

McGregor Museum
Department of Archaeology



**Heritage Impact Assessment for
proposed clearing of 70 ha
diamondiferous material from the
Buffalo Camp on the north eastern
side of Kimberley, Northern Cape.**

David Morris, McGregor Museum
May 2015

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Executive Summary

A Phase 1 Heritage Impact Assessment is presented.

It was found that the extent of previous disturbance, a) by historic mining operations in the form of depositing floors, b) by rehabilitation/recycling of historic mining infrastructure and c) by subsequent illegal digging, has meant that from a heritage perspective very little of significance remains or is in situ in the area now known as Buffalo Camp. At the periphery of the area, close to the railway line in the south western part of Buffalo Camp, there are ruins taken to be remains of a 'Stable Compound' or its associated features, which as far as possible should be left undisturbed.

It remains possible that some material of significance may still occur subsurface which, if encountered, should be brought to the attention of heritage authorities for further assessment and mitigation if necessary.

In terms of this report, no significant heritage traces were found in the area of expected clearance operations that are considered to require further mitigation.

The loss of heritage resources is therefore assessed to be of **low** significance with and without the implementation of mitigation.

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1. INTRODUCTION

The McGregor Museum Archaeology Department was appointed by SRK (by Mr Scott Masson) with respect to an EIA for the clearing of 70 ha of diamondiferous material from the Buffalo Camp, former De Beers Depositing Floors, on the north eastern side of Kimberley, Northern Cape. The request was to carry out a Phase 1 assessment of the possible impacts on heritage resources (archaeological and cultural) of this operation.

The site was inspected on foot on 31 March-1 April 2015 and relevant observations are indicated in this report.

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

2. THE AUTHOR OF THIS REPORT

The 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 since 1985.

The author is independent of the organization commissioning this specialist input, and provides this heritage assessment (archaeology and colonial history but not palaeontology) within the framework of the National Heritage Resources Act (No 25 of 1999).

The National Heritage Resources Act no. 25 of 1999 (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 may not do so without a permit from the

relevant heritage resources authority. This means that a Heritage Impact Assessment should be performed, resulting in a specialist report as required by the relevant heritage resources authority/ies to assess whether authorisation may be granted for the disturbance or alteration, or destruction of heritage resources.

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.

3. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The environment of proposed recovery of diamondiferous material lies on the north eastern outskirts of Kimberley alongside (east and south east of) Yonder/Kenilworth. It consists predominantly of historical 'Depositing Floors' (part of the De Beers Mine operation) associated with the early mining history of Kimberley. As an archaeological landscape, the Floors make for an industrial/mining history palimpsest on top of an older Stone Age landscape (See the Glossary for definitions of any unfamiliar terms or usages, such as "palimpsest"). The Floors transformed this older landscape which nevertheless remains evident in the presence of probably largely displaced artefacts which today lie at the surface in places.

The existence of remaining expanses of diamondiferous material at the surface or just beneath it attracts illegal miners so that the area is today pock-marked with their shallow excavations, and lightly littered with the material accoutrements (including a hidden spade encountered during the survey) of these clandestine activities. The intention of the clearing operation for which this impact assessment is required is to recover the remaining diamondiferous material and thereby also end the illegal diggings.

The terrain is veneered with Hutton Sands over a shale/dolerite substrate (exposed in places), and supports Kimberley thornveld vegetation.

From an archaeological perspective there is relatively good visibility.



Figure 1: Google Earth image map indicating the extent of Buffalo Camp and the former De Beers Mine Depositing Floors (visible in its rectangular spatial spread orientated south west to north east), scheduled for clearing of diamondiferous material.

4. DESCRIPTION OF HERITAGE FEATURES OF THE REGION

The Northern Cape has a wealth of precolonial archaeological sites (Beaumont & Morris 1990; Morris & Beaumont 2004), these often being focused along rivers such as the nearby Vaal (e.g. Gibbon *et al.* 2009), or around koppies, for example Wildebeest Kuil (e.g. Morris 1988, 2006) just west of Kimberley, as well as at the verges of pans such as Alexandersfontein east of Kimberley (e.g. Morris 2002). Important Fauresmith age sites occur in the palaeodunes that flank the Samaria Road just north east of Buffalo Camp (Beaumont 1990; Morris 1992, 1999).

