

**HERITAGE SURVEY OF THE PROPOSED MELKHOUT-
OYSTER BAY DISTRIBUTION LINE**

FOR COASTAL ENVIRONMENTAL SERVICES

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INTRODUCTION

Umlando cc was contracted by Coastal Environmental Services to undertake a Heritage Impact Assessment of the proposed Melkhout Distribution line. This assessment forms part of the Basic Impact Assessment. Eskom has proposed to construct a 132kV line. The line would begin from the proposed Oyster Bay station and end at the Melkhout substation; near Humansdorp (fig.'s 1 - 3). The location of the Oyster Bay substation was not finalised by the time of the survey. The original survey included the dune system, however, subsequently the route was change and it now stops hinterland of the dunes.

There are two options for the Distribution line and these are approx. 30km and 35km in length in total. Much of the Distribution line occurs over agricultural land where the soil is very thin. There are several sandstone outcrops and these forms the basis of the geology of the area.

The impacts on the area will be:

- Foundations for pylons

The survey located several heritage sites and these are of varying significance.

NATIONAL HERITAGE RESOURCES ACT OF 1999

The National Heritage Resources Act of 1999 (pp 12-14) protects a variety of heritage resources. This are resources are defined as follows:

“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).

(3) Without limiting the generality of subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of—

- (a) Its importance in the community, or pattern of South Africa's history;
- (b) Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- (c) Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (d) Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- (g) Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- (h) Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- (i) sites of significance relating to the history of slavery in South Africa"

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. These databases contain known heritage sites in southern Africa-Natal, such as monuments, memorials, battlefields and cemeteries in southern Africa. We also use 1937 aerial photographs and first edition 1:50 000 topographical maps when

available. We also consult with an historical architect, palaeontologist, and an historian where necessary.

The survey results will define the significance of each recorded site, as well as a management plan. 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 or features. Sites of medium significance have diagnostic artefacts or features and these sites tend to be 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.

Defining significance

Heritage 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.

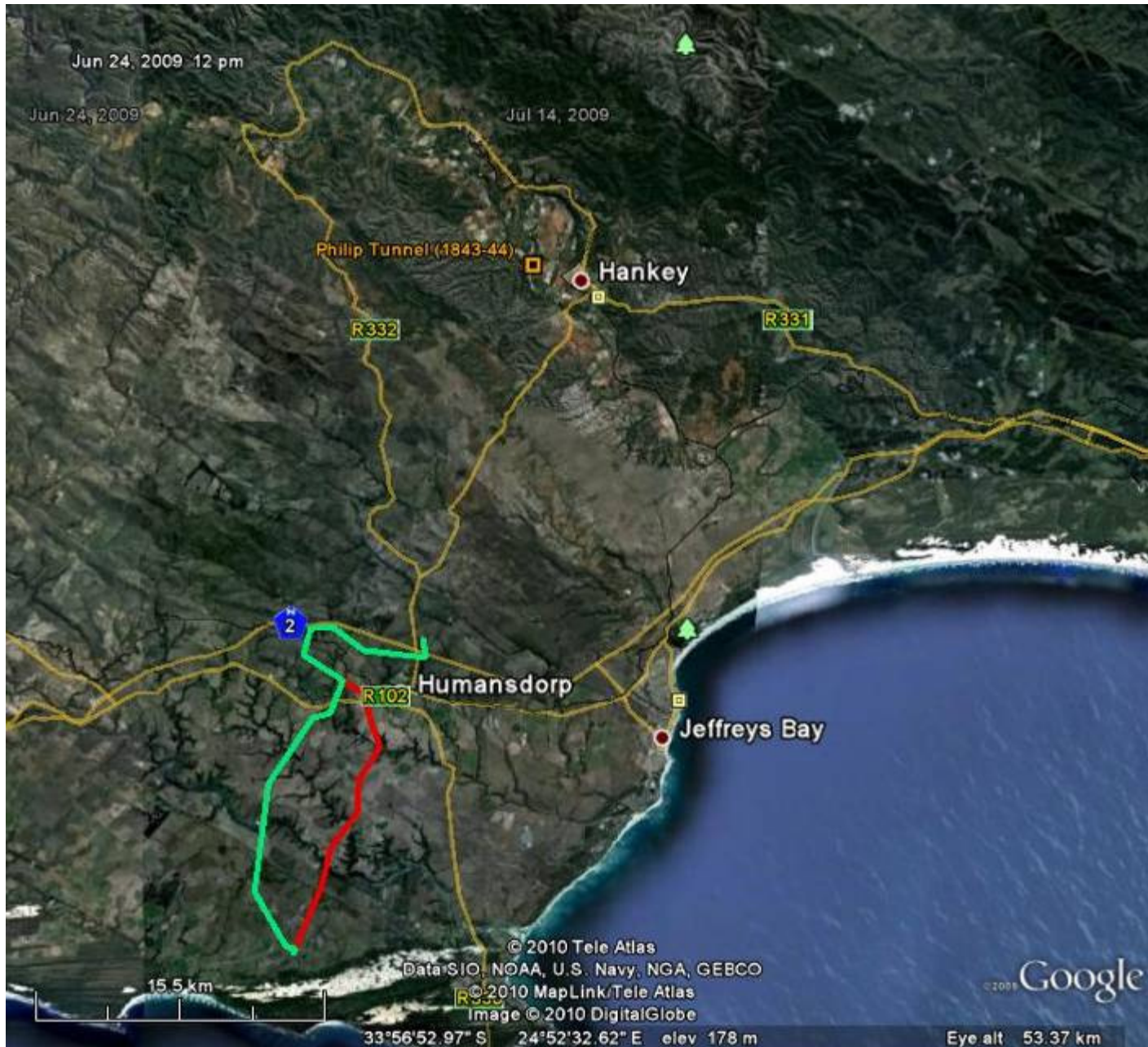
8. Other Heritage Significance:

