
PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT FOR A
**1.1HA MINING DEVELOPMENT TO BE LOCATED ON A PORTION OF ERF 1,
DOUGLAS, NORTHERN CAPE, SOUTH AFRICA**

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1) TERMS OF REFERENCE

The private developer, Jan Minnie, has applied for a mining permit to the Department of Minerals and Energy (DME) on an approximate 1.1ha municipal owned portion of Erf 1, Douglas, Northern Cape, South Africa (DME Ref – NC30/5/1/3/3/21329MP).

1.1) DEVELOPMENT LOCATION AND IMPACT

The proposed 1.1ha mining area is located on a portion of Erf 1, Douglas, Northern Cape, South Africa (1:50,000 map reference – 2923BB).

The proposed mining site is cited approximately 1.3km north-north-west (NNW) from the centre of Douglas in the Breipaal residential area and immediately adjacent to the R385 Douglas / Campbell road.

Mechanized mining development impact on the affected area will be total; resulting in the loss of all surface and sub-surface heritage sites / features that may be present within the proposed development area.



Figure 1: Douglas, Northern Cape, South Africa



Figure 2: Locality of the proposed 1.1ha mining development area in relation to Douglas

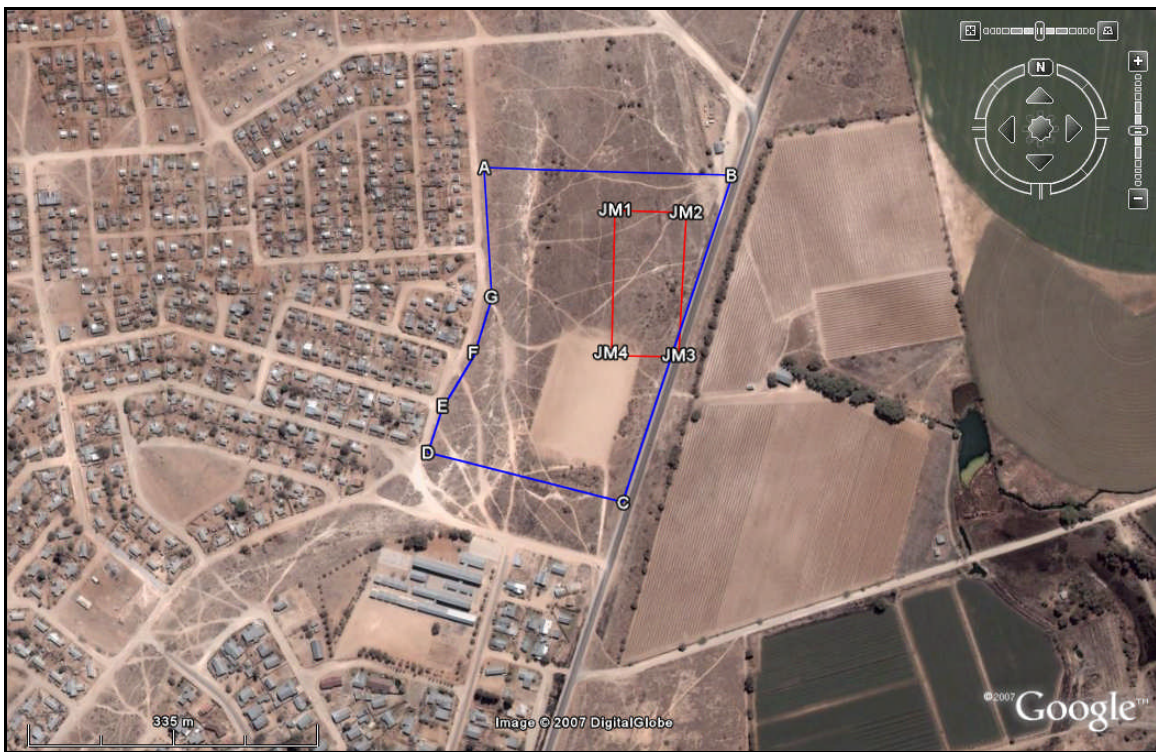


Figure 3: The proposed mining development area (red outline) and the AIA assessed area (blue outline)

