HERITAGE SURVEY OF THE PROPOSED MCWASA DAM, WILD COAST, EASTERN CAPE

FOR AURECON SOUTH AFRICA (PTY) LTD

DATE: APRIL 2009

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INTRODUCTION

Umlando cc was contracted by Aurecon South Africa (Pty) Ltd to undertake a heritage survey of the proposed Mcwasa Dam, Wild Coast, Eastern Cape. The dam forms part of the water distribution of the direct area. This survey was undertaken in April 2009.

There are two impacts related to the development:

1. The area above the dam where the water treatment buildings will occur; and,
2. The area to be flooded by the dam

The dam is located approx. 57km southeast of Umtata, 20km southwest of Coffee Bay, and 5k from the ocean (fig. 1). Most of the land has been used for subsistence agriculture over the last ~60 years to the present. The vegetation is mostly secondary grasses and coastal bush and forest. The Ecca and Beaufort Formations occur in the affected area.

The affected area appears to have been utilised by subsistence agriculturalists only over the last century, especially the latter half of the 20th century. That is, there is little evidence to indicate a long term agricultural inhabitation as in other areas near the coast. This would probably change as one approaches the coast.

A total of nine heritage sites were recorded during the survey. These range from low to high significance, and include human remains. Most of the sites date to the last approximate 60 years, while others date to the Middle Stone Age.

The aim of the survey is to identify and assess heritage sites and issues and forward a management plan. This management plan would be initiated in the next heritage phase of the project.

METHOD

The method for Heritage assessment consists of several steps.

The first step forms part of the desktop assessment. Here we would consult the databases from Umlando and the local aerial photographs. The database does; however, tend to be restricted to archaeological and palaeontological sites. Aerial photographs are used to locate existing structures regardless of their condition. Consulting with the relevant authorities will also cover known battlefields and historical sites. We also consult with an historical architect, palaeontologist, and an historian where necessary.

The initial archaeological survey (i.e. fieldwork) consists of a foot survey where the selected area was covered. The survey results will define the significance of each recorded site, as well as a management plan. The main problem with the survey was the poor archaeological visibility. All abandoned buildings were considered as heritage resources.

All sites are grouped according to low, medium and high significance for the purpose of this report. Sites of low significance have no diagnostic artefacts, especially pottery. Sites of medium significance have diagnostic artefacts and these are sampled. Sampling includes the collection of artefacts for future analysis. All diagnostic pottery, such as rims, lips and decorated sherds are sampled, while bone, stone and shell are mostly noted. Sampling usually occurs on most sites. Sites of high significance are excavated and/or extensively sampled. Those sites that are extensively sampled have high research potential, yet poor preservation of features. We attempt to recover as many artefacts from these sites by means of systematic sampling, as opposed to sampling diagnostic artefacts only.

Defining significance

Archaeological sites vary according to significance and several different criteria relate to each type of site. However, there are several criteria that allow for a general significance rating of archaeological sites.

These criteria are:

1. **State of preservation of:**
   - 1.1. Organic remains:
     - 1.1.1. Faunal
     - 1.1.2. Botanical
   - 1.2. Rock art
   - 1.3. Walling
   - 1.4. Presence of a cultural deposit
   - 1.5. Features:
     - 1.5.1. Ash Features
     - 1.5.2. Graves
     - 1.5.3. Middens
     - 1.5.4. Cattle byres
     - 1.5.5. Bedding and ash complexes
2. **Spatial arrangements:**
   - 2.1. Internal housing arrangements
   - 2.2. Intra-site settlement patterns
   - 2.3. Inter-site settlement patterns

3. **Features of the site:**
   - 3.1. Are there any unusual, unique or rare artefacts or images at the site?
   - 3.2. Is it a type site?
   - 3.3. Does the site have a very good example of a specific time period, feature, or artefact?

