04	27° 40' 59.3"	29° 32' 20.9"
Pit 03	Image 05	27° 40' 53.1"	29° 32' 33.3"
Burrow 04	Image 06	27° 40' 57.4"	29° 32' 40.9"
Burrow 05	Image 07	27° 40' 57.7"	29° 32' 37.1"
Pit 06	Image 08	27° 40' 57.6"	29° 32' 33.7"
Burrow 07	Image 09	27° 41' 01.9"	29° 32' 41.0"
Burrow 08	Image 10	27° 41' 06.1"	29° 32' 32.1"
Burrow 09	Image 11	27° 41' 00.9"	29° 32' 23.6"
Burrow 10	Image 12	27° 41' 01.3"	29° 32' 19.6"

TABLE 1: GPS co-ordinates of inspected animal burrows and sinkholes.

Stone structures were encountered to the east of the proposed development area, west of the Pampoenspruit (Images 17-25). Seven rectangular enclosures varying in size were visible (Table 2); some are more exposed than others. These stone foundations are most likely from an earlier farmstead and accompanying structures. One lower grinding stone was found in the southeast corner of Structure 1 (Image 18). No other cultural material was visible around these structures. The eastern most structure is used as a present day dumping site (Image 24).

SURROUNDING AREA	IMAGE NR	CO-ORDINATES	
		South	East
Stone foundations			
Stone Structure 01	Image 17-19	27° 41' 06.4"	29° 32' 40.9"
Stone Structure 02	Image 20	27° 41' 06.3"	29° 32' 41.2"
Stone Structure 03	Image 21	27° 41' 06.0"	29° 32' 41.5"
Stone Structure 04	Image 22	27° 41' 06.2"	29° 32' 41.9"
Stone Structure 05	Image 23	27° 41' 05.9"	29° 32' 42.5"
Stone Structure 06	Image 23	27° 41' 06.3"	29° 32' 42.9"
Stone Structure 07	Image 24- 25	27° 41' 07.2"	29° 32' 44.1"

TABLE 2: GPS co-ordinates of inspected stone structures to east of development area.



Map 1: Close up of surveyed area, Mooipan 625, with location of animal Burrows, Pits and Stone Structure.

GPS co-ordinates were taken with a Garmin e-trex Summit GPS (3-8 m error margin). Photographic documentation was done with a Sony Cybershot W17 camera.

5) EXCLUDED FROM SITE INSPECTION

As the location for the 2,84 km long Outfall Sewer Line was not supplied during the initial survey and only recently brought to our attention, no survey of the proposed area was therefore done. Should the pipeline run southwest from Memel, as it is suspected, it will run across the northeast section of Mooipan 625, north of the R34, and continue on through the Memel rezoning area.

Although the Mooipan 625 northeast area was not surveyed, it is unlikely that there would be any cultural material. A large part of the northeast section of Mooipan 625 was used for agricultural purposes, and there are also existing power/telephone lines running parallel to the R34, approximately 100m from the road. Therefore it can be suggested that even if there was cultural material, it is most likely disturbed (Aerial Photograph 1).

The rezoning of Memel should have included an Archaeological Impact Assessment; therefore one can assume that any cultural material would have been identified during that assessment process.



Aerial Photograph 1: Proposed development area, showing the agricultural activity in the northeast section of Mooipan 625.

