

**McGregor Museum
Department of Archaeology**



**Heritage Impact Assessment of proposed
prospecting drilling sites at two pans on
Gemsbok Horn 242 in the Dawid Kruiper
Local Municipality, Northern Cape.**

**David Morris assisted by Abenicia Henderson
November 2019**

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1. INTRODUCTION

The McGregor Museum archaeology department was appointed to carry out a Phase 1 Heritage Impact Assessment with focus on archaeology at not more than five sites of proposed drilling to prospect for salt-containing brine within two isolated pans (known as Bettastadt and Tsonga Pans) some 130 km north west of Upington. Site Plan Consulting (appointed by Transalt (Pty) Ltd) appointed the McGregor Museum Archaeology Department for this task (Contact: Mr Craig Donald, Site Plan Consulting, tel 021-8544260, 0845111520, craig@siteplan.co.za; Shop 5 Goedehoop Shopping Centre, Broadway Boulevard, Strand 7140).

A site visit was carried out by the authors on 29 July 2019, when proposed prospecting sites were visited on the two plans (in the event, we were informed, the principal focus would be the southern pan). The prospecting drilling was expected to be highly localised in spatial extent at points on the floor of the pan, involving no road construction, and with auger drilling to a depth estimated about 10m.

Limited heritage features were observed. Relevant observations are indicated in this report.

Fieldnotes and photographs are lodged with the McGregor Museum, Kimberley.

1.1. Focus and Content of Specialist Report: Heritage

This archaeology and heritage specialist study is focused on the site of the proposed development.

This study outlines:

- Introduction, explaining the focus of the report (1.1) and introducing the authors in terms of qualifications, accreditation and experience to undertake the study (1.2)
- Description of the affected environment (2) providing background to the development and its infrastructural components (2.1); background to the heritage features of the area (2.2); and defining environmental issues and potential impacts (2.3)
- Methodology (3) including an assessment of limitations (3.1).
- Observations and assessment of impacts (4); Specific observations (4.1); characterizing archaeological significance (4.2); and Summary of significance of impacts (4.3).

- Measures for inclusion in a draft Environmental Management Plan for the development are set out in tabular form (5).
- Conclusions (6).

1.2. Authors of this Report

The authors (on staff of the McGregor Museum) are independent of the organization commissioning this specialist input, and provide this heritage assessment (archaeology and colonial history but not palaeontology) within the framework principally of the National Environmental Management Act (NEMA) 1998 (Act 107 of 1998) and the National Heritage Resources Act (No 25 of 1999).

The senior author is a professional archaeologist (PhD) accredited as a Principal Investigator by the Association of Southern African Professional Archaeologists. He has worked as a museum archaeologist and has carried out specialist research and surveys in the Northern Cape and western Free State since 1985. In addition, he has a comprehensive knowledge of Northern Cape history and built environment, having also received UCT-accredited workshop training in Architectural and Urban Conservation: researching and assessing local (built) environments (S. Townsend, UCT). He is also Chairman of the Historical Society of Kimberley and the Northern Cape.

Fieldwork assistance was given by Ms Abenicia Henderson who has an Honours Degree in historical archaeology from UNISA.

As per section 38(8) of the National Heritage Resources Act no. 25 of 1999 (NHRA) and section 24(4)d(iii) of the NEMA EIA Regulations, an assessment of heritage is required as part of the NEMA EA application. The assessment must comply with section 38(3) of the NHRA. SAHRA would comment and make recommendations on potential impacts in light of the assessment report.

The NHRA protects heritage resources which include archaeological and palaeontological objects/sites older than 100 years, graves older than 60 years, structures older than 60 years, as well as intangible values attached to places. The Act requires that anyone intending to disturb, destroy or damage such sites/places, objects and/or structures can only do so in terms of a permit from the relevant heritage resources authority.

(Where archaeological sites and palaeontological remains are concerned, the South African Heritage Resources Agency (SAHRA) at national level acts on an agency basis for the Provincial Heritage Resources Agency (PHRA) in the Northern Cape. The Northern Cape Heritage Resources Authority (formerly called Ngwao Bošwa ya Kapa Bokone) is responsible for the built environment and other colonial era heritage and contemporary cultural values).

2. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The two pans, known as the Bettastadt (northern) and Tsonga (southern) Pans, which are the focus of this study, are situated in the southern Kalahari about 130 km

north west of Upington. The edges of the pans are defined in part by NW-SE trending wind-blown sand dunes of the Pleistocene to Recent Gordonia Formation. At the north-eastern end of the Tsonga Pan there are impressive eroded exposures and cliffs of Dwyka Group shales belonging to the Permo-Carboniferous Karoo Supergroup, sedimentary infill of the Kalahari-Aranos Basin (which occurs through Botswana to south-eastern Namibia, and is separate from the main South African Karoo Basin). This Karoo bedrock evidently underlies a shallow pan surface of soft sediment and salt crust.

