McGregor Museum
Department of Archaeology

Heritage Impact Assessment for the proposed Upgrade of the Vaal Gamagara Regional Water Supply Scheme Phase 2

David Morris and Abenicia Henderson
May 2019

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1. INTRODUCTION

The McGregor Museum archaeology department was subcontracted by Nemai Consulting (contact: Samantha Gerber 147 Bram Fischer Driver Ferndale, email: samathahag@nemai.co.za; Donavan Henning 147 Bram Fischer Drive Ferndale, email donavanh@nemai.co.za) to conduct a Phase 1 Heritage Impact Assessment with focus on archaeology around the proposed Vaal Gamagara Regional Water Supply Scheme Phase 2 that runs from Delportshoop to Olifantshoek, Northern Cape Province. Njabulo Mkhosana of NM Environmental (tel: 065 921 9371. email: nmkhosana@nmenvironmental.co.za) provided details of the extent of the prospecting area and contact details of relevant people to gain access to the landscape for assessment purposes. The site consists of an undulating landscape west of Lime acres in the Rooiberge, a portion of the Asbestos Mountains west of the mining town of Lime acres.

During site visits in the week 15-17 May 2019 several portions of the landscape in question were visited and archaeological observations made. Some parts of the properties could not be accessed and the individuals/organizations concerned could not be approached.

This report gives provisional insight into the archaeological heritage resources to be seen and expected to occur in the proposed footprint.

Field notes 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 (both 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 of 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, and received UCT-accredited training on 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.
The second author

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 Boŝwa 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 study area is situated in the Rooiberge (portion of the Asbestos Mountains) immediately west of the mining town of Lime acres near Danielskuil in the Northern Cape. Eastwards (from Lime acres) is the Ghaap Plateau.

The area at Lime Acres is underlain by Precambrian sediments and lavas of the Transvaal Supergroup, of Late Archaean to Early Proterozoic age (about 2.25 to 2.22 billion years old). These include dolomites of the Campbell Rand Subgroup in the east, at Lime acres, which are successively overlain westwards through the Rooiberge by banded iron formations (Kuruman and Daniëlskuil Formations) of the Asbestos Hills Subgroup. Superficial sediments of late Cenozoic age include aeolian sands of the Gordonia Formation (Kalahari Group), calcrete hardpans, colluvial banded ironstone surface rubble

and scree, river alluvium and pan deposits. The Gordonia Formation aeolian sands are considered to range in age from the Late Pliocene / Early Pleistocene to Recent, dated in part from enclosed Middle to Later Stone Age stone tools (Dingle et al., 1983, p. 291, cited by Almond 2013:14). (The recent extension of the Pliocene - Pleistocene boundary from 1.8 Ma back to 2.588 Ma would place the Gordonia Formation almost entirely within the Pleistocene Epoch - Almond 2013).

West from Lime Acres towards Postmasburg and Olifantshoek the general terrain is characterized by a number of low rising dolerite outcrops, with the geological substrate, also the inferred anthropogenic basal member, a combined dolerite and banded iron stone 'pebble' member surfacing at intervals. A low density of Stone Age artefacts are present on the surface of the site, mainly found within the surfacing 'pebble' member. Artefact densities are too low to ascribe an artifact ratio to the occurrence. Artefacts are primarily ascribed to the later Middle Stone Age (MSA) and the Later Stone Age (LSA) based on typology and artifact size. Artifacts are produced from mixed raw material sources, including medium to fine grained dolerite, banded iron stone, jasperlite, baked shale, quartzite material and including a few siliceous pieces.