Colonial era traces are preponderantly associated with the development of the diamond mines and the evolution of the City of Kimberley and include industrial archaeology/heritage and material traces of the city's cultural history, most notably here in the traces of 'floors' which were part of the historical method of diamond recovery in which blue ground was exposed to weathering processes for a time, and the adjacent features such as the now largely cleared Kenilworth Dump (Morris 1999) where mine debris was ultimately deposited (Morris 1999). The unique late nineteenth century Kenilworth village development, originally for white mine workers (Roberts 1976), is situated north west of the Buffalo Camp, the Kenilworth Cemetery lying beyond it.

4.1 Environmental issues and potential impacts

Heritage resources including archaeological sites and colonial era features are in each instance unique and non-renewable resources. Area disturbances such as that envisaged can have a permanent destructive impact on such resources. The objective of this assessment is to evaluate the sensitivity of such resources where present, to assess the significance of potential impacts on these resources and, if and where appropriate, to recommend no-go areas and measures to mitigate or manage said impacts.

The destructive impacts that are possible in terms of heritage resources would tend to be direct, once-off events occurring during the diamondiferous material clearing operation envisaged.

5. METHODOLOGY

The area of the proposed clearing was inspected on foot. As noted above, the terrain is regarded as having fairly high archaeological 'visibility' in that surface traces are regarded

as presenting a fair indication of heritage features actually present – although clearly there is potential for features, possibly important ones, being buried. Observations of heritage traces where noted are characterised below and evaluated.

5.1 Assumptions and limitations

It was assumed that, by and large in this particular disturbed landscape, a palimpsest comprising mine ‘floors’ superimposed on the landscape, any older, i.e. precolonial, traces would tend not to be completely in situ. Some degree of rehabilitation of mining property had meant that much of the industrial landscape in the area had also since been disturbed by clearances, e.g. a systematic removal of metal objects including industrial railways and haulage lines. Recent illegal digging has further modified the industrial heritage layer in the landscape. It was not expected that much if anything substantial would remain of either the precolonial or the colonial history of this particular locale. The assessment was aimed in part to verify this and to record what little might remain.

A condition is routinely given, that should sites or features of significance be encountered during the clearing operation (this could include an unmarked burial or a high density of stone tools or of colonial era material, for instance), specified steps are necessary (cease work, report immediately to relevant heritage authority).

5.2 Potentially significant impacts to be assessed

Any area or linear, primary and secondary, disturbance of surfaces within the proposed site of operation 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 SAHRA and, in the case of any built environment features, by the Northern Cape Heritage Resources Authority. Although highly unlikely in this instance, there may be some that could require preservation *in situ* and hence modification of intended clearance planning.

Disturbance of surfaces includes any *clearance* of, or *excavation* into, a land surface. In the event of archaeological materials being present such activity would alter or destroy their context (even if the artefacts themselves are not destroyed, which is also obviously possible). Without context, archaeological traces are generally rendered bereft of meaning and significance. It is the contexts as much as the individual items that are

protected by the heritage legislation: the protection of objects *in place* is concerned primarily with their preservation in context.

A number of broad expectations/concerns might be expressed for this vicinity:

- 5.2.1 Based on previous experience in the area, the terrain on the north eastern outskirts of Kimberley is likely to include a generally low density and widespread occurrence of mainly Pleistocene Stone Age material, including what has been defined as Fauresmith, mainly based on hornfels as raw material. It would tend to occur on calcrete where exposed, or in the lower margins of Hutton sands that veneer the landscape here.
- 5.2.2 There appear to be none of the features such as hills or rocky outcrops or even palaeodunes (the latter probably destroyed in the laying down of the depositing floors) in the area which in other parts of this landscape provide shelter or relatively resource-rich micro-habitats that attracted people particularly of the Later Stone Age (an example being the hill at Wildebeest Kuil Rock Art Centre, or the Fauresmith occurrences amongst the palaeodunes at Rosebery Plains on the Samaria Road). 'Off-site' distributions of artefacts would tend to be of low density and relatively lower significance.
- 5.2.3 Considerable historical and recent surface disturbance has already occurred over the entire terrain in question, the implications of which are that few *in situ* Stone Age occurrences would have survived past impacts, while industrial archaeological traces, as also noted above, have subsequently also been impacted to a large extent by mine rehabilitation, particularly here in the gathering up of metal, probably both formal and informal, for recycling. The highest point of the adjacent Kenilworth Dump was the site of a redoubt (fort) in the Defence of Kimberley during the Siege, 1899-1900, but this feature has since been cleared nearly to original surface level.
- 5.2.4 Significant intangible heritage values are not expected to be attached to this now much modified area. Socially fringe activity, principally informal small-scale illegal subsistence digging, has sprouted in the area, generating its own material traces as noted above.
- 5.2.5 Visual and other impacts might be considered, particularly alongside heritage landscapes, in this case especially the Kenilworth Village, although the activity of clearing is not likely to impinge visually or have a long-term visual impact. The impacts on trees/vegetation are not the province of this report.