4. **Research:**
   4.1. Providing information on current research projects
   4.2. Salvaging information for potential future research projects
5. **Inter- and intra-site variability**
   5.1. Can this particular site yield information regarding intra-site variability, i.e. spatial relationships between various features and artefacts?
   5.2. Can this particular site yield information about a community's social relationships within itself, or between other communities?
6. **Archaeological Experience:**
   6.1. The personal experience and expertise of the CRM practitioner should not be ignored. Experience can indicate sites that have potentially significant aspects, but need to be tested prior to any conclusions.
7. **Educational:**
   7.1. Does the site have the potential to be used as an educational instrument?
   7.2. Does the site have the potential to become a tourist attraction?
   7.3. The educational value of a site can only be fully determined after initial test-pit excavations and/or full excavations.
8. **Other Heritage Significance:**
   8.1. Palaeontological sites
   8.2. Historical buildings
   8.3. Battlefields and general Anglo-Zulu and Anglo-Boer sites
   8.4. Graves and/or community cemeteries
   8.5. Living Heritage Sites
   8.6. Cultural Landscapes, that includes old trees, hills, mountains, rivers, etc related to cultural or historical experiences.

FIG. 1: LOCATION OF THE PROPOSED MCWASA DAM

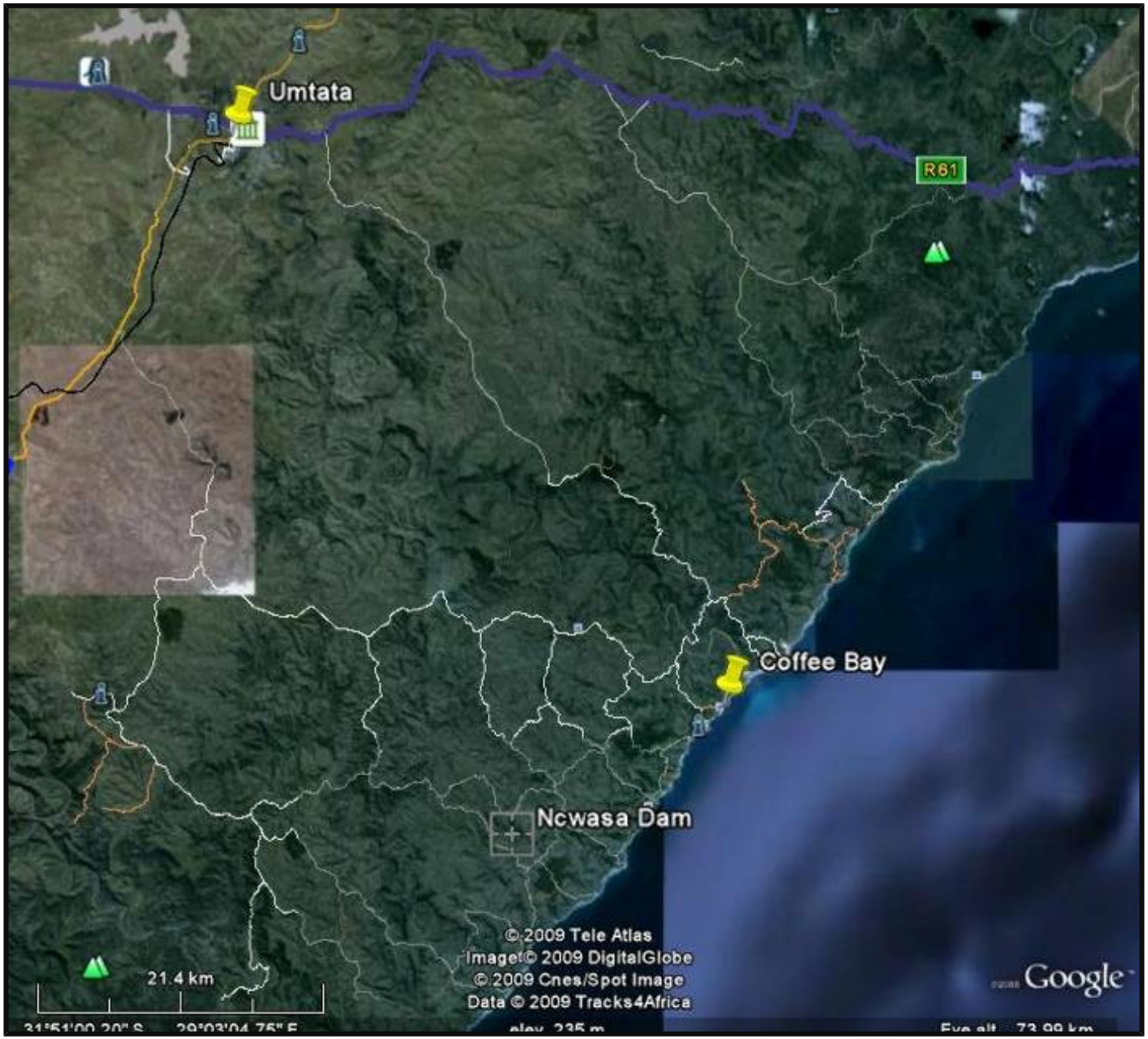


FIG. 2: LOCATION OF 100 YEAR FLOOD LEVEL AND WATER WORKS[1]

[1] Waterworks in blue; approx. 100 year flood level in yellow