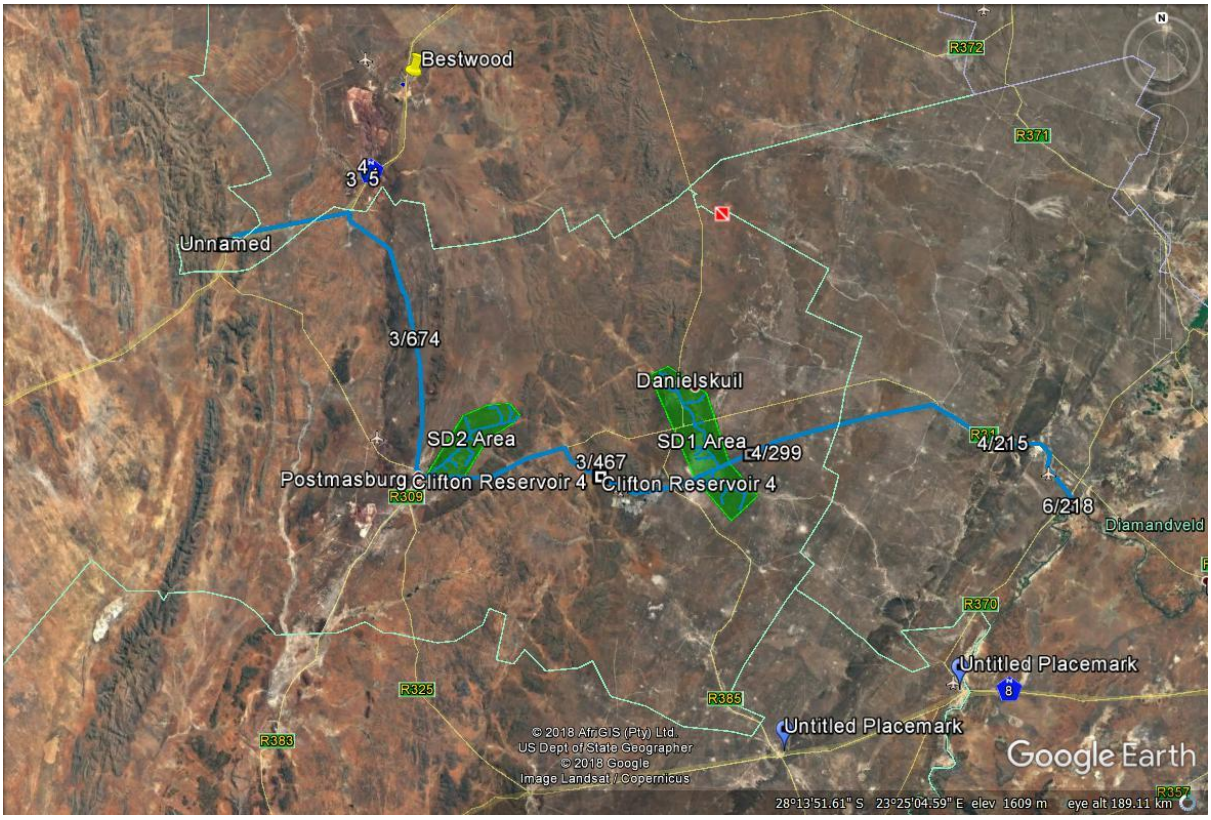

Figure1: Proposed pipeline route for the Vaal Gamagara Water Supply Upgrade

2.1. Project components

A detailed proposal and background to the project has been provided, affected/ areas of impact are outlined Figure 1.

2.2 Background to the heritage features of the area

The archaeology of the Northern Cape is rich and varied, covering long spans of human history. Stone Age material found in this area spans the Earlier, Middle and Later Stone Ages through Pleistocene and Holocene times. Late Iron Age inhabitation is not as yet well documented (Morris & Seliane 2008). Of note in the area near Limeacres rock engraving sites on dolomite exposures outside the town and at Danielskuil. Known rock engraving sites are recorded on the properties Ouplaas, Boplaas, Klipvlei and Carter Block (Wilman 1933; Morris 2009; Morris 2014; McGregor Museum records).

Further afield are the major sites Wonderwerk Cave, Tsantsabane (Blinkklipkop) at Postmasburg, a suite of sites around sink-hole depressions and raw material sources at Kathu (Wilman 1933; Humphreys & Thackeray 1983; Beaumont & Morris 1990; Morris & Beaumont 2004; Wilkins & Chazan 2012; McGregor Museum records). The Ghaap Escarpment south east of the study site contains shelters rich in archaeological traces (Humphreys & Thackeray 1984) but is perhaps most notable for its fossil sites such as that at which the Taung Skull was found, at Buxton (Beaumont & Morris 1990).

Historical events relating to the conquest of the Southern Tswana unfolded mainly to the east and north-east, e.g. at Phokwane, Koning, Dithakong, and to the north-west, e.g. Langeberg and the Kathu region (Shillington 1985). Colonial settlement followed conquest, while mining has burgeoned since the mid-twentieth century.

Some areas are richer than others, and not all sites are equally significant. Heritage impact assessments are a means to facilitate development while ensuring that what should be conserved is saved from destruction, or adequately mitigated and/or managed.

