

**A LETTER OF RECOMMENDATION FOR THE EXEMPTION OF A FULL
PHASE 1 HERITAGE IMPACT ASSESSMENT (HIA) FOR THE ESTABLISHED
ZAMBEZI SAND DRYING PLANT ON PTN 77 OF THE FARM OORLOGSFONTEIN 45
KS, MOGALAKWENA MUNICIPALITY, LIMPOPO PROVINCE**

For: EnviroSA Solutions
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DECLARATION OF INDEPENDENCE

I, Frans Roodt, hereby confirm my independence as a specialist archaeologist and heritage practitioner and declare that I have no business, financial, personal or other interest in any proposed activity, application or appeal in respect of this proposed project other than fair remuneration for the work performed.

A handwritten signature in black ink, appearing to read 'Roodt', is positioned above a horizontal line.

FRANS ROODT (*BA Hons, MA Archaeology, Post Grad Dip in Museology; UP*)
Principal Investigator (ASAPA member 120)

1. INTRODUCTION (See Annexure **B** for relevant legislation)

The author was appointed by EnviroSA Solutions Consultants to undertake a heritage impact assessment (HIA) for the already established Zambezi Sand Drying Plant in terms of the NEMA section 24G application required by the Limpopo Department of Economic Development, Environment and Tourism.

The requirement for a HIA is based on the fact that the development is located within the Makapans Valley World Heritage Site Buffer Zone (see Figure 5).

2. LOCATION AND TERRAIN DESCRIPTION

The project area is located on Portion 77 of The Farm Oorlogsfontein 45 KS, in the Mogalakwena Municipality, Waterberg District, Limpopo Province. The proposed development is located north-east of Road R518, in an area of agricultural smallholdings at central coordinates -24.232327° 29.043162°, approximately 6km south-south-east of the Mokopane CBD. The size of the area is approximately 500 square meters and consists of a sand downloading area and a 200 square metre shed where the drying machine is housed with an underroof loading facility for the final product. No additional structures are to be erected.

The development project is situated 18km south-east of the Makapan Valley World Heritage site. It however falls within the Buffer zone of the World Heritage Site, but beyond the Maribashoek Mountain range and is not visible from the Makapans Valley site.

3. METHODOLOGY

The area was traversed on foot. The SAHRIS database was consulted and one previous heritage impact assessment and a Palaeontology assessment are referenced that covers the immediate area. None of these surveys had located any significant heritage resources in the area. Google Earth and the 1:50 000 map 2429 AA was studied to identify possible indicators of archaeological and heritage sites.

4. RESULTS OF THE SURVEY (See Annexure **C** for a summary of terminology)

4.1 Stone Age remains

No Stone Age material was noted.

4.2 Iron Age

No Iron Age cultural material was recorded on the terrain.

4.3 Intangible Heritage

No signs of ritual use or the presence of graves were noted in the project area.

4.4 The built environment

The project area is located in an agricultural smallholdings zone which covers the eastern half of the farm Oorlogsfontein and northwards into the farm Planknek. Most of this land had been ploughed in the past. No structure on any of the smallholdings are threatened by the project.

4.5 Palaeontology

Makapan Valley is a paleontological site of international significance and is also part of the World Heritage Site of the Cradle of Humankind. Situated in the Waterberg northeast of Mokopane in the Limpopo Province, the site plays an important role in our understanding of human evolution. The network of limestone caves has yielded thousands of fossil bones, including *Australoptheticus africanus* and other mammals. It also contains a remarkable unbroken sequence of archaeological remains from the Early Stone Age through to the recent Iron Age, and some of the earliest evidence of the controlled use of fire by our ancestors. The caves are also the site of the clash between the Boers and Kekana people in 1854 <https://www.sahra.org.za/makapan-valley/>.

The area falls within the blue colour code of the SAHRIS Palaeontological Sensitivity Map. A protocol for fossil finds by Chris Jones (B.Sc. Hons, FGSSA, FLS, Pr.Sci.Nat), is submitted as **Annexure A** in this report. The farm Oorlogfontein is not underlain by dolomite formations and thus no similar fossils to those at Makapan would be present here.

5. CONCLUSION

No heritage sites or cultural material was detected on the terrain of the established Zambezi Sand Drying Plant. The plant will also not impact on the Makapans Valley World Heritage Site. This document serves as a statement to that effect. From a heritage perspective we have no objection with regard to the 24G rectification of the Established Zambezi Sand Drying Plant.

6. RECOMMENDATIONS AND MANAGEMENT MEASURES

It is recommended that the project is exempted from a full Heritage Impact Assessment as it is highly unlikely that the development will negatively impact on any heritage resources.