MAP CODE	SITE	TYPE	DESCRIPTION	CO-ORDINATES	RECOMMENDATIONS
PROPOSED 1.1HA MINING DEVELOPMENT AREA, PORTION OF ERF, 1 DOUGLAS, NORTHERN CAPE					
JM1	-	-	-	S-29.03918°; E23.76925°	-
JM2	-	-	-	S-29.03919°; E23.77008°	-
JM3	-	-	-	S-29.04066°; E23.77000°	-
JM4	-	-	-	S-29.04065°; E23.76919°	-
ARCHAEOLOGICALLY ASSESSED AREA					
A	-	-	-	S-29.03873°; E23.76771°	-
B	-	-	-	S-29.03882°; E23.77062°	-
C	-	-	-	S-29.04219°; E23.76934°	-
D	-	-	-	S-29.04167°; E23.76702°	-
E	-	-	-	S-29.04119°; E23.76720°	-
F	-	-	-	S-29.04064°; E23.76756°	-
G	-	-	-	S-29.04006°; E23.76779°	-

*No cultural heritage resources as defined and protected by the NHRA 1999 were located within the approximate 8ha AIA assessed area incorporating the proposed 1.1ha mining development area

Table 1: The proposed 1.1ha Mining development and associated AIA assessed area, portion of Erf 1, Douglas

2) THE PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT

2.1) ARCHAEOLOGICAL LEGISLATIVE COMPLIANCE

The Phase 1 Archaeological Impact Assessment (AIA) was requested by the South African Heritage Resources Agency (SAHRA) mandatory responsible for the National Heritage Resources Act, Act No 25 of 1999 (NHRA 1999).

The Phase 1 AIA's was requested as specialist sub-section to the Environmental Impact Assessment (EIA) in compliance with requirements of the Mineral and Petroleum Resources Development Act, No 28 of 2002 (MPRDA 2002), the National Environmental Management Act, No 107 of 1998 (NEMA 1998) and associated regulations (2006), and the NHRA 1999 and associated regulations (2000).

The Phase 1 AIA aimed to locate, identify and assess the significance of cultural heritage resources, inclusive of archaeological deposits / sites, 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 defined and protected by the NHRA 1999, that may be affected by the proposed development. Palaeontological deposits / sites as defined and protected by the NHRA 1999 are not included as subject to this report.

2.2) COVERAGE AND GAP ANALYSIS

The Phase 1 AIA covered an approximate 8ha area incorporating the proposed 1.1ha mining development area.

Access to the development area is via the existing R385 Douglas / Campbell road.

2.3) METHODOLOGY

The Phase 1 AIA was conducted on 2007-12-05 by one archaeologist. The assessment was done by foot and limited to a Phase 1 surface survey; no excavation or sub-surface testing was done. Visibility across the assessed area was very good. Sub-surface interpretations were based on limited disturbance along the western dry streambed and a small quarry area located within the eastern portion of the proposed mining and AIA assessed area.

GPS co-ordinates were taken with a Garmin e-Trex Vista GPS (Datum: WGS84). Photographic documentation was done with a Casio X-S2 Exilim camera. A combination of Garmap and Google Earth software was used in the display of spatial information

Archaeological and cultural heritage site significance assessment and associated mitigation recommendations were done according to the system prescribed by SAHRA (2007).

SITE SIGNIFICANCE	FIELD RATING	GRADE	RECOMMENDED MITIGATION
High Significance	National Significance	Grade 1	Site conservation / Site development
High Significance	Provincial Significance	Grade 2	Site conservation / Site development
High Significance	Local Significance	Grade 3A / 3B	Site conservation or extensive mitigation prior to development / destruction
High / Medium Significance	Generally Protected A	-	Site conservation or mitigation prior to development / destruction
Medium Significance	Generally Protected B	-	Site conservation or mitigation / test excavation / systematic sampling / monitoring prior to or during development / destruction
Low Significance	Generally Protected C	-	On-site sampling, monitoring or no archaeological mitigation required prior to or during development / destruction

Table 2: Cultural Heritage Site Significance Assessment and Mitigation Recommendations