5.3 Determining archaeological significance

In addition to guidelines provided by the NHRA, a set of criteria based on Deacon (nd) and Whitelaw (1997) for assessing archaeological significance has been developed for Northern Cape settings (Morris 2000a). These criteria include estimation of landform potential (in terms of its capacity to contain archaeological traces) and assessing the value of any archaeological traces (in terms of their attributes or their capacity to be construed as evidence, given that evidence is not given but constructed by the investigator). These significance assessment criteria are appended in table form at the end of this report.

6. OBSERVATIONS

The Buffalo Camp was visited at the end of March 2015. In summary, observations can be reported in relation to predictions made prior to fieldwork (see above).



Figure 2: GPS track Day 1. A comprehensive idea of the nature and spread of heritage traces was obtained during a drive-through with regular stops and on-foot inspections.



Figure 3: The terrain today – over a century this thornveld has recovered across the erstwhile depositing floors.

6.1 A generally low density and widespread occurrence of mainly Pleistocene Stone Age material was found to have occurred here as predicted with indications of this being generally isolated stone tools noted on exposed substrate at the base of, but probably also within, the red Hutton sands. The artefacts noted at several locales are not likely to be in situ or complete (because of the overlay of mining depositing floors) and thus cannot be construed as being significant occurrences.



Figure 4: Probably Fauresmith age artefacts occur alongside mining-associated objects on parts of the depositing floors. (28.71556° 24.80477° & 28.71569° 24.79350°).



Figure 5: Fauresmith biface and other artefacts on a sheet erosion surface on the floors (28.71871° 24.80040°). These testify to the anticipated presence of such material, which however lacks integrity following disturbance by historical mining activity (depositing floors).

6.2 A lack of features such as hills or rocky outcrops precluded the possibility of rock engravings and no convincing Later Stone Age material was found. Dolerite exposures were noted in a few places but were not of a nature that would support rock art.

6.3 Considerable historical and recent surface disturbance has already occurred over the entire terrain. This rules out the possibility of *in situ* Stone Age occurrences (see above).

6.4 Industrial archaeological traces are most obviously present in the remains of the floors and the very presence of the diamondiferous material which the present project seeks to remove. Artificial ridges of material are the principal traces of the old floors. Also present are artificial furrows (south western side) and remains of rail haulage lines (no

rails remain but the large iron pins that held the rails in place are to be found). Carbon rods from arc-lamp lighting are to be found in places. Much that would have been of interest from an industrial archaeological point of view has long since been removed through prior systematic recovery of metal and other infrastructure.



Figure 6: Carbon rod (28.72115° 24.79811°) and haulage line nail (28.71813° 24.79253°).

An 1893 map records the existence of a steam tramway and mechanical haulage system which both ran south west to north east through what is now Buffalo Camp, parallel with the Samaria Road (Morris 1999). Believed to be outside of the area of intended clearance but noted again here (see Morris 1999) is a ruin thought to be remains of late nineteenth century stables ('Stable Compound'), situated at 28.71855° 24.79097°.



Figure 7: Location of Stable Compound ruins (28.71855° 24.79097°): **to be avoided in clearance operation.**

Two second half of twentieth century pump houses at 28.71370° 24.79055° are not regarded as having heritage significance.



Figure 8: Pump infrastructure at 28.71370° 24.79055°

A stone beacon was noted at 28.71951° 24.80058°. Its destruction should be avoided if possible.



Figure 9: Beacon at 28.71951° 24.80058°.