The more a site can fulfill the above criteria, the more significant it becomes. Test-pit excavations are used to test the full potential of an archaeological deposit. This occurs in Phase 2. These test-pit excavations may require further excavations if the site is of significance (Phase 3). Sites may also be mapped and/or have artefacts sampled as a form of mitigation. Sampling normally occurs when the artefacts may be good examples of their type, but are not in a primary archaeological context. Mapping records the spatial relationship between features and artefacts.

RESULTS

Nine sites were recorded during the survey. These vary from Middle Stone Age scatters to more recent historical settlements and graves. The site records are in Appendix A.

MCW1

The site is located on the soccer field, near the future waterworks. The site consists of a scatter of Middle Stone Age (MSA) flakes. The shale and mudstone layers occur near the surface and would need to be assessed by a palaeontologist

Significance: The Stone Age material is of low significance, however the palaeontological material may be of significance.

Mitigation: No further mitigation is required for the MSA aspect; however, the area should be assessed by a palaeontologist.

MCW2

The site consists of three recent (modern historical) house foundations. Below this house is a long dolerite stone wall (or boundary wall) and a recently abandoned house (see fig. 4). The site is probably just above the 100 year flood line.

Significance: The site is of low significance

Mitigation: No further mitigation is required.

MCW3

The site consists of an ephemeral scatter of MSA stone tools exposed by presumed geological testing boreholes. These tools are in a secondary context. Slightly uphill from the flakes are two existing huts with a kraal. A grave occurs ~30m to the southeast of the house. The grave is a mound of sand and has two hard wooden (Sneeze wood?) poles beside it.

Significance: The grave is of high significance, while the rest of the site is of low significance.