- 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.

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.

FIG. 1 GENERAL LOCATION OF THE PROPOSED LINE¹



¹ Green = preferred route, red = alternative route

FIG. 2: AERIAL OVERVIEW OF THE PROPOSED ROUTE



FIG. 3: 1999-2000 TOPOGRAPHICAL MAP OF THE PROPOSED ROUTES

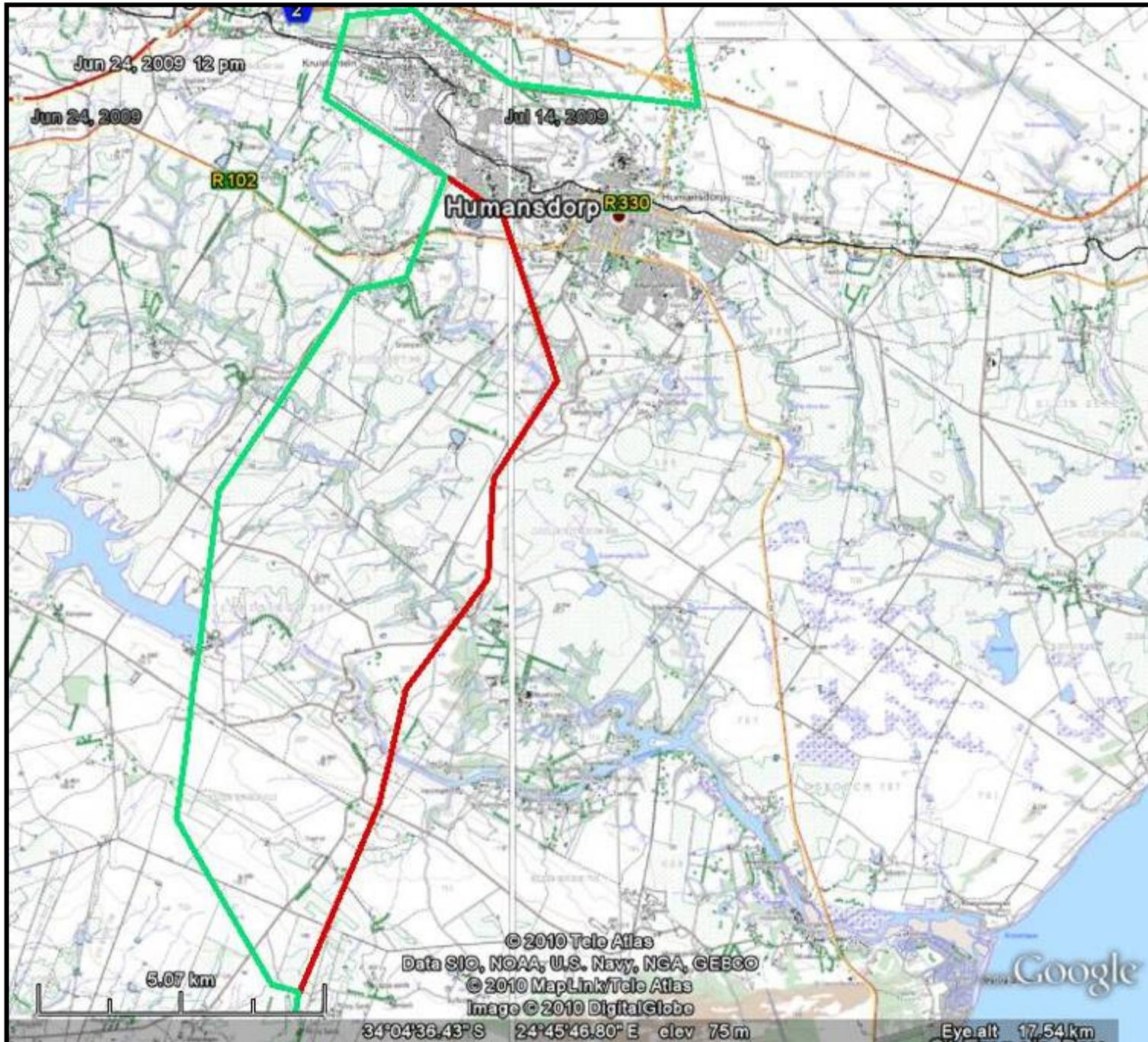
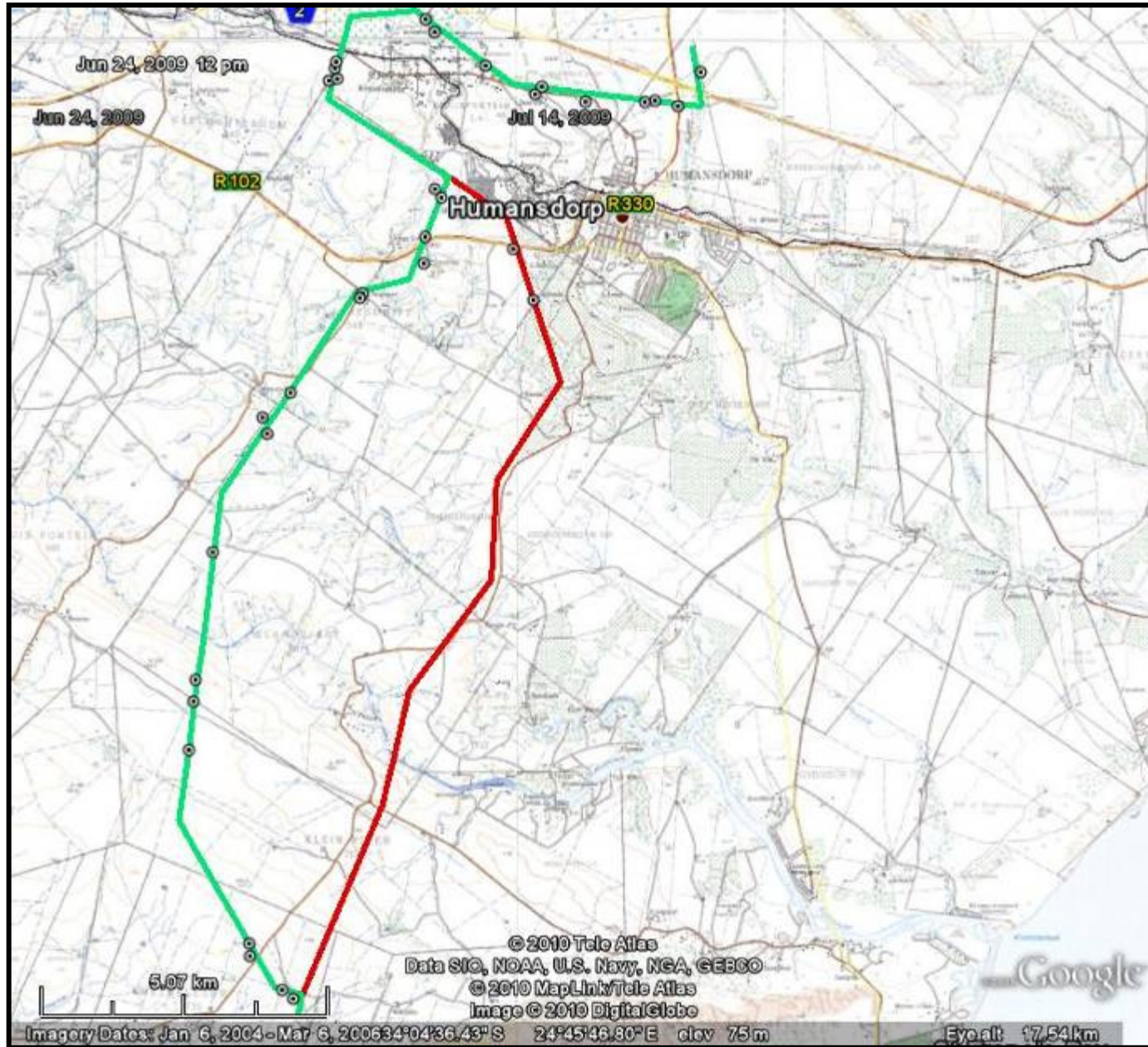