6.5 Recent activity on the site, namely illegal digging, leaves its own archaeological trace – numerous shallow excavations into the seams of diamondiferous material at or just below the surface and the associated material accoutrements.



Figure 10: Illegal diggings.

6.6 Visual impacts are not expected to be a major aspect of the proposed clearing operation, other than in terms of excessive clearance of Kalahari thornveld vegetation which might otherwise mask the mining activities.

7. IMPACT ASSESSMENT

7.1 Assessment Criteria

The criteria for the description and assessment of environmental impacts derive from the EIA Regulations, published by the Department of Environmental Affairs and Tourism (April 1998) in terms of the National Environmental Management Act, 1998 (Act No.107 of 1998).

The significance of all potential impacts (positive and negative) that would result from the proposed clearance of diamondiferous material from Buffalo Camp is determined in order to assist decision-makers. The significance rating of impacts is considered as follows:

- **INSIGNIFICANT:** the potential impact is negligible and will not have an influence on the decision regarding the proposed activity.
- **VERY LOW:** the potential impact is very small and should not have any meaningful influence on the decision regarding the proposed activity.
- **LOW:** the potential impact may not have any meaningful influence on the decision regarding the proposed activity.
- **MEDIUM:** the potential impact should influence the decision regarding the proposed activity.
- **HIGH:** the potential impact will affect a decision regarding the proposed activity.
- **VERY HIGH:** The proposed activity should only be approved under special circumstances. The significance of an impact is defined as a combination of the consequence of the impact occurring and the probability that the impact will occur.

Following the criteria and procedure and assessment tables set out by SRK Consulting, the impact may be summarized as follows:

Overall impact assessment (loss of heritage) based on observations on heritage resources in Buffalo Camp. Note that many of the heritage resources observed would be disturbed/lost through the anticipated operation with greater than 90% probability but that in general their significance is low, many already being displaced and lacking in archaeological integrity.

	<i>Extent</i>	<i>Intensity</i>	<i>Duration</i>	<i>Consequence</i>	<i>Probability</i>	<i>Significance</i>	<i>Status</i>	<i>Confidence</i>
Without mitigation	Local 1	Low 1	Long term 3	Low 5	Definite	LOW	-ve	High
Essential mitigation measures: <ul style="list-style-type: none"> • Avoid disturbance of the Stable Compound ruins which are indicated in the south western corner of the site. • Report any major subsurface finds made during any phase of the operation to the relevant heritage authority. Best practice mitigation measures: <ul style="list-style-type: none"> • N/A 								
With mitigation	Local	Low	Long term	Low	Definite	LOW	-ve	High

8. CONCLUSIONS AND RECOMMENDATIONS

It was found that the terrain had already been disturbed a) by historic mining operations in the form of depositing floors, b) by rehabilitation/recycling of historic mining infrastructure and c) by subsequent illegal digging. This has meant that from a heritage perspective very little of significance remains or is in situ in the area now known as Buffalo Camp.

At the periphery of the area, close to the railway line in the south western part of Buffalo Camp, there are ruins taken to be remains of a 'Stable Compound' or its associated features, which as far as possible should be left intact (Morris 1999).

There is a remote chance, as noted above, that some material of significance may still occur subsurface which, if encountered, should be brought to the attention of heritage authorities. In such an event, in the course of the clearing operation, work should halt and SAHRA and/or the Northern Cape Heritage Resources Agency be contacted to allow for further assessment and mitigation recommendations.

In conclusion, with the exception of the Stable Compound ruins at the south western periphery of the proposed operation, no significant heritage traces were found that are considered to require further mitigation.

The loss of heritage resources is therefore assessed to be of **low** significance with and without the implementation of mitigation.

Acknowledgements

I thank Ms Abenicia Henderson (McGregor Museum Archaeology) together with De Beers security personnel who accompanied me on the visit to the site.

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GLOSSARY

Accoutrements Sundry equipment, used in this report in the sense of items brought to the site by illegal diggers.

Acheulean In Africa, stone tool industries called Acheulean date from about 1.6 million years ago, consisting of irregular flakes, cores that were sometimes prepared for pre-determining flake shape, and intentionally shaped tools called handaxes and cleavers. Acheulean sites in this region are typically found along rivers and at the margins of pans. The Acheulean was succeeded in the interior of South Africa, about 500 000 years ago, by a stone tool making tradition known as the Fauresmith, typified by cleavers and handaxes as well as the intentional shaping of flakes as blades and convergent points.