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 Boŝwa jwa Kapa Bokone). Although unlikely in this instance, there may be some that could require preservation in situ and hence modification of intended placement of intended prospecting/mining.

Destructive impacts that are possible in terms of heritage resources would tend to be direct, once-off events occurring during prospecting/mining. 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.

3. METHODOLOGY

The area proposed for prospecting was partially inspected on foot on 15-17 May 2019. Access could not be gained to some of the properties due to gates being locked, overgrown vegetation, mines and no entry signs. Where possible an assessment was made of the significance of heritage traces present.

3.1 Assumptions and Limitations

The areas for proposed impact stretches from the railway to farms, mines and various previously zoned areas, which made some areas inaccessible due to stringent and strenuous access policies.

It was assumed that, by and large in this landscape, with its shallow soil profiles, and erosional regime over much of the terrain that some sense of the archaeological traces to be found in the area would be readily apparent from surface observations (including assessment of places of erosion or past excavations that expose erstwhile below-surface

features). It was not considered necessary to conduct excavations as part of the EIA to establish the potential of sub-surface archaeology.

A proviso is routinely given, that should sites or features of significance be encountered during construction (this could include an unmarked burial, an ostrich eggshell water flask cache, or a high density of stone tools, for instance), specified steps are necessary (cease work, report to heritage authority).

With regard to fossils, a preliminary assessment of the likelihood of their occurring here should be obtained from a palaeontologist; this report does not address palaeontology.

4. OBSERVATIONS AND ASSESSMENT OF IMPACTS

The manner in which archaeological and other heritage traces or values might be affected by proposed Upgrade of the Vaal-Gamagara Regional Water Supply Scheme phase 2 may be summed up in the following terms: it would be any act or activity that would result immediately or in the future in the destruction, damage, excavation, alteration, removal or collection from its original position, any archaeological material or object (as indicated in the National Heritage Resources Act (No 25 of 1999)).

The expected impact in this instance would be area disturbances in already disturbed vicinity.

4.1 Fieldwork observations

The area for the new proposed pipeline was visited from the 15-17 May 2019. The assessment was done over a period of three days due to its extent and various employees from Sedibeng water assisted us in areas that fall under their plant/station.

4.1.1 Occurrence of Stone Age traces:

Most of the area traversed during the survey, was found to have minimal traces of in-situ archaeological materials, the observations that were made will be presented here as provisional and generalized, with specific observations limited to just a few points that could be established.

Table1: Plotted artefact scatters and observations made.

	Latitude (S)	Longitude (E)	Comment	Significance
1	28°24’27.4”	24°16’15.2”	Plant where water is drawn from the Vaal-River	LOW
2	28°23’36.2”	24°16’11.5”	Turn pipe near open valve	LOW
3	28°23’35.8”	24°16’11.9”	Graves near turn pipe	HIGH
4	28°23’34.8”	24°16’13.2”	Isolated flake	LOW
5	28°23’33.2”	24°16’12.2”	Widely dispersed Pleistocene flakes exposed surface slope.	LOW
6	28°23’31.1”	24°16’08.6”	Isolated large flake	LOW
7	28°23’28.4”	24°16’06.4”	Isolated flake near disturbed calcrete area	LOW
8	28°23’28.6”	24°16’04.5”	Quartzite flakes on exposed roadway	LOW
9	28°23’21.5”	24°16’04.6”	Flakes and cores	LOW
10	28°23’20.5”	24°16’03.4”	Chert, quartzite and jaspilite flakes. Flakes are found every few feet near exposed road.	LOW
11	28°23’16.5”	24°16’01.2”	MSA dispersed flakes	LOW
12	28°21’42.1”	24°14’35.1”	Quartzite flakes surface scatter	LOW
13	28°19’51.9”	24°13’56.9”	Surface scatter of artefacts	LOW
14	28°19’26.6”	24°14’04.5”	Surface scatter of artefacts on surface exposure	LOW
15	28°19’21.9”	24°14’01.1”	Dense vegetation no access	LOW
16	28°18’19.1”	24°09’11.5”	Artefacts observed in gravel that was brought in	LOW
17	28°14’44.5”	24°01’45.3”	Pipeline crosses into farm and runs along railway	LOW
18	28°20’24.4”	23°24’08.8”	Farmhouse	LOW
19	28°20’26.3”	24°14’27.7”	Split from railway to reservoir	LOW
20	28°20’26.1”	23°24’28.0”	Clifton Reservoir high concentration of banded iron stone and flakes found every 5 feet	MEDIUM
21	28°20’25.0”	23°24’27.0”	Dense Pleistocene surface scatter	MEDIUM
22	28°20’17.6”	23°24’22.5”	Pile of Banded Iron Stone found near old pipeline outlet with dispersed flake scatter	LOW
23	28°19’52.8”	23°34’15.2”	Farm	LOW
24	28°22’28”	24°41’12.1”	Quartzite flakes surface scatter	LOW
25	28°22’28.9”	23°41’12.1”	Subsurface artefact exposure	LOW
26	28°22’26.4”	23°41’13.6”	Holocene low density surface scatter	LOW
27	28°22’26.0”	23°41’11.7”	Flakes	LOW
28	28°20’29.7”	23°35’31.7”	Flakes surface scatter	LOW
29	28°20’02.9”	23°36’45.4”	No access gates locked	LOW
30	28°19’09.6”	23°34’10.4”	Lovren’s Water	LOW
31	28°20’12.9”	23°24’22.4”	Dense vegetation	
32	28°20’12.9”	23°24’22.4”	Wildlife Farm –no access	
33	28°20’16.20”	22°24’07.2”	From Solar Panel Farm straight to bridge that follows tar road	
34	28°19’47.4”	23°23’00.7”	De Klerk Farm	LOW
35	28°17’45.3”	23°18’55.1”	Groenwater residential area	LOW