Mitigation measures will, however, be required should any chance discoveries of subterranean archaeological/palaeontological material be made during construction. In such an event work must be ceased immediately in that particular area, and the heritage authority or the archaeologist be informed.

7. REFERENCES

Millstead, BD. 2016. Desktop Palaeontological Impact Assessment Report – On the site of a proposed bulk water supply pipelines from Pruissen to Piet-se-kop Reservoir, near Mokopane, Limpopo Province. Unpublished report for Heritage Contract and Archaeological Consulting CC.

Van der Walt, J. 2016. Archaeological Impact Assessment for the Proposed Bulk Water Supply Pipelines from Pruissen to Piet-Se-Kop Reservoir, as Part of the Mogalakwena Water Master Plan, Mogalakwena Municipality Area, Limpopo Province. Unpublished report for Tekplan Environmental.



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Figure 1. General view of the established sand drying project.



Figure 2. View of the loading bay in the sand drying plant.



Figure 3. Google Earth image of the project area in relation to Mokopane Town.



Figure 4. Google Earth image showing the established sand drying plant.

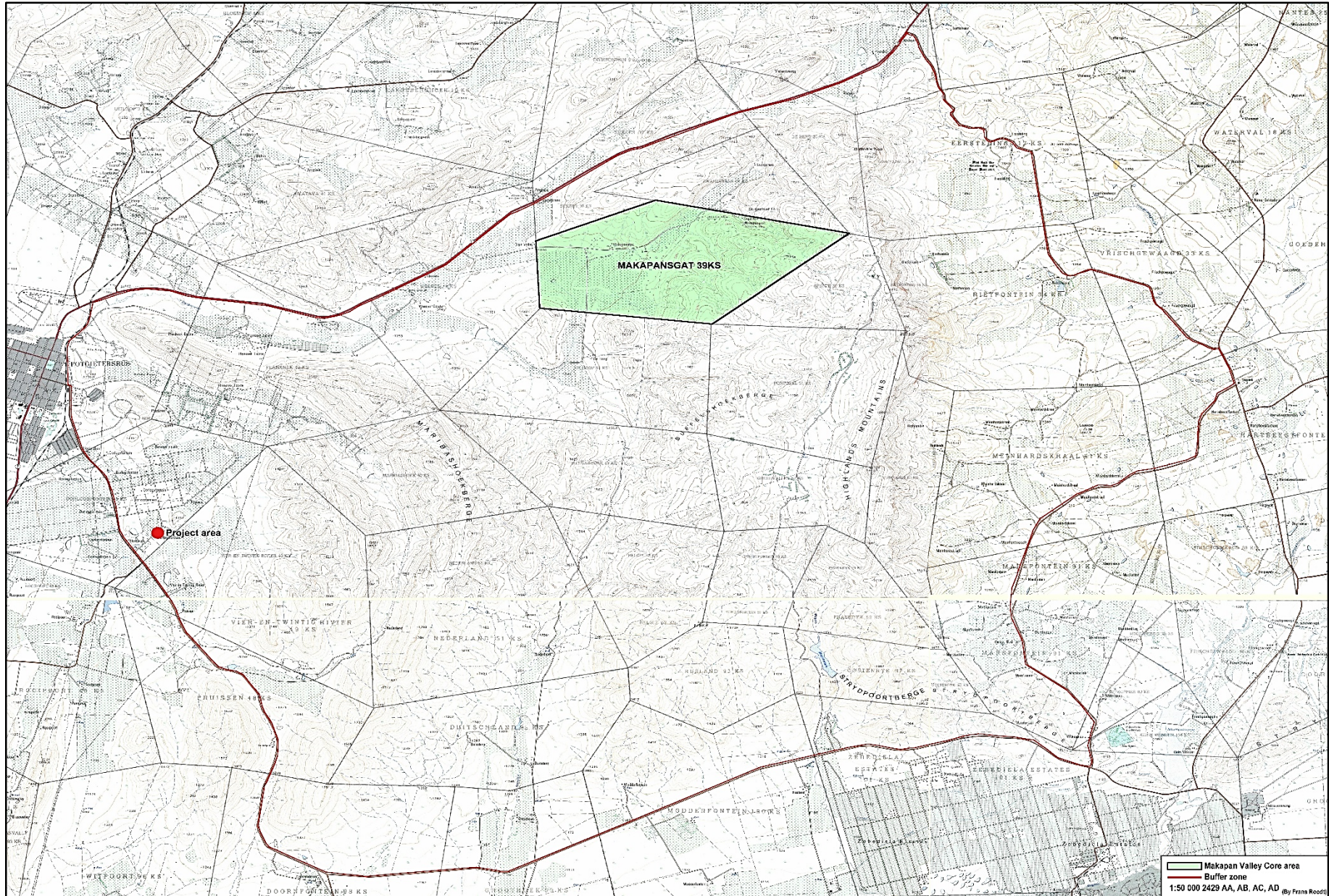


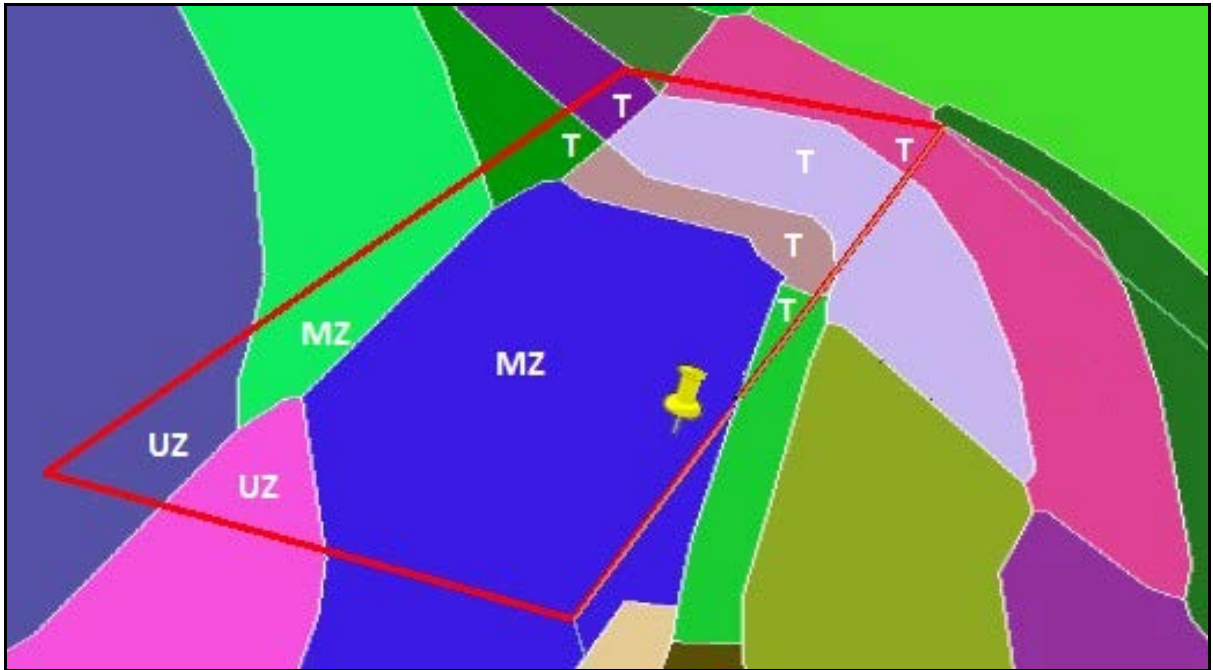
Figure 5. The Makapans Valley World Heritage Buffer Zone

ANNEXURE A

CHANCE FOSSIL FINDS PROTOCOL FOR THE ESTABLISHED ZAMBEZI SAND DRYING PLANT ON PTN 77 OF THE FARM OORLOGSFONTEIN 45 KS

Province & region:	Mogalakwena Municipality, Waterberg District, Limpopo Province	
Responsible Heritage Management Authority	SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Phone: +27 (0)21 462 4502. Fax: +27 (0)21 462 4509. Web : www.sahra.org.za	
Rock unit(s)	The bulk of the farm Oorlogsfontein is underlain by the ultrabasic and basic gabbro norite and felspathic pyroxinite plutonic rocks of the Middle and Upper Zones of the Bushveld Igneous Complex. The extreme north-eastern part of the farm is underlain by the metamorphosed siltstones and dolomites of the Transvaal Supergroup.	
Potential fossils	<ul style="list-style-type: none"> • The gabbro norites and pyroxenites of the Bushveld Complex are igneous and therefore unfossiliferous. • The meta-sedimentary units of the Transvaal Supergroup consist largely of unfossiliferous clastic deposits, with minor dolomitic limestones with potential stromatolite formations. • There is a possibility of fossiliferous material in isolated Quaternary deposits. 	