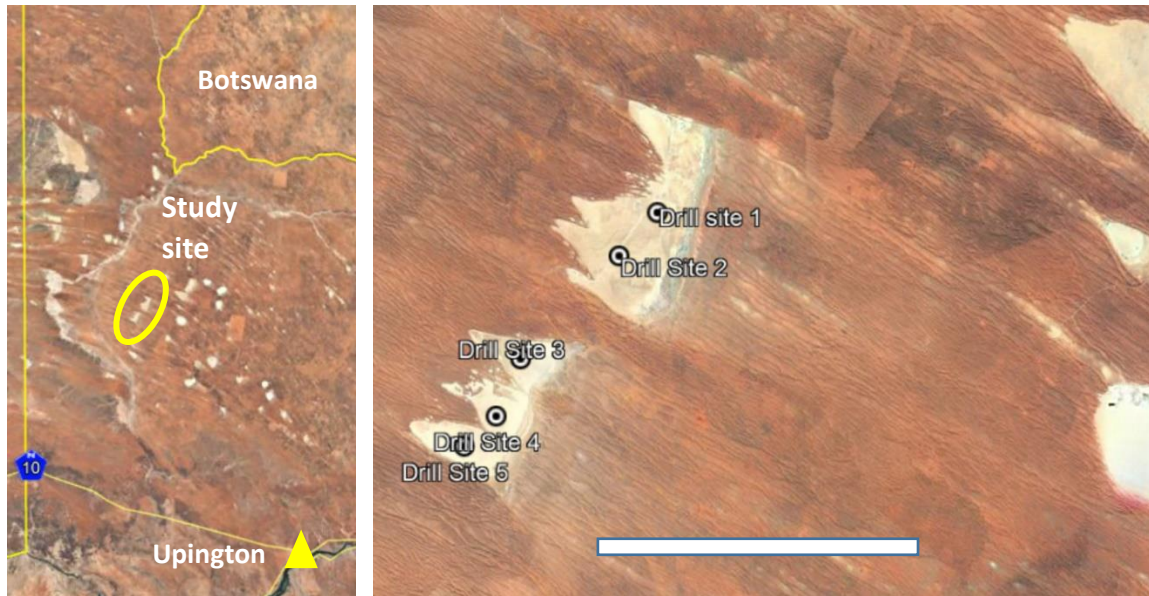


Figure 1. Site location north west of Upington, showing the two pans and anticipated drilling locales. Scale bar: 10 km.



Figure 2. View across the Tsonga Pan, the edges defined by dunes.

2.1. Project components

The developer proposed prospecting by way of drilling five holes on the two pans to search for salt containing brine, to be pumped to an independent pan for salt production. It was proposed to use auger drilling to an average depth of 10 m, with backfilling after samples are taken. No roads were to be created as in each case the drilling machine could be driven directly to the sampling locale.

2.2 Background to the heritage features of the area

While much of the surrounding region has yet to be examined from an archaeological viewpoint, certain insights exist from a limited number of prior research and impact assessment observations in the wider area.

The archaeological record of this region reflects the long span of human history from Earlier Stone Age times (more than 1.5 to some 0.3 million years ago), through the Middle Stone Age (about 300 000 – 40 000 years ago), to the Later Stone Age (up to the protocolonial era). The last 2000 years was a period of increasing social complexity to the east, with the appearance there of herding and farming, and of ceramic and metallurgical (Iron Age) technologies alongside an older continuing trajectory of hunting and gathering and stone tool based technologies (Morris 2018; Morris & Beaumont 2004). In these drier western tracts it is probable that hunting and gathering persisted as a nearly exclusive pursuit into the colonial era, though with pastoralism being practised to some extent in neighbouring areas.

In the absence of suitable rock outcrops, no rock art sites are known, the nearest known examples being in the hills north of the Orange River at Biesje Poort and Riemvasmaak.

Earlier Stone Age sites have been documented to the south of here in areas strewn with Dwyka tillite, which provided ample raw material. John Masson (2006) has reported such material at Eenzaamheid Pan (Morris 2006). But a comparable setting at Goeboegoeboe Pan, which lacks, however, the Dwyka element, has comparatively very sparse Stone Age material. Dune crests and slopes, where deflation exposes older surfaces, are known frequently to bear traces of Later Stone Age sites, noted previously by the author at Norokei Pan, Groot Wit Pan, Middelputs on the Molopo (Morris 2006), and adjacent to the Molopo Lodge site at Wit Draai, for example, at 27°10.986' S 20°24.392' E. Sites have also been noted, again mainly on dunes, by A.B. Smith in the Rietfontein area as well as at Twee Rivieren and within the Kgalagadi Transfrontier Park (Smith 1985:296-299).