FIG. 4: 1953 & 1975 TOPOGRAPHICAL MAPS OF THE PROPOSED LINE²



² White circle = possible recent historical site

RESULTS

I used a 100m corridor for the survey, with the Distribution line in the middle of the corridor.

The desktop study indicated that several built structures existed on the 1953 and 1975 topographical maps, and on the more recent aerial photographs. These locations were noted and visited during the survey.

Figure 4 indicates the locations of structures. Most of the structures are recent in age, do not exist anymore, or are out of the corridor.

A total of seven heritage sites were observed during the course of the survey. Figures 5 – 6 indicate where these sites occur.

I observed isolated artefacts along the entire proposed route. These were not recorded unless they had some unique or special quality.

PALAEONTOLOGY

The palaeontological report is in Appendix A. The area has the potential to yield fossils of medium significance. Dr Groenewald states: “the potential for finding good examples of fossils in the small excavations needed for the installation of the pylons is moderately high... arthropods such as Trilobites as well as some bivalves and other marine fossils [will occur].”

Mitigation: A palaeontologist needs to determine where the sensitive areas are for the final routing AND be on site during the construction phase.

FIG. 5: LOCATION OF NORTHERN SITES

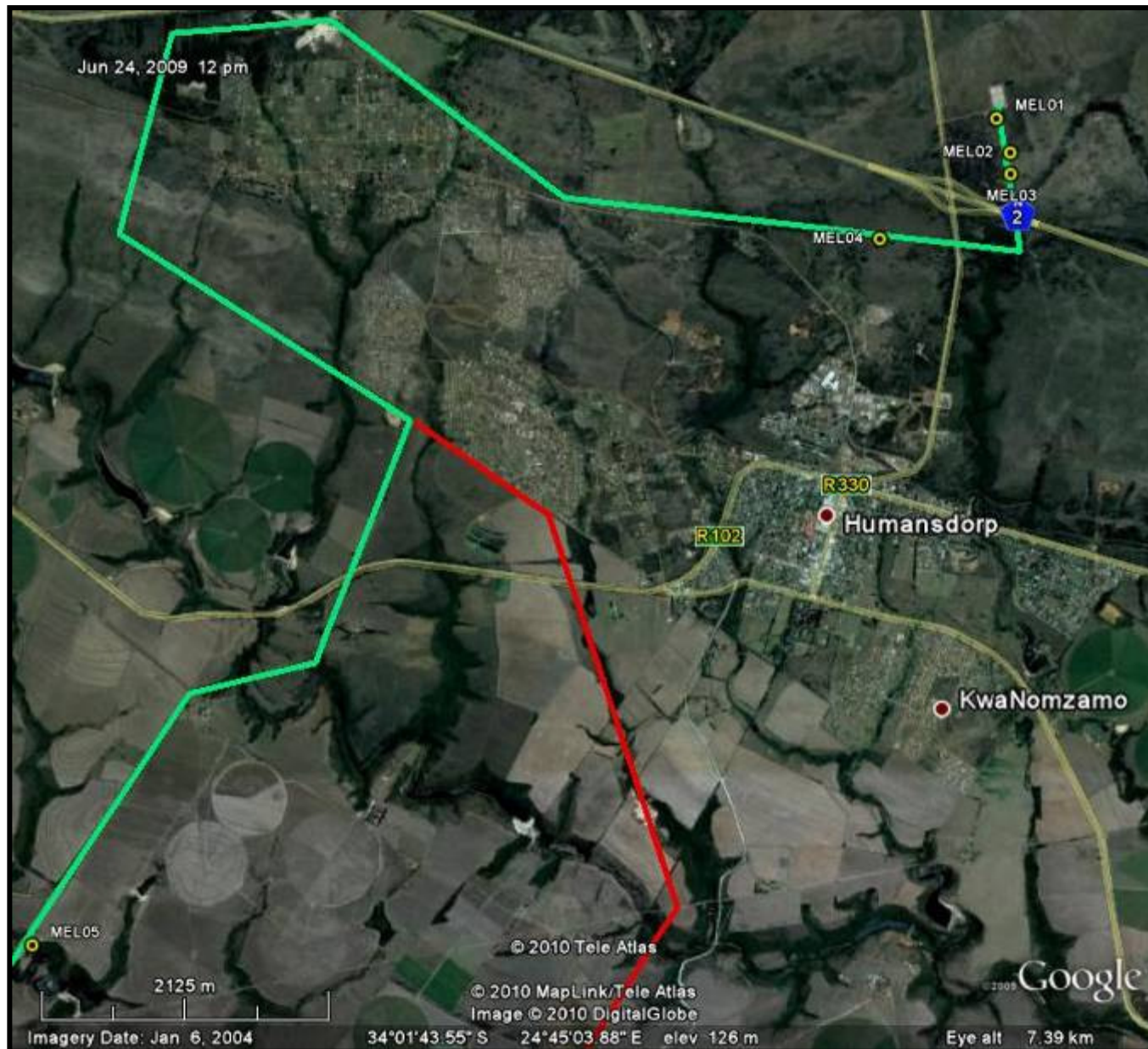
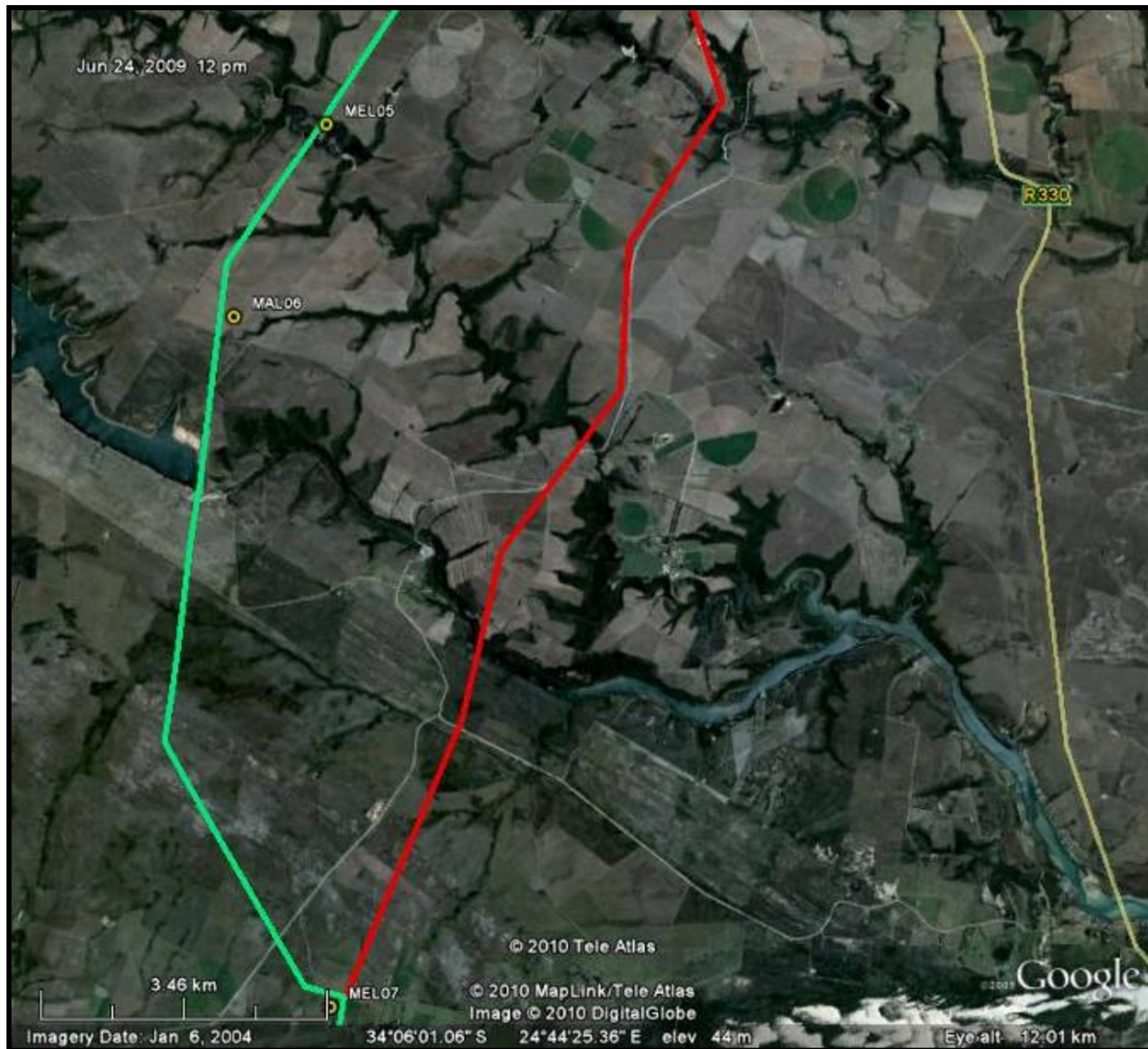