2.4) PHASE 1 AIA ASSESSMENT FINDINGS



Figure 4: General view towards the south of the AIA assessed area



Figure 5: The football field characterizing the south-eastern portion of the AIA assessed area



Figure 6: The dry streambed dominating the western portion of the AIA assessed area



Figure 7: The streambed, characterized by shallow calcrete exposures



Figure 8: Low quantity Stone Age flakes were identified in streambed deposits



Figure 9: General view of the north-western portion of the AIA assessed area



Figure 10: Old road quarry disturbance located in the eastern portion of the AIA assessed area and situated within the eastern portion of the proposed mining development area



Figure 11: General view of a relatively recent and smaller football field, located within the proposed mining development area.

The approximate 8ha AIA assessed area was characterized by a relatively large football field located in the south-eastern portion of the assessed area and a smaller, more recent football field located slightly north of the former and crossing over into the proposed mining development area. Surface inspection of both fields yielded no archaeological or cultural heritage resources as defined and protected by the NHRA 1999.

The remainder of the eastern $\frac{3}{4}$ of the AIA assessed area comprised primarily of virgin land, aside from a small quarry used in the past to quarry building material for the R385. No archaeological or cultural heritage resources as defined and protected by the NHRA 1999 were located in the area. Quarry sections were largely collapsed and overgrown; no cultural stratigraphic layer was identified.

The western narrow strip of the AIA assessed area was typified by a dry streambed presently littered with modern day rubble from the nearby neighborhood. The general area was distinguished by shallow calcrete exposures. A low quantity of Stone Age flakes were identified, eroding out of the calcrete. No definitive Stone Age layer were however present. Artefact ratios (artefacts: m²) can be approximated at 1:15-20. The low quantity of artefacts displayed typological types including flakes and flake-like blades. Artefacts were too few to ascribe a particular period (i.e. Earlier, Middle or Later Stone Age) to the occurrence; a later Middle Stone Age (MSA) /macrolithic Later Stone Age (LSA) assignation may be most relevant. Poor technology and the extremely low quantity of artefacts do not warrant formal conservation or mitigation of the low density Stone Age occurrence. The occurrence is not of National or Provincial Significance and is on a Local level assigned a *Low Significance* and a *Generally Protected C* field rating. Development is not expected to impact directly on the occurrence. However, should the need for impact arise (DME requirements for site access as an alternative to the R385) it is recommended that development in the area proceed without the developer having to comply with further cultural heritage mitigatory requirements.

2.4.1) CONCLUSION

Assessment of the approximate 8ha AIA assessed area incorporating the proposed 1.1ha mining development area yielded no cultural heritage resources inclusive of archaeological deposits / sites, 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 defined and protected by the NHRA 1999.

A low density Stone Age occurrence was identified in the western portion of the AIA assessed area. The occurrence may be impacted on by the development. The occurrence is, on a Local Level, assigned a *Low Significance* and a *Generally Protected C* field rating. It is recommended that should development necessitate impact on the occurrence, deposits be destroyed without the developer having to comply with further cultural heritage mitigatory requirements.

3) RECOMMENDATIONS

The proposed 1.1ha mining development to be located on a portion of Erf 1, Douglas, Northern Cape, will not impact on any identified cultural heritage resources as defined and protected by the NHRA 1999.