Engelbrecht (2013) found low density scatters of Earlier, Middle and Later Stone Age artefacts during an impact assessment for a housing development in Rietfontein, while Van Pletzen-Vos and Rust (2013a) have documented diffuse scatters of Later Stone Age tools and ostrich eggshell fragments near Rooipan and Witpan north east of the town. Large clusters of Middle Stone Age flakes and cores are recorded in the vicinities of Loubos and Noenieput (Van Pletzen-Vos and Rust 2013b, 2013c).

Generally isolated stone artefacts reflecting the entire span of the Stone Age were found during a survey of expected impact areas at Hakskeen Pan, north of the study area (Morris 2016).

A human burial recently retrieved from the Upington Museum, where it had been on display until the mid-1990s, was apparently exposed by wind erosion somewhere in this environment, near Rietfontein, to the north.

Historical events of significance in the area include the actions against Jakob Marenga in 1907 (who was killed at Eenzaamheid Pan to the south), but no tangible traces of this history have been found in the landscape (Masson 2006).

2.3 Environmental issues and potential impacts

Heritage resources including archaeological sites are in each instance unique and non-renewable resources. Any area or linear, primary and secondary, disturbance of surfaces in the development locales could have a destructive impact on heritage resources, where present. In the event that such resources are found, they are likely to be of a nature that potential impacts could be mitigated by documentation and/or salvage following approval and permitting by the South African Heritage Resources Agency and, in the case of any built environment features, by the Northern Cape Heritage Authority (previously called Ngwao Bošwa jwa Kapa Bokone). Although unlikely, there may be some that could require preservation in situ and hence modification of intended placement of development features.

The expected impact in this instance would be limited to no more than five relatively small drilling sites with no issues around creating access roads.

Destructive impacts that are possible in terms of heritage resources would tend to be direct, once-off events occurring during drilling/sampling. In the long term, the proximity of operations in a given area could result in secondary indirect impacts resulting from the movement of people or vehicles in the immediate or surrounding vicinity. Such longer-term secondary impacts would become relevant should sampling at this stage lead to subsequent exploitation of a given locale including pumping out of high concentration salt solution.

3. METHODOLOGY

The areas of proposed drilling/sampling were pointed out by Mr Eric Prusent who arranged access to the site, inspected on foot on 29 July 2019. An assessment was made at each site visited of the presence/absence of visible heritage traces and the possibility of subsurface features. In addition a nearby dune, while well clear of any potential impact by the drilling, was inspected.

3.1 Assumptions and Limitations

It was assumed that traces on the current surface of the pans would be indicative of subsurface archaeology. The developer mentioned that soft surface sediments were shallow, lending greater confidence for findings reported in this report.

During the site visit we were shown only three proposed drill sites with the implication being that not all five were to be used in the end. However, the observations made probably pertain for the wider pan surfaces and have relevance in the event that further drill sites eventuate.

This report does not address palaeontology.

4. OBSERVATIONS AND ARCHAEOLOGICAL IMPACT ASSESSMENT

Visiting the site on 29 July 2019, the intended drill sites were pointed out (as stated above we were shown in fact only three of the five sites originally indicated). Two archaeologists ranged over some hundreds of metres around each of the intended drill sites and made observations as detailed below.

4.1 Specific observations

Observations made during the assessment suggested the existence of extremely low density surface occurrences of stone artefacts, seemingly reflecting Middle Stone Age presence, across the bare southern Tsonga Pan surface, and similarly minimal traces amongst pebbles and chunks across a stone-strewn (presumably tillite-derived) surface on Bettastadt Pan. There was an indication of artefacts occurring in a palaeodune exposed beneath a currently active spur of wind-blown sand penetrating across the Tsonga Pan, and this may have been the source context for the rare artefacts on the surface of the pan.

Observations are tabulated in the following table and shown in the map at Figures 3-5.

	Latitude	Longitude	Description	Significance
1 (Figs 6&7)	27°29'30.04"	20°29'32.4"	Tsonga Pan: Drill site corresponding with drill site No 5 in the proposal. No archaeological traces were found in proximity to this drill site.	LOW
2 (Fig 8)	27°29'17.8"	20°30'28.8"	Tsonga Pan: Drill site No 2 pointed out by the developer. This does not correspond with any of the drill sites originally proposed.	LOW
3 (Fig 9)	27°29'16.0"	20°30'26.7"	Isolated stone artefact found in proximity to observation 2.	LOW
4 (Fig 10)	27°29'14.3"	20°30'24.4"	Isolated ?MSA stone artefacts found in proximity to observation 2.	LOW
5 (Fig 11)	27°28'35.4"	20°30'46.6"	Tsonga Pan: Drill site No 3 pointed out by the developer. This does not correspond with any of the drill sites	LOW

			originally proposed.	
6 (Fig 12)	27°28'36.4"	20°30'42.3"	Isolated ?MSA stone artefact found below a dune in proximity to observation 5.	LOW
7 (Figs 13&14)	27°28'36.5"	20°30'39.5"	Isolated ?MSA stone artefacts found in a palaeodune context exposed below an active dune spur penetrating across the pan from the north west, and in proximity to observation 5.	LOW
8 (Fig 15)	27°24'21.16"	20°33'35.98"	Bettatsadt Pan: possible drilling to take place in this vicinity. The pan surface is strewn with tillite-derived stones with minimal signs of flaking whether in the form of cores or flakes.	LOW