36	28°17'37.8"	24°19'26.4"	River pebbles	LOW
37	28°17'34.0"	23°19'56.7"	Geological disturbance	LOW
38	28°17'30.6"	23°20'26.3"	Cemetery (just outside footprint area)	HIGH
39	28°17'33.5"	23°20'26.9"	Possible Fauresmith flake found near what looks like mine trench	LOW
40	28°17'14.5"	23°19'05.0"	Flakes in high concentration but isolated to this area	MEDIUM
41	28°17'59.0"	23°17'59.0"	Flakes predominant in sandy area that contains less rocks.	LOW
42	28°18'05.5"	23°17'26.1"	Rock piles	LOW
43	28°18'17.3"	23°16'32.8"	Dense vegetation	
44	28°19'56.4"	23°08'14.7"	Flakes	LOW
45	28°19'35.6"	23°04'43.1"	Surface scatter along river valley	LOW
46	28°12'01.3"	23°04'53.6"	Iron ore mine	LOW
47	28°06'21.8"	23°04'21.1"	Paleo-exposures	
48	28°04'42.2"	23°04'04.1"	Boskop Mine	LOW
49	28°02'01.6"	23°03'28.0"	Mine	LOW
50	27°57'33.4"	23°01'51.7"	Boskop Farm	LOW
51	27°56'1.0"	23°00'07.7"	Olifantshoek	LOW
52	27°55'42.9"	22°45'18.9"	Welgelee	LOW