6) IMAGE GALLERY

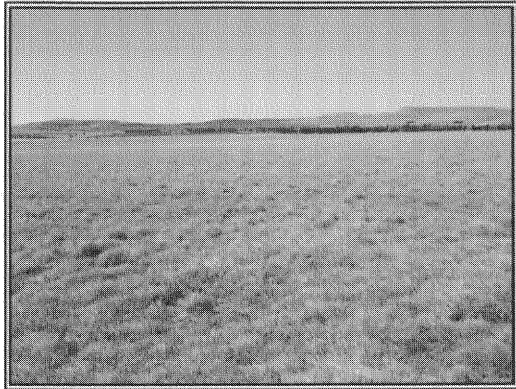


Image 1: North view of surveyed area

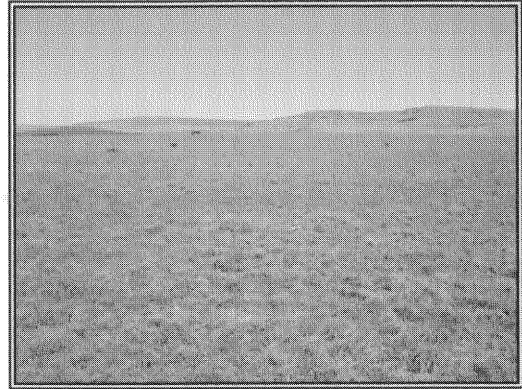


Image 2: South view of surveyed area



Image 3: Animal Burrow 01

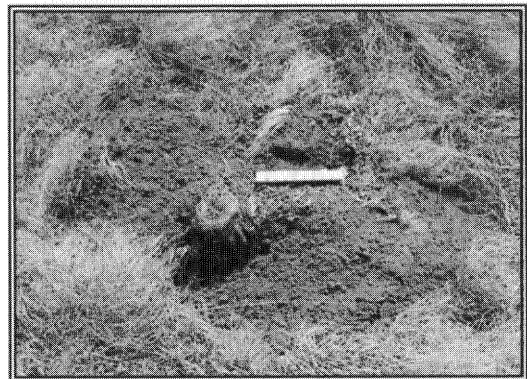


Image 4: Animal Burrow 02



Image 5: Pit 03



Image 6: Animal Burrow 04

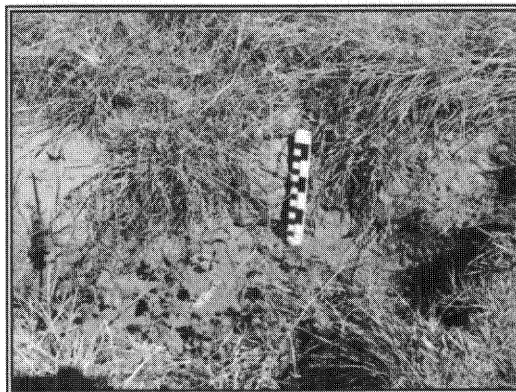


Image 7: Animal Burrow 05

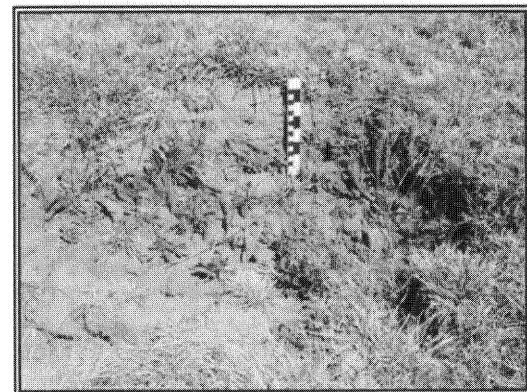


Image 8: Pit 06

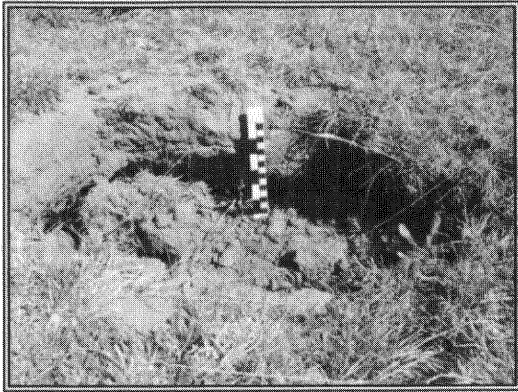


Image 9: Animal Burrow 07

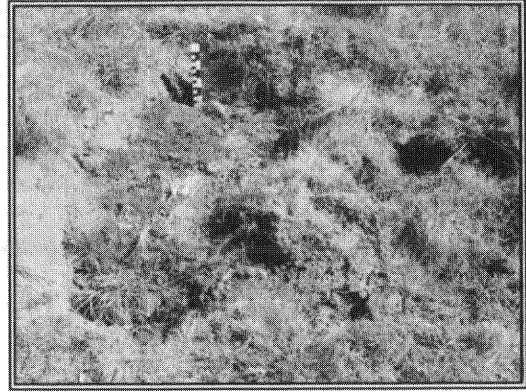
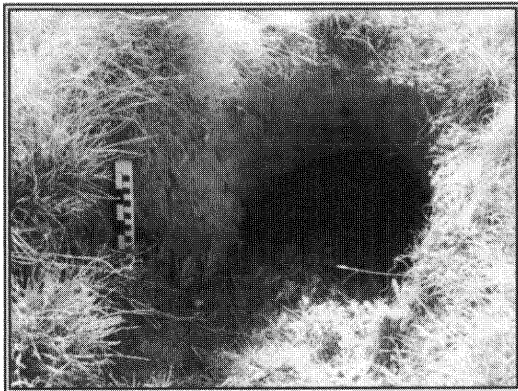


Image 10: Animal Burrow 08



Animal Burrow 09

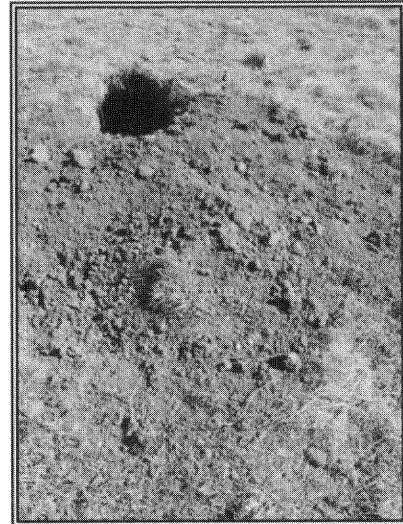


Image 11:

Image 12: Animal Burrow 10

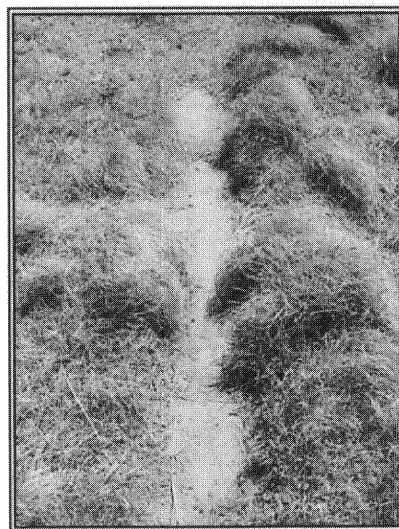


Image 13 + 14: Footpath

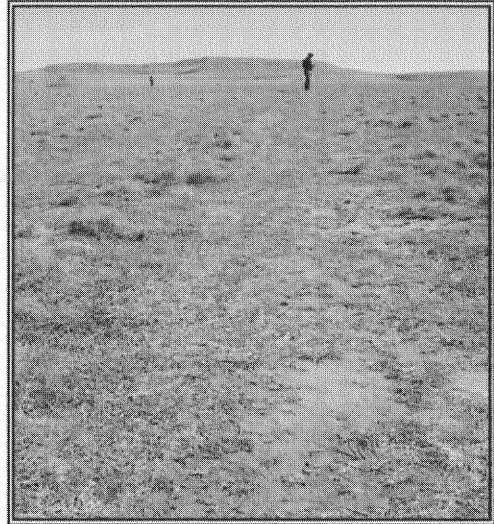


Image 15 + 16: Access Road

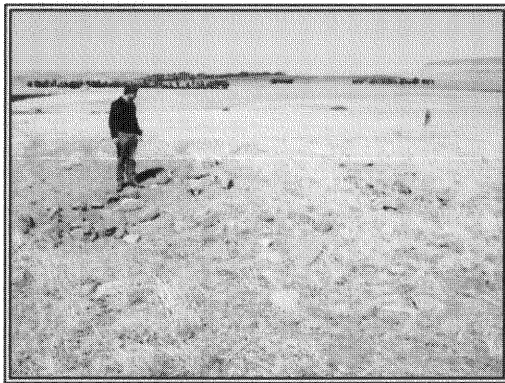


Image 17: Stone Structure 1 (East)