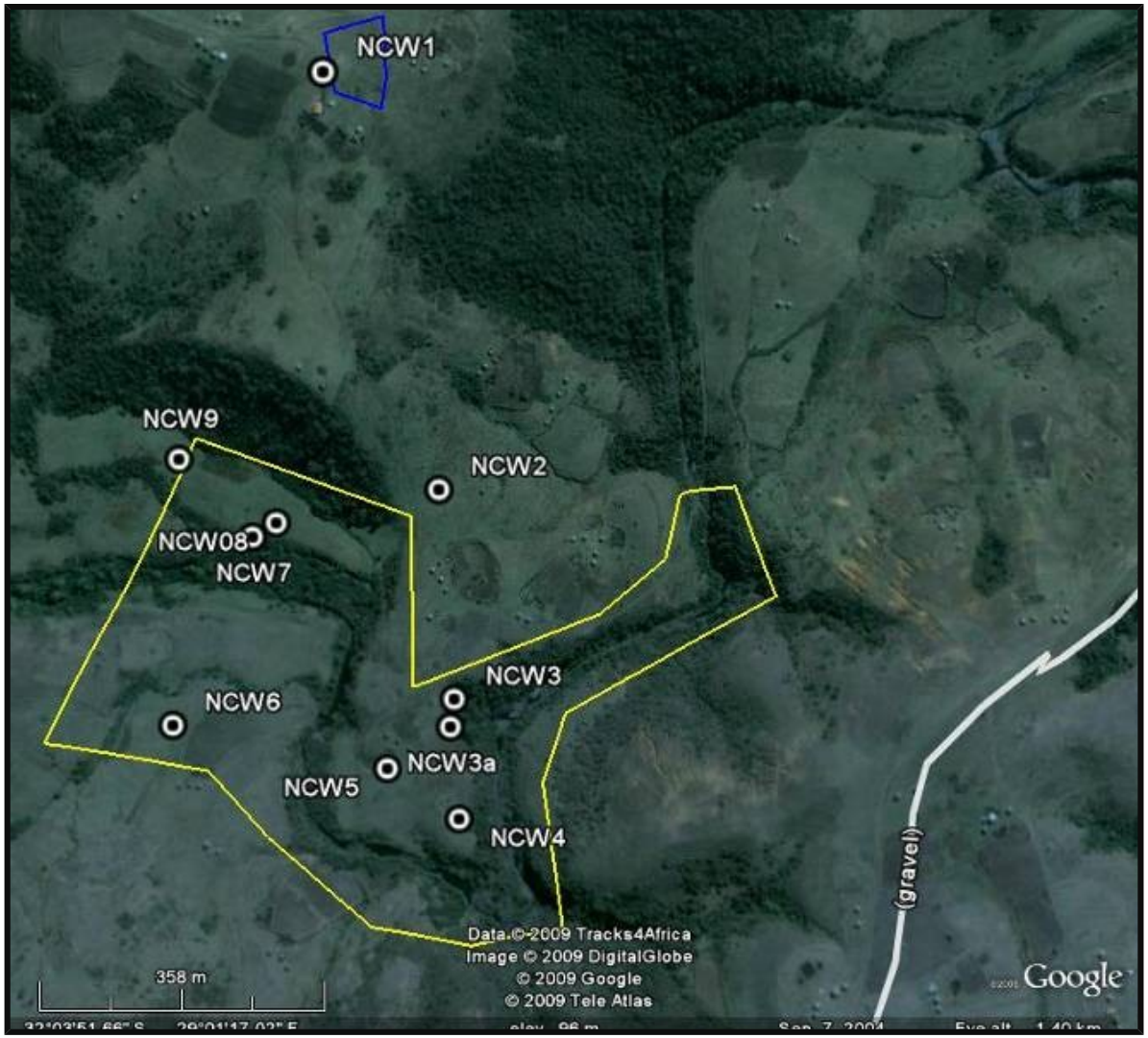
Mitigation: The graves are on the edge of the 100 year flood line and human remains should be re-allocated. Since the graves are probably younger than 60 years they are not protected by SAHRA legislation and a local undertaker would be able to exhume the remains. Several permits from various government organisations are required for the exhumation.

MCW4

The site is located on a small spur overlooking the river. Site consists of one grave and a possible grave adjacent to a cleared area. There are four recent historical huts ~20m northwest of the graves.

Significance: The grave (and possible grave) is of high significance, while the rest of the site is of low significance.

FIG. 3: LOCATION OF RECORDED SITES IN THE STUDY AREA[2]