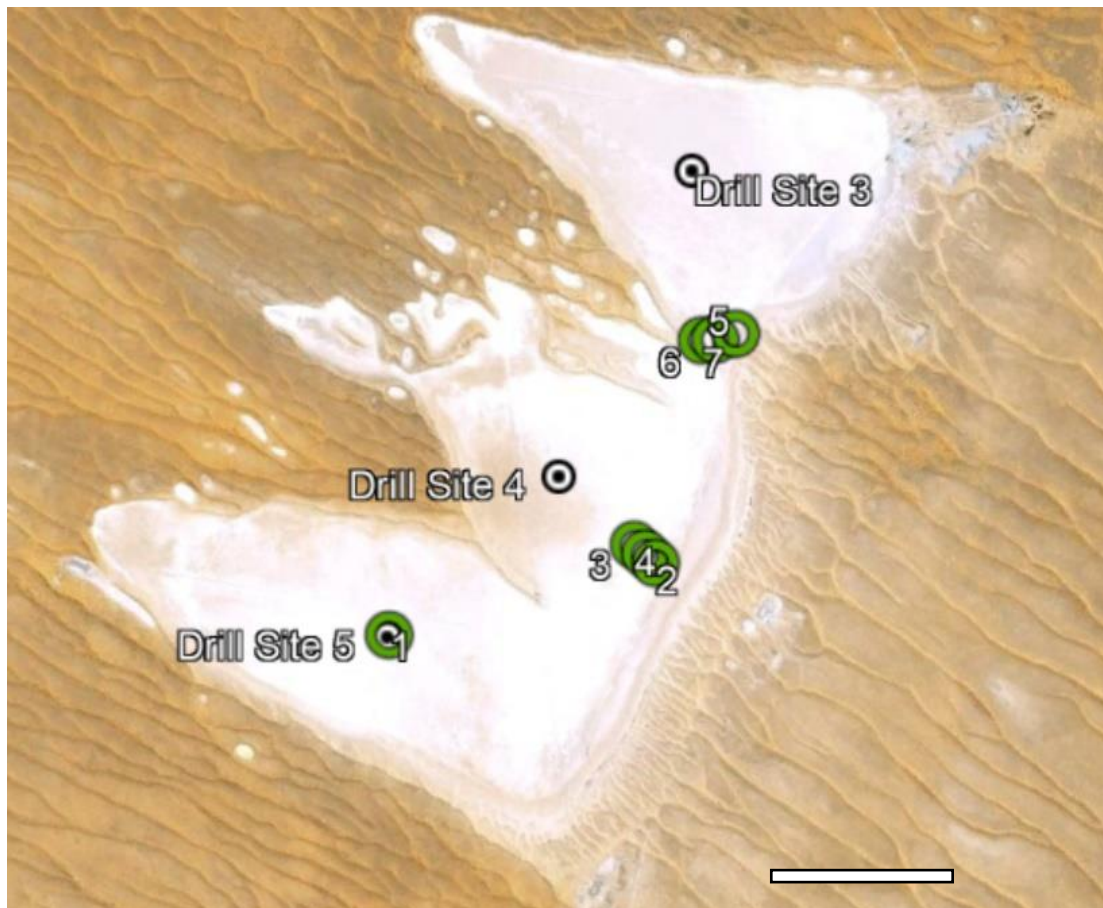


Figure 3. Tsonga Pan. Observation 1 is an identified drill site corresponding with the proposed Drill Site 5. The surrounding area was encrusted with salt and no artefacts were noted on the surface here. Observation 2 was pointed out as a drill site, and isolated stone artefacts were noted in an area around it (observations 3 and 4). Observation 5 was pointed out as a third drill site on Tsonga Pan, with stone artefacts (6 and 7) noted towards and on the side of a dune (see Figure 4 below). Scale bar: 1000 m