Artefact Portable object used, modified or made by humans, e.g., stone tools, pottery and metal weapons.

Anthropology Broadly, the study of humanity in its social, cultural, and physical aspects, past and present. Tim Ingold recently suggested that "the task of anthropology is to help dismantle the intellectual barriers that currently separate the humanities from natural science"; that "social/cultural anthropology, biological anthropology and archaeology form a necessary unity"; and that "anthropology deals, in the first place, not with entities and events, but with relations and processes". If, historically, there was a tendency for anthropology to be a study of "the other" in colonial situations by western academics, Ingold argues that in anthropology today "we study ourselves" - "the future of anthropology lies in changing our conception of who 'we' are, from an exclusive Western 'we' to an inclusive, global 'we'. He ends by suggesting that "Anthropology is philosophy with the people in."

Archaeology Is the study of the material traces of past human activity, a sub-discipline of Anthropology. It may be defined as a set of methods and techniques used for writing history based on the material record that humans leave behind or that may be relevant to that record. It covers the span of time from our earliest ancestors, and in principle extends to within moments of the present. It is most commonly applied to periods for which there is little record except the material one.

Earlier Stone Age (ESA) A division of the Stone Age, including Oldowan and Acheulean Industries. Approximately 2.5 million years to 250 000 years ago (assuming the Fauresmith to be Earlier rather than Middle Stone Age).

Fauresmith The Acheulean (Early Stone Age) stone tool industries were succeeded, about 500 000 years ago, by a tool-making tradition known as the Fauresmith, typified by handaxes and the intentional shaping of flakes as Levallois points; also including blades and sometimes backed items. It may be considered as a phase of the Early Middle Stone Age, ending about 250 000 years ago.

Handaxe Sometimes referred to as a biface - A flake or core tool made by fashioning a cobble.

Holocene A Geological timespan that covers the last 10 000 years. It may be referred to as Recent or Post-Glacial.

Hornfels Indurated shale, or shale that has been metamorphosed during intrusion of volcanic magma in Karoo times. Its flaking qualities made it a favoured raw material for stone tool making in the Karoo.

In situ In place, undisturbed.

Iron Age In Africa, this term is often applied to the period of and sites reflecting the farming way of life and associated with metal and ceramic technology.

Later Stone Age (LSA) A division of the Stone Age. Approximately 30 000 years ago to historic times. Stone tool traditions of what archaeologists term the Later Stone Age are mainly characterised by a diversity of "microliths" - small stone tools, some used as parts of composite tools, as barbs, or points for arrows. Hunting and gathering people of the Later Stone Age were ancestral to the historical San.

Middle Stone Age (MSA) A division of the Stone Age. By around 250 000 years ago handaxes and cleavers were no longer made (See Fauresmith). Middle Stone Age technology from this period to about 40-30 000 years ago is characterised by the presence of convergent points, with innovations including the use of pressure flaking in stone tool production, shaping (and rare decoration) of stone (e.g. Blombos Cave), bone and wooden items, and use of stone grindstones.

Palaeodune Result of Aeolian processes, i.e. the erosion, transport and deposition of material due to the action of wind at/near the earth's surface. Aeolian processes are at their most effective when the vegetation cover is reduced or absent. Palaeodunes occur in areas such as on the eastern outskirts of Kimberley that were once drier, with formerly active wind-blown dunes as a feature of the landscape

Palimpsest In archaeology traces of the past are generally found to have mounted up in layers or been swept away through time – this covering over or becoming uncovered being well described by the fine arts term “palimpsest”. Archaeologist Geoff Bailey suggests that palimpsests are an inherent feature of the world we inhabit. He defines different forms of palimpsest – true palimpsests in which successive layers of activity obliterate preceding ones, completely or nearly so; cumulative palimpsests (common in open sites of the Northern Cape) in which successive layers build up or are winnowed down, such that deposition episodes mingle and become ‘mixed’; spatial palimpsests in which the traces of spatially discrete events are difficult to correlate chronologically, or where spatially clustered materials disaggregate through time; temporal palimpsests in which objects of differing age are deposited in a single event, as in a burial, or a shipwreck; and finally, palimpsests of meaning revealed in the life histories or cultural

biographies of objects or places which, as they endure, may be put to continuous or changing uses or acquire different meanings through shifting contexts or associations in time which blend, potentially, across many generations of human life. Bailey suggests it is hard to think of any situation or place either in the archaeological past or in the contemporary world which is not, one way or another, a palimpsest.