[2] The Google Earth map places the sites ~50-100m away from the GPS reading

FIG. 4: RECENT HISTORICAL HOUSE AND WALLING

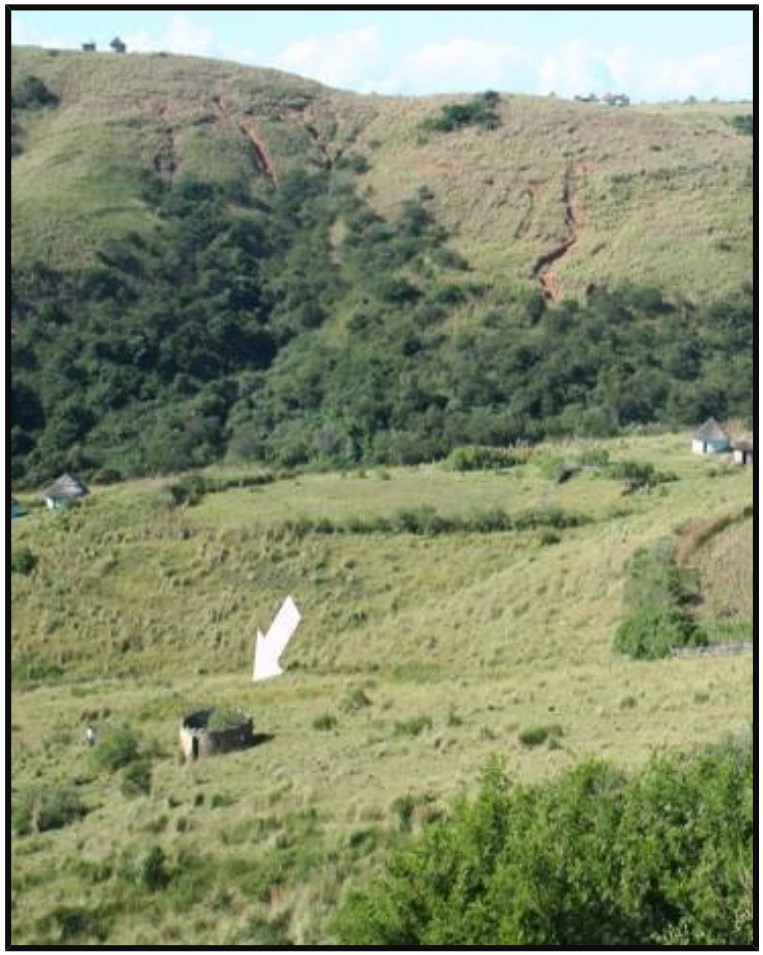


FIG. 5: GRAVE AT MCW3

FIG. 6: HOUSE REMAINS AT MCW9

Mitigation: The graves are on the edge of the 100 year flood line and human remains should be re-allocated. Since the graves are probably younger than 60 years they are not protected by SAHRA legislation and a local undertaker would be able to exhume the remains. Several permits from various government organisations are required for the exhumation. If the social consultation does not locate the family of the either graves, then the possible grave will need to be exhumed as if it was a grave. The relative age of the graves are probably similar to those at MCW3.

MCW5

The site consists of the foundations of a square and a circular kraal.

Significance: The site is of low significance

Mitigation: No further mitigation is required.

MCW6

The site consists of the remains of an old homestead.

Significance: The site is of low significance

Mitigation: No further mitigation is required.

NCW7

Site consists of an ephemeral scatter of MSA stone tools, house foundations and some brick walling. The house foundations, especially the brickwork, is probably more recent. There is a possible grave near the brick walling.

Significance: The site is of low significance, except for the possible grave that is of high significance.

Mitigation: If the social consultation does not locate the family of the grave, then the possible grave will need to be exhumed as if it was a grave. This exhumation should locate human remains if the exist.

MCW8

The site is located on a hill between two rivers. It consists of a low rectangular wall, three house foundations and a stone plinth. Where the low walls meet at in the southern corner, is a mound of stone. I originally thought it might be a grave; however, it does not fit the pattern of grave 'styles' for the area. I surveyed the area for graves but did not locate any.

Significance: The site is of low significance

Mitigation: No further mitigation is required.

MCW9

Site consists of three house foundations on a small hill, next to a thicket (fig. 6). The site may be related to MCW8 in that MCW8 is the kraal area while MCW9 is the domestic area.

Significance: The site is of low significance

Mitigation: No further mitigation is required.

MANAGEMENT PLAN

Most of the recorded sites appear to be younger than 60 years and are thus not protected by the National Heritage Act. The Middle Stone Age sites are protected by this Act and the dam will be flooding, and thus damaging/destroying the sites. A permit from SAHRA will be required to flood these sites. The MSA sites are all in secondary contexts and are standard MSA tools.

The human graves require special treatment. While the graves are probably just above the 100 year flood level, they will be affected by the dam. The dam will increase the moisture in the soil and substrates and thus increase the decomposition of the physical remains. I suggest that they are exhumed and removed to an area agreed upon by the living descendents. The social consultation and exhumation can be undertaken by a qualified undertaker. Part of the social consultation must obtain a date of burial (normally obtained on the death certificate). If any of the graves are older than 60 years, then SAHRA needs to give final permission for their removal, and a qualified archaeologist will need to be on site during their removal.

There are two areas of palaeontological sensitivity: the water works buildings on the top of the hill, and the area by the dam wall. These may need to be assessed by a palaeontologist (see Appendix B for desktop report)

While the survey attempted to locate as many sites as possible, the vegetation was dense ins some areas. This would have made observing and recording human graves a bit more difficult. All mounds of sand, as described in the results section, should be treated as potential human graves. That is mounds of sand and/or stones in a ‘rectangular’ shape: about 2m in length and 1m in width. The social consultation should also be able to locate human graves. Since the area is close to the sea, any remains of marine shells should also be reported immediately. These remains may be isolated cases, or more likely, in a rubbish dump.