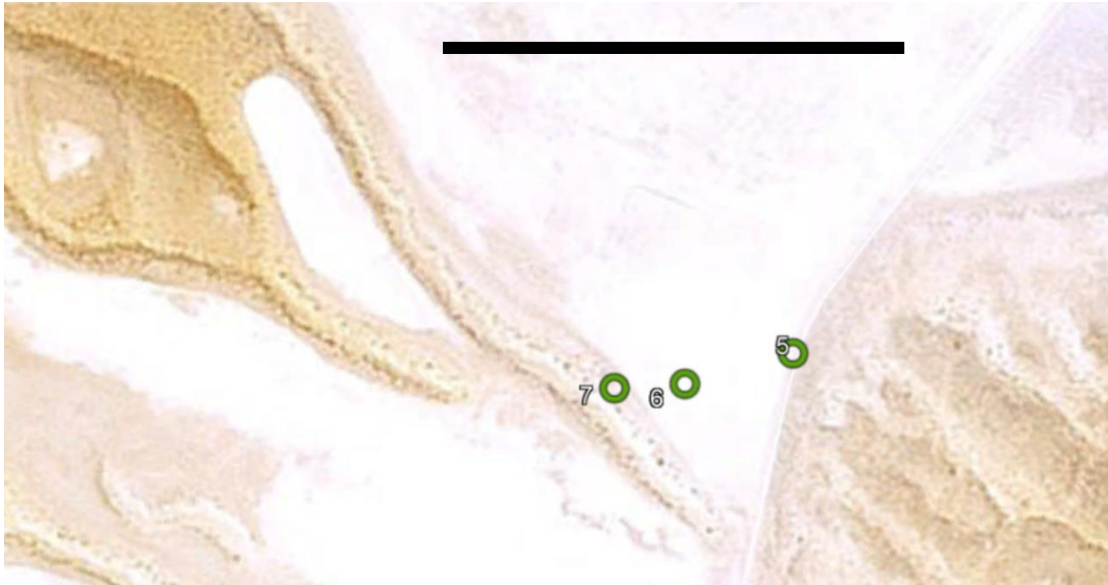


Figure 4: Tsonga Pan. Observation 5 is an identified drill site while 6 and 7 are isolated stone artefact occurrences below and against a dune spur crossing the pan. Scale bar: 500 m.



Figure 5: Bettastadt Pan. Observation 8 is a possible drill site at the northern end of the northern pan. The area is strewn with ?tillite with minimal evidence of archaeological material. Scale bar: 1000 m.



Figures 6 & 7 Observation 1: site of proposed drilling. No archaeological material was seen here.





Figure 8: Observation 2: proposed drill site.



Figures 9 and 10. Observations 3 and 4: isolated stone artefacts, possibly MSA.



Figures 11. Observation 5: Alongside the vehicles on the pan is a drilling site pointed out by the developer. Viewed from dune spur that penetrates across the pan.

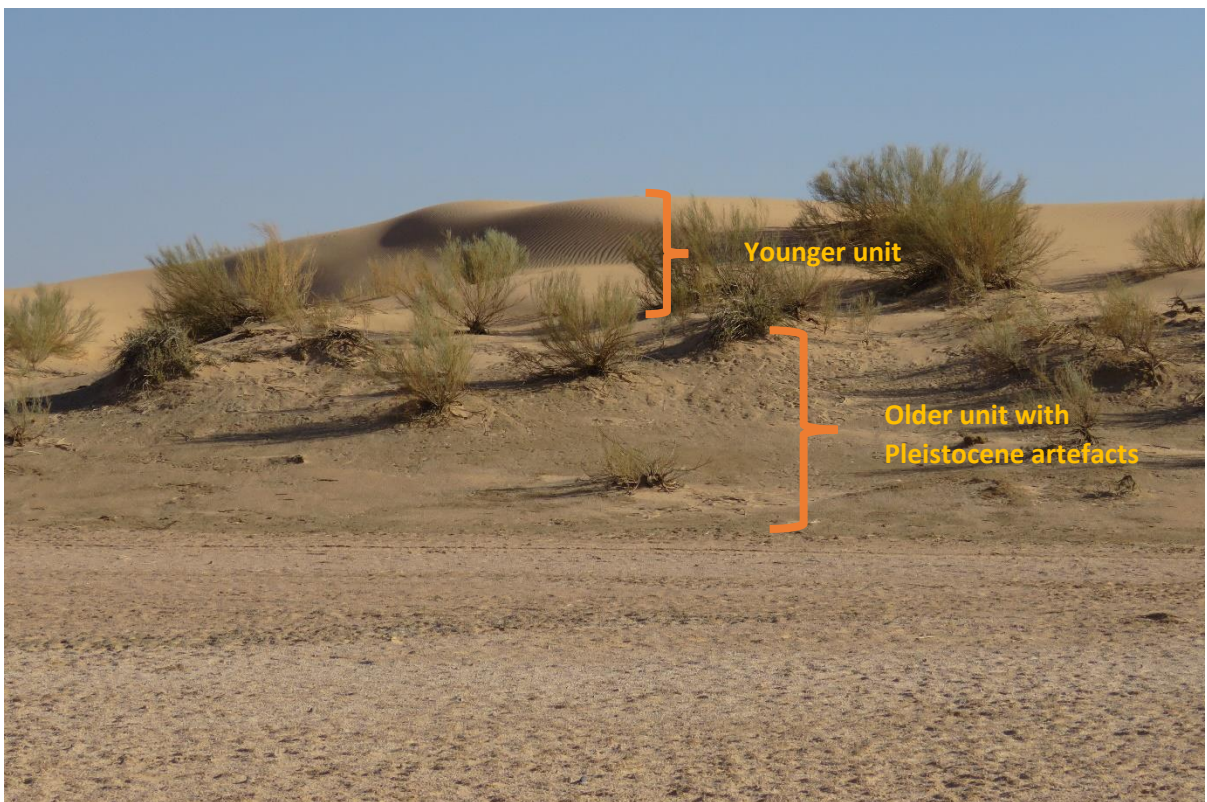


Figure 12. View of the dune from the pan, noting an older unit with overlying active wind-blown sand.