FIG. 6: LOCATION OF SOUTHERN SITES



MEL01

MEL01 is located near the Melkhout substation. The site consists of a low sandstone outcrop. The outcrop has been “quarried”: that is, several flakes have been removed from the rocks (fig. 8). Three flakes were observed on the ground.

Significance: The site is of low significance

Mitigation: No further mitigation is required.

FIG. 8: ROCK OUTCROP AT MEL01



MEL02

MEL02 is located around a small raised area ~10m in diameter (fig. 9). The mound does not appear to be natural and there is a row of stones ~30m long at the base. These stones appear to be recent. There are a few Late Stone Age flakes in the raised area, and these are probably in a secondary context.

Significance: The site is of low significance.

Mitigation: No further mitigation is required.

FIG. 9: RAISED AREA AT MEL02



MEL03

MEL03, is not a site per se, rather a single MSA flake amongst a stone cairn. The cairn is probably related to field clearance, and not a grave (fig. 10).

Significance: The site is of low significance.

Mitigation: No further mitigation is required.

FIG. 10: STONE CAIRN MEL03



MEL04

MEL04 is located near Humansdorp. The site consists of a rock outcrop that appears to have been used as a stone tool quarry. It is similar to MEL01, but much larger and extends for 200 - 300m as a ridge of rocky outcrops.

Significance: The site is of low significance

Mitigation: No further mitigation is required.

MEL05

MEL05 is located along the top of a hill. The soil is very shallow, and the sandstone layer is thus very close to the surface (fig. 7). The site consists of a small scatter of Middle Stone Age stone tools on the surface. These are flakes. These are probably in a secondary context.

Significance: The site is of low significance.

Mitigation: No further mitigation is required.

FIG.7: SHALLOW SOILS NEAR MEL05



MEL06

MEL06 is a single cleaver located on the side of the road. I recorded the single artefact, as it was the only Early Stone Age artefact that I had observed so far. This is also typical of the artefacts of the general area. That is, there tends to be many single artefacts scattered across the hills, and only become more concentrated as one moves closer to the sand dunes.

Significance: The artefact is of low significance

Mitigation: No further mitigation is required.

MEL07

MEL07 is an old farm building, probably a shed. The Distribution line, and/or substation, occur besides the building and will thus not affect the building. The substation will occur near this building

Significance: The building will need to be assessed by an architect historian if it is to be affected.