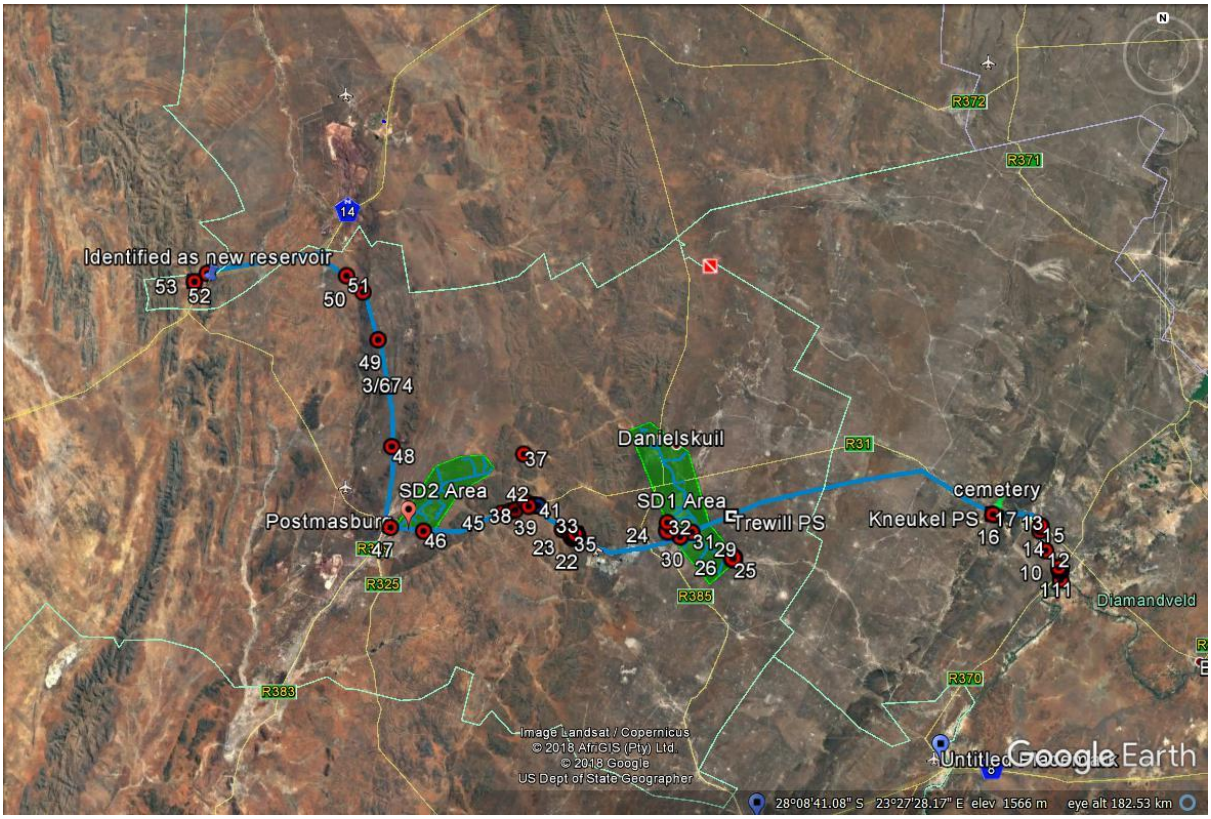

Figure 2: Plotting of archaeological observations as tabulated in Table 3.

Figure 3: Start of pipeline at the Sedibeng Water Main Reservoir

Figure 4: Graves found near turn pipe

Figure 5: Observation 5

Figure 6: Observation 10

Figure 7: Observation 12

Figure 8: Observation 20

Figure 9: Observation 26

Figure 10: Observation 40

Figure 11: Observation 45

Figure 12: Observation 47

Figure 13: New reservoir Olifantshoek

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 effect 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 all areas investigated. ***Note that some areas could not be accessed and hence this assessment is provisional.***

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	Not needed
Duration	5	Not needed
Magnitude	6	Not needed
Probability	2	Not needed
Significance	22	
Status (positive or negative)	WEAKLY NEGATIVE	But locally low to very low significance
Reversibility	No	
Irreplaceable loss of resources?	Low density and significance	Loss of context but possible to mitigate.
Can impacts be mitigated?	Not needed	Not needed
Mitigation: Not needed at this stage however, note need for monitoring in management plan recommendations, there is a probability that although		

highly unlikely in this case; artefacts occur subsurface. Other possible occurrences are burials and ostrich eggshell on pottery caches. .
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 life of the proposed development area.
Residual Impacts: -

5. MEASURES FOR INCLUSION IN THE DRAFT ENVIRONMENTAL MANAGEMENT PLAN

The objective

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

Project component/s	Any road or other infrastructure construction over and above what is outlined in respect of the proposed Prospecting area.
Potential Impact	The potential impact if this objective is not met is that wider areas or extended linear developments may result in further destruction, damage, excavation, alteration, removal or collection of heritage objects (minimal as they are) from their current context along the route..
Activity/risk source	Activities which could impact on achieving this objective include deviation from any planned development without taking heritage impacts into consideration.
Mitigation: Target/Objective	An environmental management plan that takes cognizance of heritage resources in the event of any future extensions of infrastructure. Mitigation (based on present observations and development proposal as communicated) 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	Environmental management provider with on-going monitoring role for the upgrade and for any instance of	Environmental management plan to be in place before commencement of upgrade.

any phase of development.	periodic or on-going land surface modification thereafter.	
Should unexpected finds be made (e.g. precolonial burials; ostrich eggshell container cache; or localised Stone Age sites with stone tools, pottery, ash midden with bone/pottery; military remains), the relevant Heritage Authority should be contacted.	Environmental Control Officer should report to the Heritage Authority as needed (see next column).	In the event of finding any of the features mentioned in column 1, reporting by the developer to relevant heritage authority should be immediate. Contact: SAHRA Ms N. Higgins 021-4624502 or NC Heritage Resources Authority Mr Andrew Timothy 0790369294.