Figures 13. Observation 6: isolated quartzite stone artefact, MSA.



Figures 14 & 15. Observation 7: stone artefacts eroding from the palaeodune exposed beneath the active wind-blown unit as indicated in Figure 12.



Figures 16. Observation 8: Stone-strewn pan surface at the northern end of Bettastadt Pan.

4.2 Characterizing the overall significance of impacts

The criteria on which significance of impacts is based include **nature**, **extent**, **duration**, **magnitude** and **probability of occurrence**, with quantification of significance being grounded and calculated as follows:

- The **nature**, namely a description of what causes the effect, what will be affected, and how it will be affected.
- The **extent**, indicating the geographic distribution of the impact:
 - local extending only as far as the development site area – assigned a score of 1;
 - limited to the site and its immediate surroundings (up to 10 km) – assigned a score of 2;
 - impact is regional – assigned a score of 3;
 - impact is national – assigned a score of 4; or
 - impact across international borders – assigned a score of 5.
- The **duration**, measuring the lifetime of the impact:
 - very short duration (0–1 years) – assigned a score of 1;
 - short duration (2-5 years) - assigned a score of 2;

- medium-term (5–15 years) – assigned a score of 3;
 - long term (> 15 years) - assigned a score of 4;
 - or permanent - assigned a score of 5.
- The **magnitude**, quantified on a scale from 0-10:
 - 0 is small and will have no affect on the environment;
 - 2 is minor and will not result in an impact on environmental processes;
 - 4 is low and will cause a slight impact on environmental processes;
 - 6 is moderate and will result in environmental processes continuing but in a modified way;
 - 8 is high (environmental processes are altered to the extent that they temporarily cease); and
 - 10 is very high and results in complete destruction of patterns and permanent cessation of environmental processes.
- The **probability of occurrence**, indicating the likelihood of the impact actually occurring (scale of 1-5)
 - 1 is highly improbable (probably will not happen);
 - 2 is improbable (some possibility, but low likelihood);
 - 3 is probable (distinct possibility);
 - 4 is highly probable (most likely); and
 - 5 is definite (impact will occur regardless of any prevention measures).
- The **significance**, determined by a synthesis of the characteristics described above and expressed as low, medium or high. Significance is determined by the following formula:
 $S = (E+D+M) P$; where S = Significance weighting; E = Extent; D = Duration; M = Magnitude; P = Probability.
- The **status**, either positive, negative or neutral, reflecting:
 - the degree to which the impact can be reversed.
 - the degree to which the impact may cause irreplaceable loss of resources.
 - the degree to which the impact can be mitigated.
- **The significance weightings for each potential impact are as follows:**
 - < 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),
 - 30-60 points: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),
 - > 60 points: High (i.e. where the impact must have an influence on the decision process to develop in the area).

4.3 SUMMARY OF THE SIGNIFICANCE OF IMPACTS

Significance of Impacts, with and without mitigation – based on the worst case scenario – for the area investigated.

Nature:		
Acts or activities resulting in disturbance of surfaces and/or sub-surfaces containing artefacts (causes) resulting in the destruction, damage, excavation, alteration, removal or collection from its original position (consequences), of any archaeological or other heritage material or object (what affected).		
The following assessment refers to impact on physical archaeological/heritage traces.		
	Without mitigation	With mitigation
Extent	1	1
Duration	5	5
Magnitude	2	2
Probability	2	2
Significance	16	16
Status (positive or negative)	WEAKLY NEGATIVE	
Reversibility	No	No
Irreplaceable loss of resources?	Where present	Where present
Can impacts be mitigated?	Yes	Not deemed necessary
Mitigation: No mitigation deemed necessary.		
Cumulative impacts: Cumulative Impacts: where any archaeological contexts occur, direct impacts are once-off permanent destructive events. Secondary cumulative impacts may occur with the increase in development and operational activity associated with the longer-term proposed exploitation of potential brine sources. In the case of drilling under consideration in this report, given the single event and limited spatial impact, it is not anticipated that cumulative impacts would extend beyond the drill site, with no additional access roads or other infrastructure or landscape modification required.		

Residual Impacts: -

5. MEASURES FOR ENVIRONMENTAL MANAGEMENT

The objective

Archaeological or other heritage materials that may be encountered during any sub-surface disturbance associated with any aspect of the proposed sampling by drilling may be subject to destruction, damage, excavation, alteration, or removal. The objective is to limit such possible impacts.