CONCLUSION

A heritage survey of the proposed Mcwasa Dam was undertaken in April 2009. A total of nine heritage sites were recorded, however most of these are of low significance and require no further mitigation. Potentially five human graves were observed during the survey and these graves will need to be exhumed and the contents removed. The graves, as with the recent historical houses, are probably younger than 60 years.

I do have one concern relating to the general area, and not specifically the Mcwasa Dam. The Dept. of Transport has commissioned several roads in the area to be upgraded. The road upgrades use local material from borrow pits and quarries. These contain potential palaeontological sites that have not been assessed as far as I have been informed. I am unsure of the status of heritage impact assessments for these roads as well. SAHRA should investigate this matter further.

APPENDIX A

SITE RECORD FORMS

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM.

SITE CATEGORY: (X where applicable)
Stone Age: x
Early Iron Age:
Late Iron Age
Historical Period:

Recorder's Site No.: MCW 1
Official Name:
Local Name: Mcwasa
GPS reading: S: 32 03'33.5'' E: 29 01' 05.0'' Alt: 183m

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION.

See GPS. The area was devoid of road names/ numbers. The site, however, is currently a soccer field, near the future waterworks.

SITE DESCRIPTION:
Type of Site: Surface
Merits conservation: No
Threats: Yes
What threats: Mcwasa Dam

RECORDING:
Graphic record: Yes Digital pictures: x
Recorder/Informant: Name: Gavin Anderson and Kevin Cole
Address: PO Box 102532, Meerensee, 3901
Date: 14 April 2009
Owner: State
References:

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.
Site consists of a MSA scatter.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM.

SITE CATEGORY: (X where applicable)

Stone Age

Early Iron Age:

Late Iron Age

Historical Period: x

Recorder's Site No.: MCW 2

Official Name: State Land

Local Name: Mcwasa

GPS Reading: S: 32 03' 50.1'' E: 29 01' 10.1'' Alt: 116m

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION.

Site is in Dam basin See GPS.

SITE DESCRIPTION:

Type of Site: Surface, may contain deposit

Merits conservation: No

Threats: Yes

What threats: Mcwasa Dam

RECORDING:

Graphic record: Yes Digital pictures: x

Recorder/Informant: Name: Gavin Anderson and Kevin Cole

Address: PO Box 102532, Meerensee, 3901

Date:14 April 2009

Owner: StateState

References:

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.

Site consists of 3x recent (modern historical) house foundations. Just below this is a long dolerite wall and a recently abandoned house.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM.

SITE CATEGORY: (X where applicable)

Stone Age: x

Early Iron Age:

Late Iron Age

Historical Period: x

Recorder's Site No.: MCW 3

Official Name: State Land

Local Name: Mcwasa

GPS Reading: S: 32 03' 59.0'' E: 29 01' 10.8'' Alt: 102m (grave = S: 32 04' 0.2'' E: 29 01' 10.6''

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION.

See GPS.

SITE DESCRIPTION:

Type of Site: Surface, grave and a kraal.

Merits conservation: Yes

Threats: Yes

What threats: Mcwasa Dam

RECORDING:

Graphic record: Yes Digital pictures: x

Recorder/Informant: Name: Gavin Anderson and Kevin Cole

Address: PO Box 102532, Meerensee, 3901

Date:14 April 2009

Owner: StateState

References:

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.

Site consists of an ephemeral scatter of MSA stone tools nearer to the river and 2x existing huts with a kraal and a definite grave.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM.

SITE CATEGORY: (X where applicable)

Stone Age

Early Iron Age:

Late Iron Age

Historical Period: x

Recorder's Site No.: MCW 4

Official Name: State Land

Local Name: Mcwasa

GPS Reading: S: 32 04' 04.2" E: 29 01' 11.0'' Alt: 96m

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION.

See GPS. GPS reading taken at grave.