Pleistocene A Geological timespan conventionally believed to have lasted from approximately 2 million years ago to the beginning of the Holocene about 10 000 years ago.

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APPENDIX 1: Tables for determining archaeological significance

In addition to guidelines provided by the National Heritage Resources Act (Act No. 25 of 1999), a set of criteria based on Deacon (nd) and Whitelaw (1997) for assessing archaeological significance has been developed for Northern Cape settings (Morris 2000a). These criteria include estimation of landform potential (in terms of its capacity to contain archaeological traces) and assessing the value of any archaeological traces (in terms of their attributes or their capacity to be construed as evidence, given that evidence is not given but constructed by the investigator).

Estimating site potential

Table 1 (below) is a classification of landforms and visible archaeological traces used for estimating the potential of archaeological sites (after J. Deacon nd, National Monuments Council). Type 3 sites tend to be those with higher archaeological potential, but there are notable exceptions to this rule, for example the renowned rock engravings site Driekopseiland near Kimberley which is on landform L1 Type 1 – normally a setting of lowest expected potential. It should also be noted that, generally, the older a site the poorer the preservation, so that sometimes *any* trace, even of only Type 1 quality, can be of exceptional significance. In light of this, estimation of potential will always be a matter for archaeological observation and interpretation.

Assessing site value by attribute

Table 2 is adapted from Whitelaw (1997), who developed an approach for selecting sites meriting heritage recognition status in KwaZulu-Natal. It is a means of judging a site's archaeological value by ranking the relative strengths of a range of attributes (given in the second column of the table). While aspects of this matrix remain qualitative, attribute assessment is a good indicator of the general archaeological significance of a site, with Type 3 attributes being those of highest significance.

Table 1. Classification of landforms and visible archaeological traces for estimating the potential for archaeological sites (after J. Deacon, National Monuments Council).

Class	Landform	Type 1	Type 2	Type 3
L1	Rocky surface	Bedrock exposed	Some soil patches	Sandy/grassy patches
L2	Ploughed land	Far from water	In floodplain	On old river terrace
L3	Sandy ground, inland	Far from water	In floodplain or near feature such as hill	On old river terrace
L4	Sandy ground, Coastal	>1 km from sea	Inland of dune cordon	Near rocky shore
L5	Water-logged deposit	Heavily vegetated	Running water	Sedimentary basin
L6	Developed urban	Heavily built-up with no known record of early settlement	Known early settlement, but buildings have basements	Buildings without extensive basements over known historical sites
L7	Lime/dolomite	>5 myrs	<5000 yrs	Between 5000 yrs and 5 myrs
L8	Rock shelter	Rocky floor	Sloping floor or small area	Flat floor, high ceiling
Class	Archaeo-logical traces	Type 1	Type 2	Type 3
A1	Area previously excavated	Little deposit remaining	More than half deposit remaining	High profile site
A2	Shell or bones visible	Dispersed scatter	Deposit <0.5 m thick	Deposit >0.5 m thick; shell and bone dense
A3	Stone artefacts or stone walling or other feature visible	Dispersed scatter	Deposit <0.5 m thick	Deposit >0.5 m thick

Table 2. Site attributes and value assessment (adapted from Whitelaw 1997)