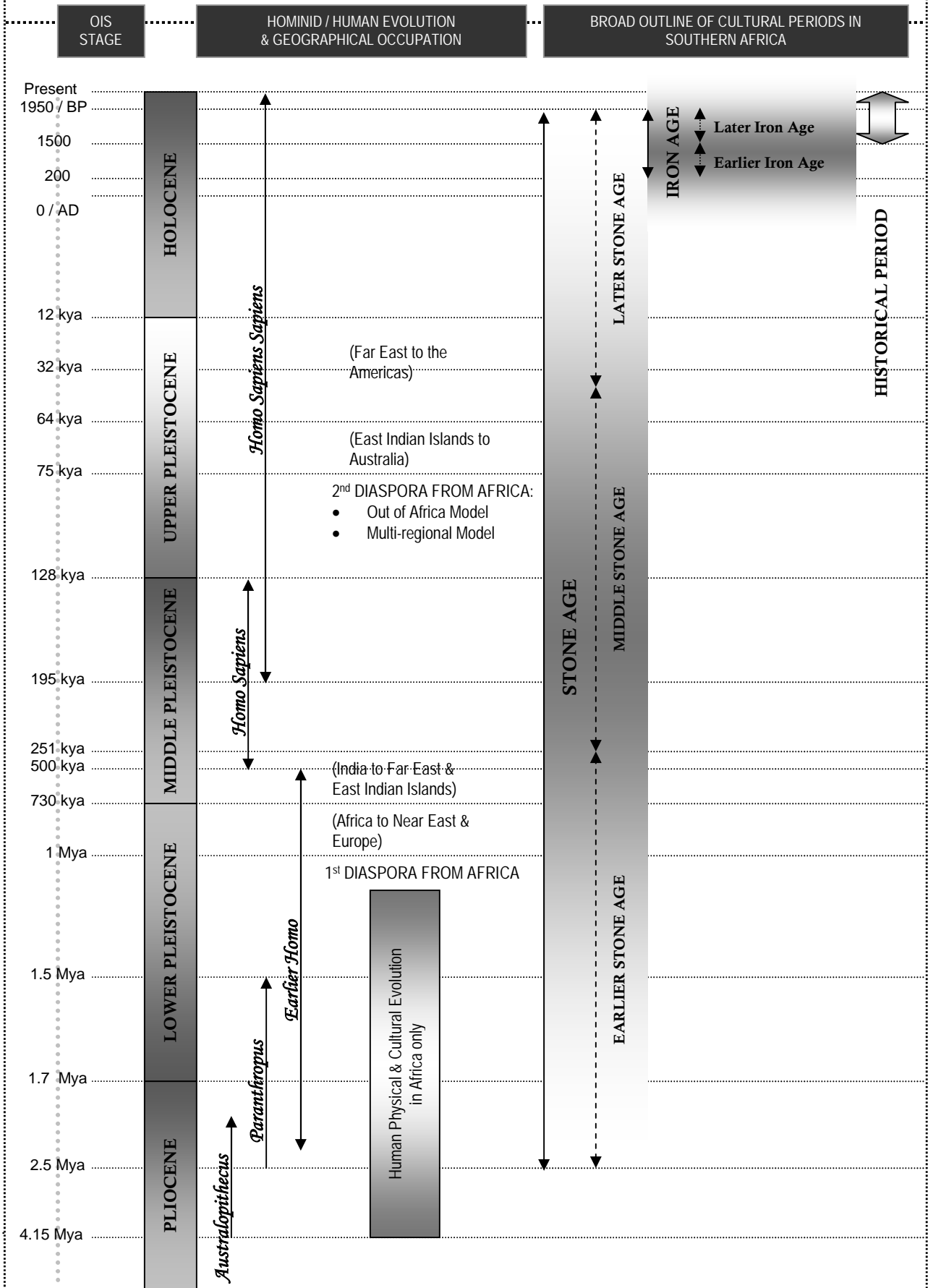
✿ **Recommendations:** It is recommended that, with reference to cultural heritage compliance as per the requirements of the NHRA 1999, the development proceeds as applied for.

[A low density Stone Age occurrence was identified in the western portion of the AIA assessed area. The occurrence may be impacted on by the development (DME requirements for site access as an alternative to the R385). The occurrence is, on a Local Level, assigned a *Low Significance* and a *Generally Protected C* field rating. It is recommended that should development necessitate impact on the occurrence, deposits be destroyed without the developer having to comply with further cultural heritage mitigatory requirements.]

4) REFERENCES CITED

1. South African Government. (No. 107) of 1998. *National Environmental Management Act*.
2. South African Government. (No. 25) of 1999. *National Heritage Resource Act*.
3. South African Heritage Resources Agency. 2007. *Minimum standards for the archaeological and heritage components of impact assessments*. Unpublished guidelines.

Schematic Outline of the Pre-historic and Historic Periods (Southern Africa)



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.
- 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 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-internment 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.