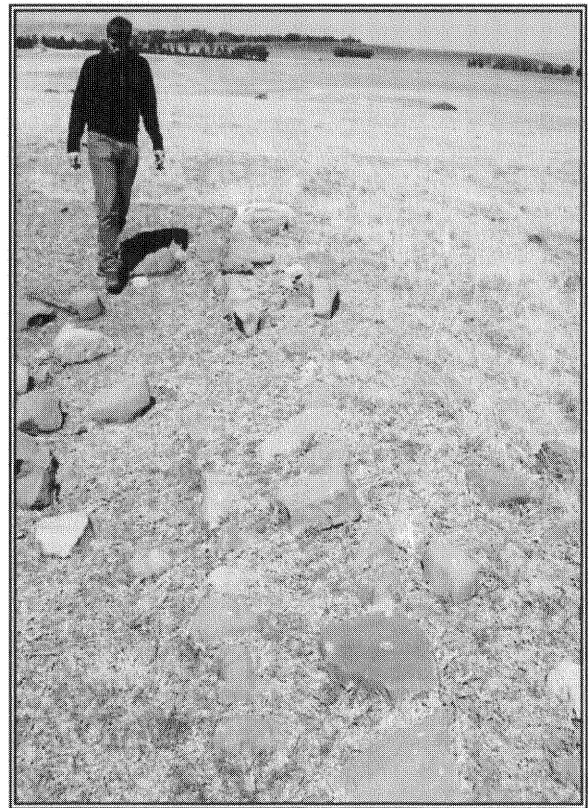


Image 19: Southern Wall, Stone Structure 1

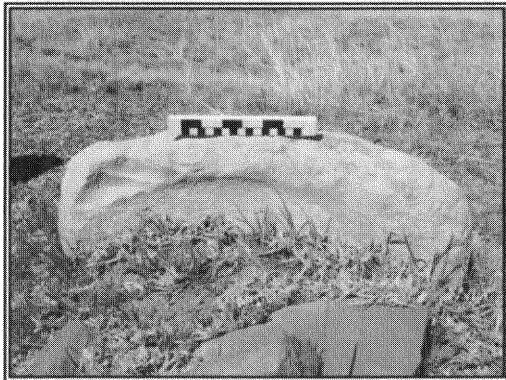


Image 18: Lower Grinding Stone, East end of Southern Wall



Image 20: Stone Structure 2

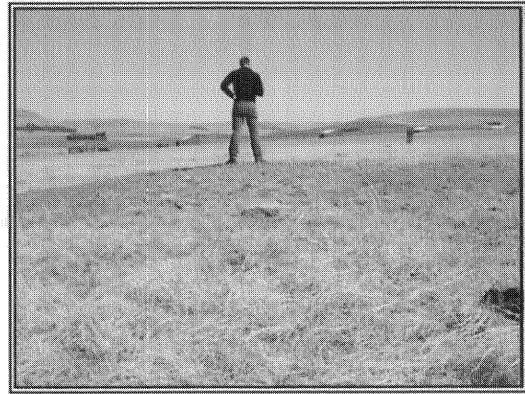


Image 21: Stone Structure 3

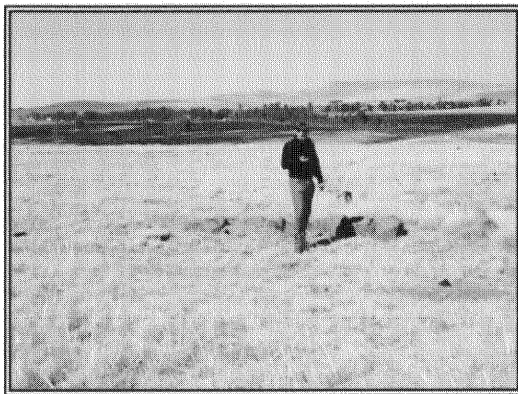


Image 22: Stone Structure 4



Image 23: Stone Structure 5 and 6

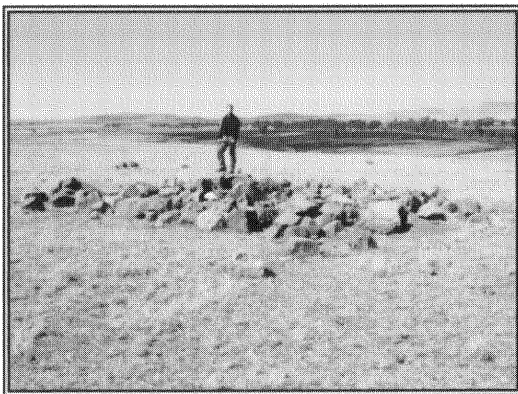
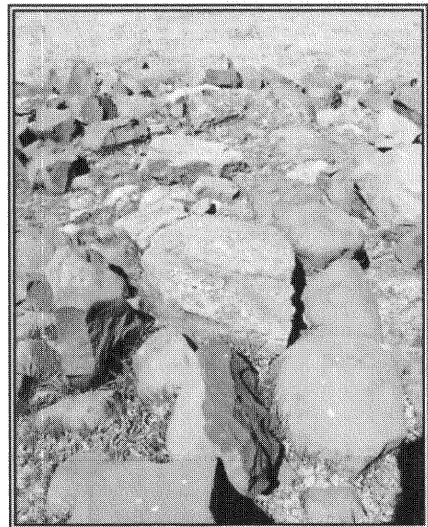


Image 24: Stone Structure 7

Image 25: Stone Structure 7, Eastern wall



7) CONCLUSION

Evidence from the surface survey, animal burrows, pits, footpaths and access road indicates a culturally sterile area. No built structures older than 60 years, sites of cultural significance associated with burial grounds and graves, graves of victims of conflict, cultural landscapes or viewsapes or palaeontological or archaeological deposits as defined and protected by the NHRA (1999) were identified during the assessment of the proposed development area.

The stone structures outside of the proposed development area have been recorded, and no further mitigation is deemed necessary. Should any further development take place in the vicinity of the structures, further investigation of these structures would need to take place.

8) RECOMMENDATIONS

I would recommend that the proposed development of sewage treatment works on Mooipan 625 proceed as applied for.

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

9) ACKNOWLEDGEMENTS

I would like to thank Lorato Tlhomelang and Christiaan Vermaak from Bokamoso Consultants for accompanying us to the site and for supplying development and on site information.

THE NATIONAL MUSEUM BLOEMFONTEIN, ARCHAEOLOGY CONTRACTS OFFICE IS AN ASAPA ACCREDITED CRM OFFICE		
Name	ASAPA CRM accreditation	Expertise
Dr. Zoe Henderson	Principle Investigator	Stone Age, Iron Age, Historical Period
Karen van Ryneveld	Field Director	Stone Age, Iron Age, Historical Period

Extracts from the
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.
- xxx. "*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 trances;
- 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