SITE DESCRIPTION:

Type of Site: Graves

Merits conservation: Yes

Threats: Yes

What threats: Mcwasa Dam

RECORDING:

Graphic record: Yes Digital pictures: x

Recorder/Informant: Name: Gavin Anderson and Kevin Cole

Address: PO Box 102532, Meerensee, 3901

Date:14 April 2009

Owner: StateState

References:

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.

Site consists of 1x definite grave and 1x possible grave adjacent to a cleared area, near 3x recent historical huts.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM.

SITE CATEGORY: (X where applicable)

Stone Age

Early Iron Age:

Late Iron Age

Historical Period: x

Recorder's Site No.: MCW 5

Official Name: State Land

Local Name: Mcwasa

GPS Reading: S: 32 04' 02.0'' E: 29 01' 07.4'' Alt: 97m

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION.

See GPS.

SITE DESCRIPTION:

Type of Site: Kraal

Merits conservation: No

Threats: Yes

What threats: Mcwasa dam

RECORDING:

Graphic record: Yes Digital pictures: x

Recorder/Informant: Name: Gavin Anderson and Kevin Cole

Address: PO Box 102532, Meerensee, 3901

Date:14 April 2009

Owner: StateState

References:

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.

Site consists of 1x square kraal and 1x circular kraal foundations.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM.

SITE CATEGORY: (X where applicable)

Stone Age

Early Iron Age:

Late Iron Age

Historical Period: x

Recorder's Site No.: MCW 6

Official Name: State Land

Local Name: Mcwasa

GPS Reading: S: 32 04' 00.1'' E: 29 00' 56.7'' Alt: 69m

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION.

See GPS.

SITE DESCRIPTION:

Type of Site: Ruins

Merits conservation: No

Threats: Yes

What threats: Mcwasa Dam

RECORDING:

Graphic record: Yes Digital pictures: x

Recorder/Informant: Name: Gavin Anderson and Kevin Cole

Address: PO Box 102532, Meerensee, 3901

Date:14 April 2009

Owner: StateState

References:

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.

Site consists of an old homestead.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM.

SITE CATEGORY: (X where applicable)

Stone Age: x

Early Iron Age:

Late Iron Age

Historical Period: x

Recorder's Site No.: MCW 7

Official Name: State Land

Local Name: Mcwasa

GPS Reading: S: 32 03' 52.1'' E: 29 01' 00.6'' Alt: 94m

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION.

See GPS.

SITE DESCRIPTION:

Type of Site: MSA and ruins

Merits conservation: No

Threats: Yes

What threats: Mcwasa Dam

RECORDING:

Graphic record: Yes Digital pictures: x

Recorder/Informant: Name: Gavin Anderson and Kevin Cole

Address: PO Box 102532, Meerensee, 3901

Date:14 April 2009

Owner: StateState

References:

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.

Site consists of an ephemeral scatter of MSA stone tools, hut foundations and some brick walling.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM.

SITE CATEGORY: (X where applicable)

Stone Age

Early Iron Age:

Late Iron Age

Historical Period: x

Recorder's Site No.: MCW 8

Official Name: State Land

Local Name: Mcwasa

GPS Reading: S: 32 03' 51.5'' E: 29 01' 01.8'' Alt: 101m

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION.

See GPS.

SITE DESCRIPTION:

Type of Site: Walling, grave.

Merits conservation: Yes

Threats: Yes

What threats: Mcwasa Dam

RECORDING:

Graphic record: Yes Digital pictures: x

Recorder/Informant: Name: Gavin Anderson and Kevin Cole

Address: PO Box 102532, Meerensee, 3901

Date:14 April 2009

Owner: StateState

References:

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.

Site consists of a low wall, 3x hut foundations and a plinth. Where the 2x low walls meet at a 90' angle is a mound of stone. May possibly be a grave, alternatively it is a collapsed corner post.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM.

SITE CATEGORY: (X where applicable)

Stone Age

Early Iron Age:

Late Iron Age

Historical Period: x

Recorder's Site No.: MCW 9

Official Name: State Land

Local Name: Mcwasa

GPS Reading: S: 32 03' 48.4'' E: 29 00' 55.9'' Alt: 89m

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION.

See GPS.