Performance Indicator	Inclusion of further heritage impact consideration ahead of upgrade given that not all areas could be accessed; heritage impact consideration in all ensuing phases of activity.
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 was found to be low. It would remain possible that material of significance may occur, which is not identified and such chance finds, if encountered, should be brought to the attention of heritage authorities for further assessment and mitigation if necessary.

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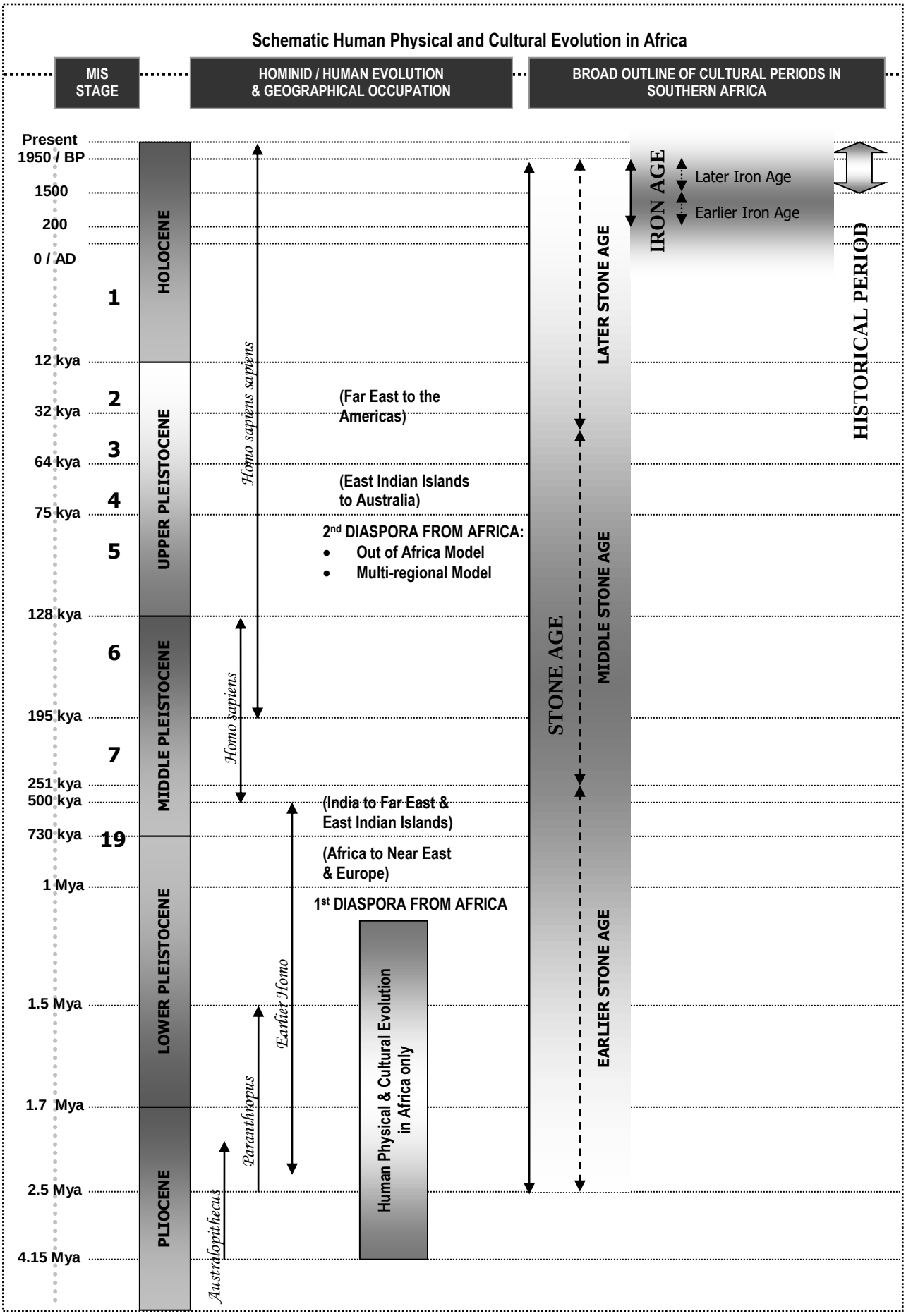
Schematic Human Physical and Cultural Evolution in Africa
MIS STAGE
HOMINID / HUMAN EVOLUTION & GEOGRAPHICAL OCCUPATION
BROAD OUTLINE OF CULTURAL PERIODS IN SOUTHERN AFRICA
Present
1950 / BP
1500
200
0 / AD
12 kya
32 kya
64 kya
75 kya
128 kya
195 kya
251 kya
500 kya
730 kya
1 Mya
1.5 Mya
1.7 Mya
2.5 Mya
4.15 Mya
1
2
3
4
5
6
7
19
HOLOCENE
UPPER PLEISTOCENE
MIDDLE PLEISTOCENE
LOWER PLEISTOCENE
PLIOCENE
Homo sapiens sapiens
Homo sapiens
Earlier Homo
Paranthropus
Australopithecus
(Far East to the Americas)
(East Indian Islands to Australia)
2nd DIASPORA FROM AFRICA:
Out of Africa Model
Multi-regional Model
(India to Far East & East Indian Islands)
(Africa to Near East & Europe)
1st DIASPORA FROM AFRICA
Human Physical & Cultural Evolution in Africa only
STONE AGE
LATER STONE AGE
MIDDLE STONE AGE
EARLIER STONE AGE
IRON AGE
Later Iron Age
Earlier Iron Age
HISTORICAL PERIOD