Environmental officer	1. Once alerted to fossil occurrence(s): alert site foreman, stop work in area immediately, safeguard site with security tape / fence / sand bags for support if necessary.	
	2. Record key data while fossil remains are still in situ: <ul style="list-style-type: none"> • Accurate geographic location – describe and mark on site map / 1: 50 000 map / satellite image / aerial photo / GPS • Context – describe position of fossils within stratigraphy (rock layering) and depth below surface • Photograph fossil(s) in situ with scale, from different angles, including images showing context (e.g. rock layering) 	
	3. If feasible to leave fossils in situ: <ul style="list-style-type: none"> • Alert Heritage Management Authority and project palaeontologist who will advise on any necessary mitigation • Ensure fossil site remains safeguarded until clearance is given by the Heritage Management Authority for work to resume 	3. If not feasible to leave fossils in situ (emergency procedure only): <ul style="list-style-type: none"> • Carefully remove fossils, as far as possible still enclosed within the original sedimentary matrix (e.g. entire block of fossiliferous rock) • Photograph fossils against a plain, level background, with scale • Carefully wrap fossils in several layers of newspaper / tissue paper / plastic bags • Safeguard fossils together with locality and collection data (including collector and date) in a box in a safe place for examination by a palaeontologist • Alert Heritage Management Authority and project palaeontologist who will advise on any necessary mitigation
	4. If required by Heritage Management Authority, ensure that a suitably-qualified specialist palaeontologist is appointed as soon as possible by the developer.	
	5. Implement any further mitigation measures proposed by the palaeontologist and Heritage Management Authority	
Specialist palaeontologist	Record, describe and judiciously sample fossil remains together with relevant contextual data (stratigraphy / sedimentology / taphonomy). Ensure that fossils are curated in an approved repository (e.g. museum / university / Council for Geoscience collection) together with full collection data. Submit Palaeontological Mitigation report to Heritage Resources Authority. Adhere to best international practice for palaeontological fieldwork and Heritage Management Authority minimum standards.	