SITE DESCRIPTION:

Type of Site: Ruins

Merits conservation: No

Threats: Yes

What threats: Mcwasa Dam

RECORDING:

Graphic record: None

Digital pictures: x

Recorder/Informant: Name: Gavin Anderson and Kevin Cole

Address: PO Box 102532, Meerensee, 3901

Date:14 April 2009

Owner: StateState

References:

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.

Site consists of 3x hut foundations on a small hill, next to a thicket.

APPENDIX B

DESKTOP REPORT FOR PALAEONTOLOGICAL SITES

Clarens Dinosaur Hunting Expeditions CC

Dr Gideon Groenewald (PhD; Nat Dip Nat Con; Pr Sci Nat Earth Scientist)

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30 April 2009

Mr Gavin Anderson
Project Archaeologist
Mcwasa Dam Development Project

Gavin

POTENTIAL PALAEONTOLOGY OF THE PROPOSED MCWASA DAM DEVELOPMENT

From the information I have of this request I was able to identify the site of the Mcwasa Dam development (Fig 1).

Fig 1. Site of the Mcwasa Dam development

From this information a desktop study indicates the following regarding possible palaeontological finds at the site.

1. **Geology**

The desk top study indicates that the development of the dam falls in an area underlain by geology ranging from Ecca Age sedimentary rocks to possibly lower Beaufort Group sediments in the higher areas. The site of the dam wall will probably be associated with a prominent Dolerite sill or dyke structure that is very prominently visible on the remote images of this region. From the information on the borrow pits provided it is also clear that extensive dolerite sill and dolerite dyke igneous rocks are abundantly present in the area. This geological setting is well-known for this part of South Africa.

It is also a known fact that several very important "trap-door" faults as well as some "horst and graben" fault structures are present in this part of the Eastern Cape. These faults can lead to displacement of younger geology to very low altitudes in the region, making it essential for any responsible developer, Public or Private, to ensure that the specific geological formation that occurs at a site is properly recorded and examined for Palaeontological content.

2. **Palaeontology and its potential importance in the this area**

2.1 Ecca Group – it is known that this group of rocks represent a deep water deposit and that the most important palaeontological information is present as "trace fossils" or the remains of the tracks of animals and plants that lived in relatively deep water environments, with an important transition to shallow water environments where the resulting rocks reveal information about the shallow water living creatures of the time.

2.2 Beaufort Group – it is well known that this group of rocks presents us with a unique opportunity to discover some of the oldest terrestrial (land-living) animals on earth. Fossils from the Lower Beaufort or Adelaide Subgroup include the formidable Gorgonopsian predators and the large plant eaters (Dicynodonts) that lived with them, albeit being their food. The site of the development falls in an area with rugged topography and might dissect all the important Lower Beaufort (Adelaide Subgroup) strata and it is possible that severe faulting in the region could have resulted in the down-faulting of younger geology such as the Triassic aged Middle Beaufort (Tarkastad Subgroup) rocks. The Tarkastad Subgroup is well-known for the Lystosaurus and related animals with the important discovery of casts of vertebrate burrows, possibly made by the Lystrosaurus animals.

2.3 Younger travertine and other geological formations – due to the uplift of this part of South Africa in more recent times, the present river systems show clear indications of very fast incision into the old flows of the river channels. In situations like this it is possible to find small remnants of more recent geological deposits with remains of related aged animals (and possibly humans) in these small outcrops of very young rock on the sides of mountains and even on the top of some of the hills in the area.

2.4 Older rocks predating the Karoo Age - It is known that much older rock formations, dating to the same age as the rocks building Table Mountain near

Cape Town, occur in the area as a result of Gondwana Faulting. These rocks do contain fossils of marine animals that lived about 450 million years ago and it is always good practise to be on the lookout for these important remains of life in the rocks of South Africa.

2.5 Dolerite Intrusions - dolerite sills and dykes are obviously not important for palaeontology and will not contain any fossils.

I trust that this information is useful for the initial phase of the study. It will obviously be necessary for a trained palaeontologist to inspect the site of the development to confirm (ground proof) these desktop survey results. It is important to ensure that the developer of this project obtains a permit from SAHRA for the disturbance of palaeontological remains during the construction phase of this project.

Thank you very much for your request.

Greetings

GIDEON GROENEWALD (PhD; Pr Sci Nat Earth Scientist)
Geologist