Extracts from the

National Heritage Resources Act (No 25 of 1999)

DEFINITIONS
Section 2

In this Act, unless the context requires otherwise:

ii. "*Archaeological*" means –
   a) material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
   b) rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10 m of such representation;
   c) wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the Republic,… and any cargo, debris, or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation.

viii. "*Development*" means any physical intervention, excavation or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including –
   a) construction, alteration, demolition, removal or change of use of a place or structure at a place;
   b) carrying out any works on or over or under a place;
   c) subdivision or consolidation of land comprising, a place, including the structures or airspace of a place;
   d) constructing or putting up for display signs or hoardings;
   e) any change to the natural or existing condition or topography of land; and
   f) any removal or destruction of trees, or removal of vegetation or topsoil;

xiii. "*Grave*" means a place of interment and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place;

xxi. "*Living heritage*" means the intangible aspects of inherited culture, and may include –
   a) cultural tradition;
   b) oral history;
   c) performance;
   d) ritual;
   e) popular memory;
   f) skills and techniques;
   g) indigenous knowledge systems; and
   h) the holistic approach to nature, society and social relationships.

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 trance;

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, PALAEONTOLOGY AND METEORITES
Section 35

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

BURIAL GROUNDS AND GRAVES
Section 36

3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority –
a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
c) bring onto or use at a burial ground or grave referred to in paragraph a) or b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

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

HERITAGE RESOURCES MANAGEMENT
Section 38

1) Subject to the provisions of subsections 7), 8) and 9), any person who intends to undertake a development categorised as –
   a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
   b) the construction of a bridge or similar structure exceeding 50 m in length;
   c) any development or other activity which will change the character of a site –
      i. exceeding 5 000 m² in extent; or
      ii. involving three or more existing erven or subdivisions thereof; or
      iii. involving three or more erven or subdivisions thereof which have been consolidated within the past five years; or
      iv. the costs which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
   d) the rezoning of a site exceeding 10 000 m² in extent; or
   e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,

   must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.
2) The responsible heritage resources authority must, within 14 days of receipt of a notification in terms of subsection 1) –
   a) if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report. Such report must be compiled at the cost of the person proposing the development, by a person or persons approved by the responsible heritage resources authority with relevant qualifications and experience and professional standing in heritage resources management; or
   b) notify the person concerned that this section does not apply.
3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection 2a) …
4) The report must be considered timeously by the responsible heritage resources authority which must, after consultation with the person proposing the development decide –
   a) whether or not the development may proceed;
   b) any limitations or conditions to be applied to the development;
   c) what general protections in terms of this Act apply, and what formal protections may be applied, to such heritage resources;
   d) whether compensatory action is required in respect of any heritage resources damaged or destroyed as a result of the development; and

e) whether the appointment of specialists is required as a condition of approval of the proposal.

APPOINTMENT AND POWERS OF HERITAGE INSPECTORS
Section 50

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

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.