Compiled by: Chris Jones. B.Sc Hons, FGSSA, FLS, Pr.Sci.Nat



The yellow icon marks the project site:

- T:** Transvaal Supergroup
- MZ:** Middle Zone, Bushveld Complex
- UZ:** Upper Zone, Bushveld Complex

ANNEXURE B: RELEVANT LEGISLATION

Two sets of legislation are relevant for the protection of heritage resources and graves.

The National Heritage Resources Act (25 of 1999) (NHRA)

This Act established the South African Heritage Resources Agency (SAHRA) and makes provision for the establishment of Provincial Heritage Resources Authorities (PHRA). The Act makes provision for the undertaking of heritage resources impact assessments for various categories of development as determined by Section 38. It also provides for the grading of heritage resources (Section 7) and the implementation of a three-tier level of responsibilities and functions for heritage resources to be undertaken by the State, Provincial authorities and Local authorities, depending on the grade of the Heritage resources (Section 8).

In terms of the National Heritage Resources Act (1999) the following is of relevance:

Historical remains

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.

Archaeological remains

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 or museum, which must immediately notify such heritage resources authority.

Subsection 35(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 assist with the detection or recovery of metals or archaeological material or objects, or use such equipment for the recovery of meteorites.

Subsection 35(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 procedures 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.

Subsection 35(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

Subsection 36(3)

- (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority-
- (c) 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
- (d) 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 detection or recovery of metals.

Subsection 36(6) Subject to the provision of any 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 content of such grave or, in the absence of such person or community, make any such arrangement as it deems fit.

Culture Resource Management

Subsection 38(1) Subject to the provisions of subsection (7), (8) and (9), any person who intends to undertake a development* ...

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

***'development'** means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the 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 a structure at a place;
- (b) carry out any works on or over or under a place*;
- (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;

****'place'** means a site, area or region, a building or other structure* ..."

****'structure'** means any building, works, device or other facility made by people and which is fixed to the ground ..."

The Human Tissues Act (65 of 1983)

This Act protects graves younger than 60 years. These fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities.

ANNEXURE C: TERMINOLOGY

Early Stone Age:	The Oldowan “chopper” tools dating to between 1.7 and 2.3 million in southern Africa and the Acheulean hand axe industry complex dating to \pm 1.4 Myr – 250 000 yrs. before present.
Middle Stone Age:	Various lithic industries in SA dating from \pm 250 000 yrs. - 22 000 yrs. before present.
Late Stone Age:	The period from \pm 22 000 yrs. to the contact period with either Iron Age farmers or European colonists.
Early Iron Age:	Most of the first millennium AD.
Middle Iron Age:	10 th to 13 th centuries AD.
Late Iron Age:	14 th century to colonial period. <i>The entire Iron Age represents the spread of Bantu speaking peoples.</i>
Historical:	Mainly cultural remains of western influence and settlement from AD 1652 onwards – mostly structures older than 60 years in terms of Section 34 of the NHRA.
Phase 1 assessment:	Scoping surveys to establish the presence of and to evaluate heritage resources in a given area.
Phase 2 assessment:	In depth culture resources management studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling.
Sensitive:	Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious places. <i>Sensitive</i> may also refer to an entire landscape / area known for its significant heritage remains.