Project component/s	Any activity potentially impacting unanticipated surface or sub-surface heritage traces.
Potential Impact	The potential impact if this objective is not met is that possible but unanticipated heritage traces may be subject to destruction, damage, excavation, alteration or removal.
Activity/risk source	Activities which could impact on achieving this objective include deviation from the development/sampling proposal without taking heritage impacts into consideration.
Mitigation: Target/Objective	An plan for environmental management that takes cognizance of the potential for unanticipated heritage resources occurring. Mitigation (based on present observations and project proposal) is not considered to be necessary.

Mitigation: Action/control	Responsibility	Timeframe
Provision for on-going heritage monitoring in an environmental management plan which also provides guidelines on what to do in the event of any major heritage feature being encountered during any phase of sampling and/or consequent work. Should unexpected finds be made (e.g. unanticipated concentration of stone artefacts, bone, ostrich eggshell), the relevant Heritage	Environmental management provider with on-going monitoring role for the drilling phase and for any instance of periodic or on-going land surface modification thereafter. Environmental Control Officer should report to the Heritage Authority as needed (see next	Environmental management plan to be in place before commencement of sampling. In the event of finding any unanticipated features mentioned in column 1, reporting by the developer to relevant

Authority should be contacted.	column).	heritage authority should be immediate. Contact: SAHRA Ms N. Higgins 021-4624502 or NC Heritage Resources Authority Mr Andrew Timothy 0790369294.
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Performance Indicator	Inclusion of further heritage impact consideration in sampling and/or any future drilling phases.
Monitoring	Officials from relevant heritage authorities (National, Provincial or Local) to be permitted to inspect the site at any time in relation to the heritage component of the management plan.

6. CONCLUSIONS AND RECOMMENDATIONS

Significance of impact on archaeological and cultural heritage features is reckoned to be low. Only very sparse evidence of a Stone Age presence in proximity to the drilling sites was found, with the possibility that rare artefacts found on the pan surfaces may derive from eroding palaeodunes alongside the pans. No colonial heritage was noted. As far as archaeology and cultural heritage is concerned, no mitigation measures are regarded as necessary. In the unlikely event that major unanticipated concentrations of artefacts and/or related features are found during sampling procedures, such finds should be brought to the attention of heritage authorities immediately for further assessment and mitigation if necessary.

The report does not address palaeontology.

In terms of this report on archaeological and cultural heritage resources, the recommendation is made that the sampling by drilling, as proposed, be allowed to proceed.

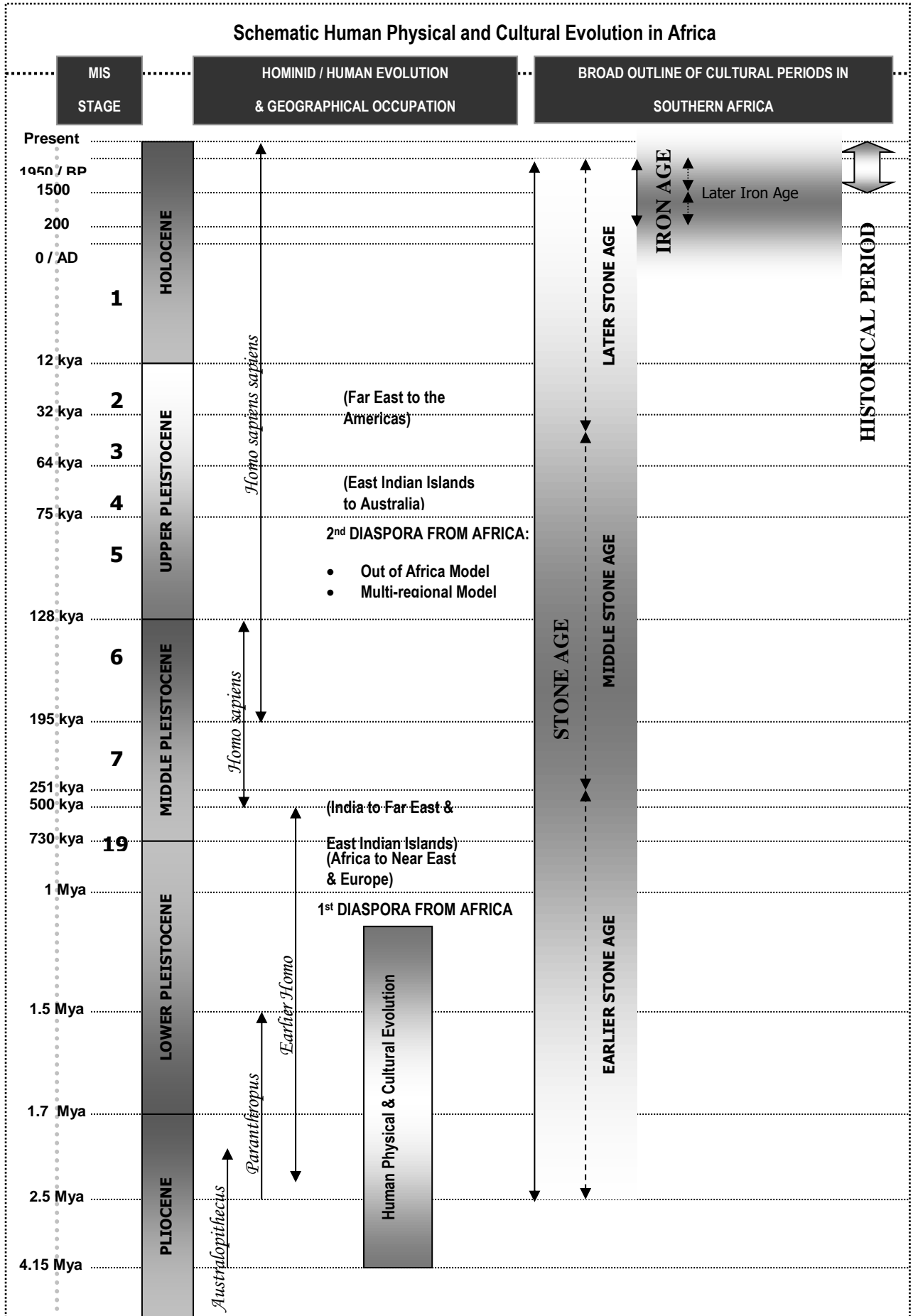
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APPENDIX 1