Mitigation: The building is unlikely to be affected and thus no mitigation is currently required.

FIG. 8: OLD FARM BUILDING



MANAGEMENT PLAN

All of the recorded sites are of low significance, with the possible exception of the old farmhouse. The proposed substation is currently situated across the road from this house. If this farmhouse, or any others that occur in a realigned, route, are to be affected, then it will need to be assessed by an architect historian. There should be no need to damage any of these buildings.

Eskom will need to obtain a permit From SAHRA for the partial destruction of the various sites mentioned in the report. I suggest a general permit is requested for the entire line.

A palaeontologist may be required to be on site during the excavations for the pylons.

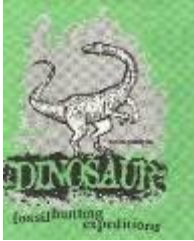
If any aspect of the Distribution line enters the dune system, then that part of the line will need to be surveyed, as this is an area of high archaeological sensitivity.

CONCLUSION

The heritage impact assessment for the Melkhout Distribution line located seven heritage sites. These sites vary in significance and require some form of mitigation. The potential for significant palaeontological sites along the route was also noted.

There are no sites along the route that would favour either alternative.

Appendix A
Palaeontological report



Clarens Dinosaur Hunting Expeditions CC

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

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9700, RSA

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Fax: +27 58 3038412
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27 September 2010

To Whom It May Concern:

Dear Gavin

POTENTIAL PALAEOLOGICAL IMPACT THYSPUNT-HUMANSDORP

Thank you for your request to comment on the potential impact of the development of a 32KV Eskom line on potential palaeontological material in that region.

Following a desktop investigation and the fact that the area between Thyspunt and Humansdorp is underlain by rock sequences of the Table Mountain Supergroup, including the Table Mountain Sandstone and Bokkeveld Shale Groups, the potential for finding good examples of fossils in the small excavations needed for the installation of the pylons is moderately high.

Trace fossils are known from the Quartzites of the Table Mountain sandstones but it is unlikely that these fossils will be recognized during this construction project.

The Bokkeveld shales are known for the presence of good examples of arthropods such as Trilobites as well as some bivalves and other marine fossils. Depending on the size of the excavations at each pylon base, the inspection of the shale by a palaeontologist might reveal some unique examples of these fossils. It will therefore be important to refer to the geological map of the area with clear indications to the contractor on where fossils can be expected and where not.

I recommend that the route of the power lines be provided and that we simply indicate potential points of interest according to the geology. Exposure of unweathered rock of the Bokkeveld shale should be noted and a palaeontologist should be requested to investigate at least some of the material to confirm the absence of presence of marine fossils in the sequence. Training of one person from the construction team, who can assist in recording possible finds, can be a good option in this project.

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

APPENDIX B
SITE RECORD FORMS

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

SITE CATEGORY: (X where applicable)

Stone Age: LSA

Early Iron Age:

Late Iron Age

Historical Period:

Recorder's Site No.: MEL01

GPS reading: S34 00 .112 E24 47.011



SITE DESCRIPTION:

Type of Site: open

Merits conservation: No

Threats: Yes

What threats: Eskom

RECORDING:

Graphic record: Yes

Digital pictures: x

Tracings :

Re-drawings:

Recorder/Informant: Name: Gavin Anderson

Address: PO Box 102532, Meerensee, 3901

Date: September 2010

Owner:

References:

Description of site and artefactual content.

MEL01 is located near the Melkhout substation. The site consists of a low sandstone outcrop. The outcrop has been "quarried": that is, several flakes have been removed from the rocks. Three flakes were observed on the ground.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

SITE CATEGORY: (X where applicable)

Stone Age: LSA

Early Iron Age:

Late Iron Age

Historical Period:

Recorder's Site No.: MEL02

GPS reading: S34 00 14.7 E24 47 04.6

SITE DESCRIPTION:

Type of Site: Open

Merits conservation: No

Threats: Yes

What threats: Eskom

RECORDING:

Graphic record: Yes

Digital pictures: x

Tracings :

Re-drawings:

Recorder/Informant: Name: Gavin Anderson

Address: PO Box 102532, Meerensee, 3901

Date: September 2010

Owner:

References:

Description of site and artefactual content.