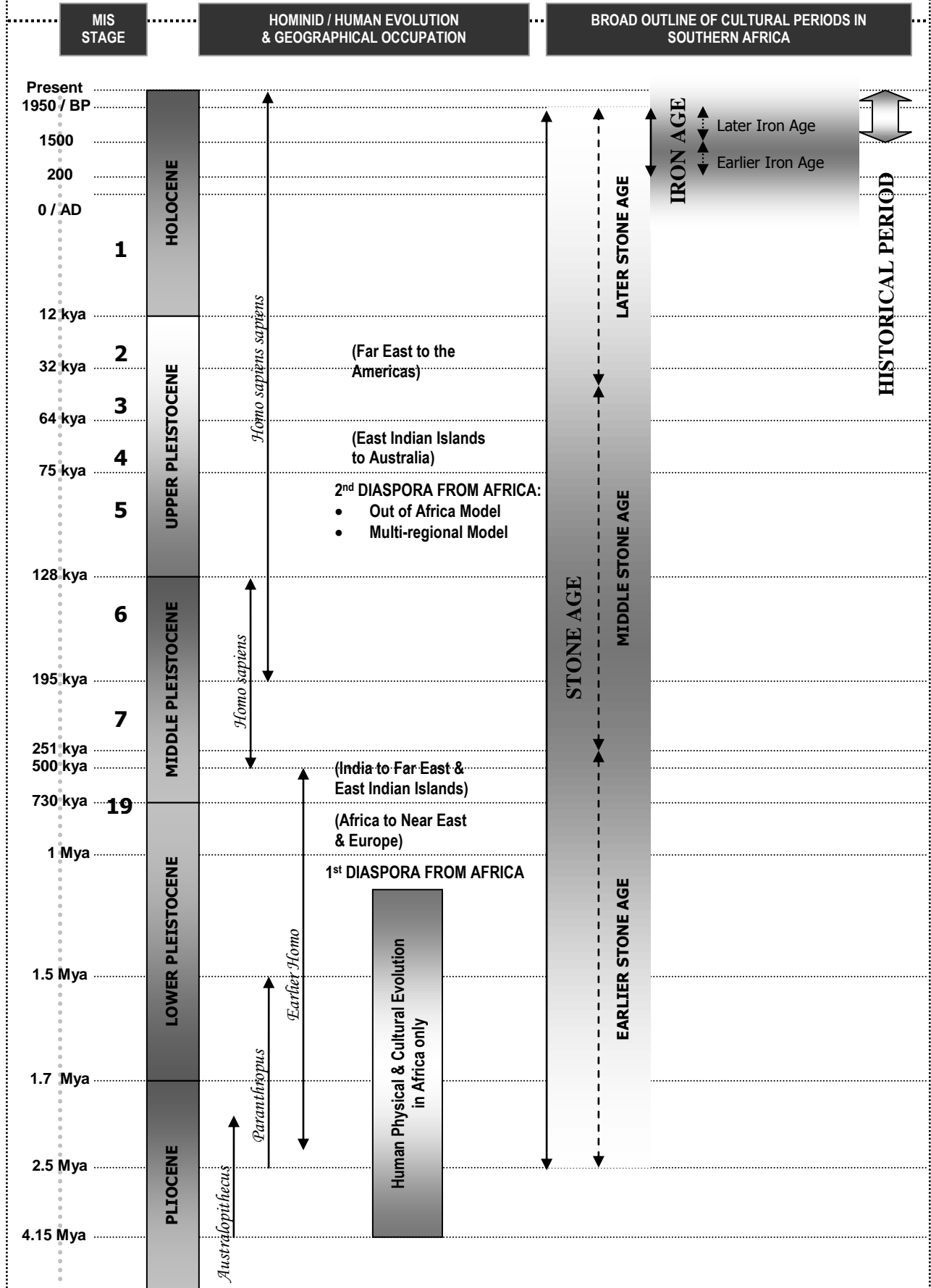
Class	Attribute	Type 1	Type 2	Type 3
1	Length of sequence/context	No sequence Poor context Dispersed distribution	Limited sequence	Long sequence Favourable context High density of arte/ecofacts
2	Presence of exceptional items (incl regional rarity)	Absent	Present	Major element
3	Organic preservation	Absent	Present	Major element
4	Potential for future archaeological investigation	Low	Medium	High
5	Potential for public display	Low	Medium	High
6	Aesthetic appeal	Low	Medium	High
7	Potential for implementation of a long-term management plan	Low	Medium	High

In terms of the criteria set out in Table 1 all the observations made fall within Landform Class L3 Type 1 and Archaeological Trace Class A3 Type 1 – both likely to be of **Low** significance.

In terms of the criteria set out in Table 2 the observations fall preponderantly in Type 1 (**Low** significance) for all Classes 1-7.

The Stable Compound ruin site at the periphery of the project area may be classed as Site Attribute/Value Class 4 Type 2 **Medium** potential for future archaeological investigation.

Schematic Human Physical and Cultural Evolution in 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 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.