APPENDIX 2

National Heritage Resources Act (No 25 of 1999) Extracts

DEFINITIONS

Section 2

In this Act, unless the context requires otherwise:

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

NATIONAL ESTATE

Section 3

- 1) For the purposes of this Act, those heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate and fall within the sphere of operations of heritage resources authorities.
- 2) Without limiting the generality of subsection 1), the national estate may include –
 - a) places, buildings, structures and equipment of cultural significance;
 - b) places to which oral traditions are attached or which are associated with living heritage;
 - c) historical settlements and townscapes;
 - d) landscapes and natural features of cultural significance;
 - e) geological sites of scientific or cultural importance
 - f) archaeological and palaeontological sites;
 - g) graves and burial grounds, including –
 - i. ancestral graves;
 - ii. royal graves and graves of traditional leaders;
 - iii. graves of victims of conflict
 - iv. graves of individuals designated by the Minister by notice in the Gazette;

- v. historical graves and cemeteries; and
 - vi. other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No 65 of 1983)
- h) sites of significance relating to the history of slavery in South Africa;
- i) movable objects, including –
- i. objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
 - ii. objects to which oral traditions are attached or which are associated with living heritage;
 - iii. ethnographic art and objects;
 - iv. military objects;
 - v. objects of decorative or fine art;
 - vi. objects of scientific or technological interest; and
 - vii. books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 xiv) of the National Archives of South Africa Act, 1996 (Act No 43 of 1996).

STRUCTURES

Section 34

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

ARCHAEOLOGY, PALAEOLOGY AND METEORITES

Section 35

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

BURIAL GROUNDS AND GRAVES

Section 36

- 3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority –
- a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
 - b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or

- c) bring onto or use at a burial ground or grave referred to in paragraph a) or b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.
- 4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction of any burial ground or grave referred to in subsection 3a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.
- 5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection 3b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority –
 - a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and
 - b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.
- 6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority –
 - a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and
 - b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

HERITAGE RESOURCES MANAGEMENT

Section 38

- 1) Subject to the provisions of subsections 7), 8) and 9), any person who intends to undertake a development categorised as –
 - a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
 - b) the construction of a bridge or similar structure exceeding 50 m in length;
 - c) any development or other activity which will change the character of a site –
 - i. exceeding 5 000 m² in extent; or
 - ii. involving three or more existing erven or subdivisions thereof; or
 - iii. involving three or more erven or subdivisions thereof which have been consolidated within the past five years; or
 - iv. the costs which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
 - d) the rezoning of a site exceeding 10 000 m² in extent; or
 - e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,
 must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.
- 2) The responsible heritage resources authority must, within 14 days of receipt of a notification in terms of subsection 1) –
 - a) if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report. Such report must be compiled at the cost of the person proposing the development, by a person or persons approved by the responsible heritage resources authority with relevant qualifications and experience and professional standing in heritage resources management; or
 - b) notify the person concerned that this section does not apply.
- 3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection 2a) ...
- 4) The report must be considered timeously by the responsible heritage resources authority which must, after consultation with the person proposing the development decide –
 - a) whether or not the development may proceed;
 - b) any limitations or conditions to be applied to the development;
 - c) what general protections in terms of this Act apply, and what formal protections may be applied, to such heritage resources;
 - d) whether compensatory action is required in respect of any heritage resources damaged or destroyed as a result of the development; and
 - e) whether the appointment of specialists is required as a condition of approval of the proposal.

APPOINTMENT AND POWERS OF HERITAGE INSPECTORS

Section 50

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

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.