MEL02 is located around a small raised area ~10m in diameter. The mound does not appear to be natural and there is a row of stones ~30m long at the base. These stones appear to be recent. There are a few Late Stone Age flakes in the raised area, and these are probably in a secondary context.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

SITE CATEGORY: (X where applicable)

Stone Age: LSA

Early Iron Age:

Late Iron Age

Historical Period:

Recorder's Site No.: MEL03

GPS reading: S 34 00 15.3 E24 47 07.5

SITE DESCRIPTION:

Type of Site: Open

Merits conservation: no

Threats: Yes

What threats: Eskom

RECORDING:

Graphic record: Yes

Digital pictures: x

Tracings :

Re-drawings:

Recorder/Informant: Name: Gavin Anderson

Address: PO Box 102532, Meerensee, 3901

Date: September 2010

Owner:

References:

Description of site and artefactual content.

MEL03, is not a site per se, rather a single MSA flake amongst a stone cairn. The cairn is probably related to field clearance, and not a grave.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

SITE CATEGORY: (X where applicable)

Stone Age: LSA

Early Iron Age:

Late Iron Age

Historical Period:

Recorder's Site No.: MEL04

GPS reading: S34 00.582 E24 46.462

SITE DESCRIPTION:

Type of Site: Open

Merits conservation:

Threats: Yes

What threats: Eskom

RECORDING:

Graphic record: Yes

Digital pictures: x

Tracings:

Re-drawings:

Recorder/Informant: Name: Gavin Anderson

Address: PO Box 102532, Meerensee, 3901

Date: September 2010

Owner:

References:

Description of site and artefactual content.

MEL04 is located near Humansdorp. The site consists of a rock outcrop that appears to have been used as a stone too quarry. It is similar to MEL01, but much larger and extends for 200 - 300m as a ridge of rocky outcrops.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

SITE CATEGORY: (X where applicable)

Stone Age: MSA

Early Iron Age:

Late Iron Age

Historical Period:

Recorder's Site No.: MEL05

GPS reading: S34 03.377 E24 42.411

SITE DESCRIPTION:

Type of Site: Open

Merits conservation:

Threats: Yes

What threats: Eskom

RECORDING:

Graphic record: Yes

Digital pictures: x

Tracings:

Re-drawings:

Recorder/Informant: Name: Gavin Anderson

Address: PO Box 102532, Meerensee, 3901

Date: September 2010

Owner:

References:

Description of site and artefactual content.

MEL05 is located along the top of a hill. The soil is very shallow, and the sandstone layer is thus very close to the surface (fig. 7). The site consists of a small scatter of Middle Stone Age stone tools on the surface. These are probably in a secondary context.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

SITE CATEGORY: (X where applicable)

Stone Age: ESA

Early Iron Age:

Late Iron Age

Historical Period:

Recorder's Site No.: MEL06

GPS reading: S34 04.630 E24 41.690

SITE DESCRIPTION:

Type of Site: Open

Merits conservation: No

Threats: Yes

What threats: Eskom

RECORDING:

Graphic record: Yes

Digital pictures: x

Tracings:

Re-drawings:

Recorder/Informant: Name: Gavin Anderson

Address: PO Box 102532, Meerensee, 3901

Date: September 2010

Owner:

References:

Description of site and artefactual content.

MEL06 is a single cleaver located on the side of the road. I recorded the single artefact as it was the only Early Stone Age artefact that I had observed so far. This is also typical of the artefacts of the general area. That is, there tends to be many single artefacts scattered across the hills, and only become more concentrated as one moves closer to the sand dunes.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

SITE CATEGORY: (X where applicable)

Stone Age:

Early Iron Age:

Late Iron Age

Historical Period: HP

Recorder's Site No.: MEL07

GPS reading: S34 09.032 E24 42.464

SITE DESCRIPTION:

Type of Site:

Merits conservation:

Threats: Yes

What threats:

RECORDING:

Graphic record: Yes

Digital pictures: x

Tracings:

Re-drawings:

Recorder/Informant: Name: Gavin Anderson

Address: PO Box 102532, Meerensee, 3901

Date: September 2010

Owner:

References:

Description of site and artefactual content.

MEL07 is an old farm building, probably a shed. The Distribution line occurs besides the building and will thus not affect it.