HERITAGE SURVEY OF THE PROPOSED CHABA WIND ENERGY PROJECT, THORN PARK (FARM 25), KOMGA

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 Chaba Wind Energy Project, Thorn Park (Farm 25), Komga. The windfarm is located ~6km east of Komga, and ~45km north of East London. The windfarm will be situated near the N2 (figures 1 - 4).

The current land use is for pasturage with a few small rocky outcrops. Some areas have been ploughed. It appears that there has been minimal disturbance to the land.

The wind farm will consist of 6 turbines. There are two possible layouts proposed. Each turbine is located just below the top of the hill. Other infrastructure associated with the proposed wind farm will be:

- Concrete foundations to support the wind towers,
- Approximately 3.5 meter wide internal access roads to each turbine
- Underground cables connecting each turbine to the other and to the substation ,
- A small building to house the control instrumentation and interconnection elements, as well as a storeroom for maintenance equipment.

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 most of the known heritage sites in KwaZulu-Natal, and known memorials and other protected sites, 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 WIND FARM

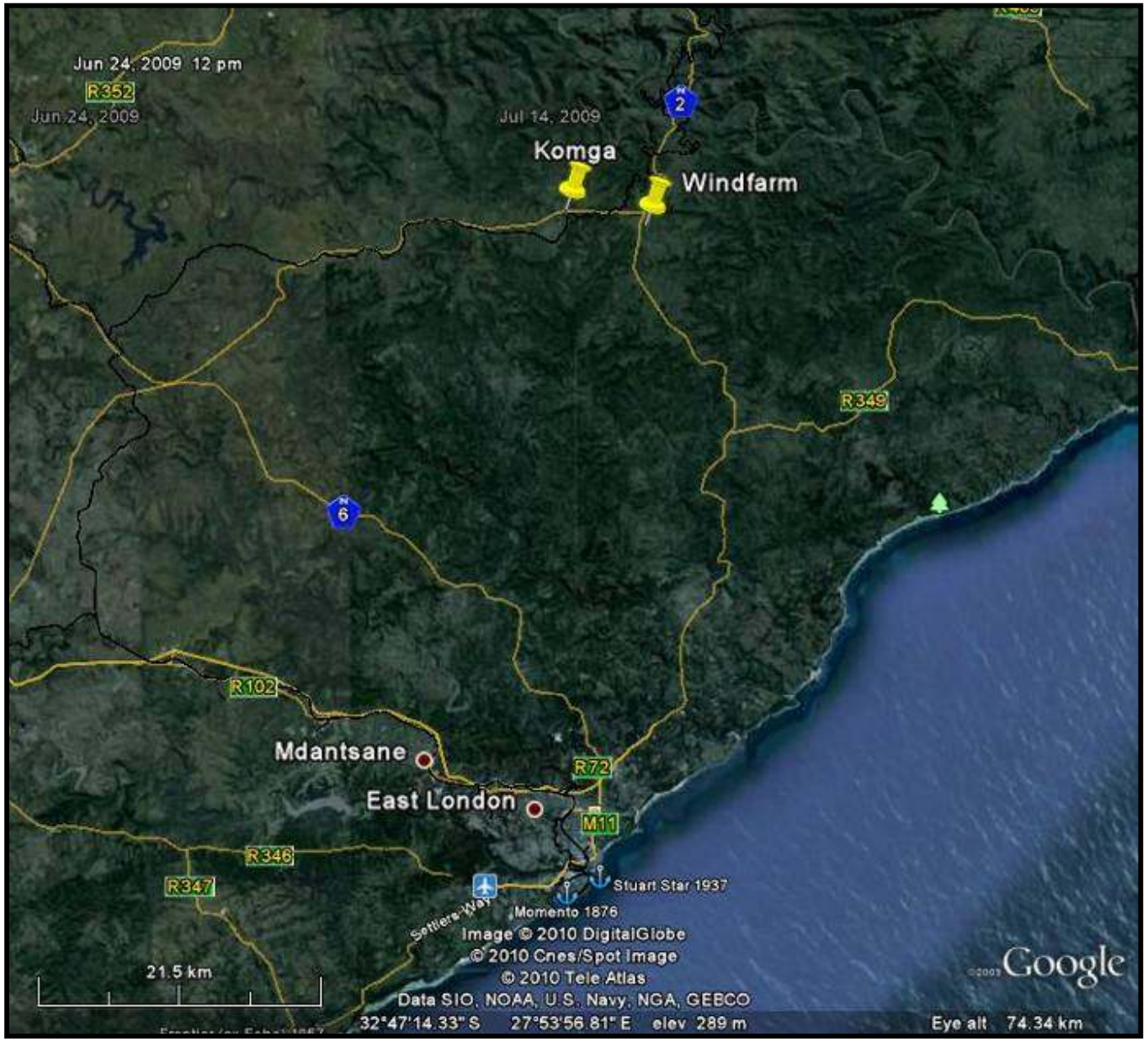
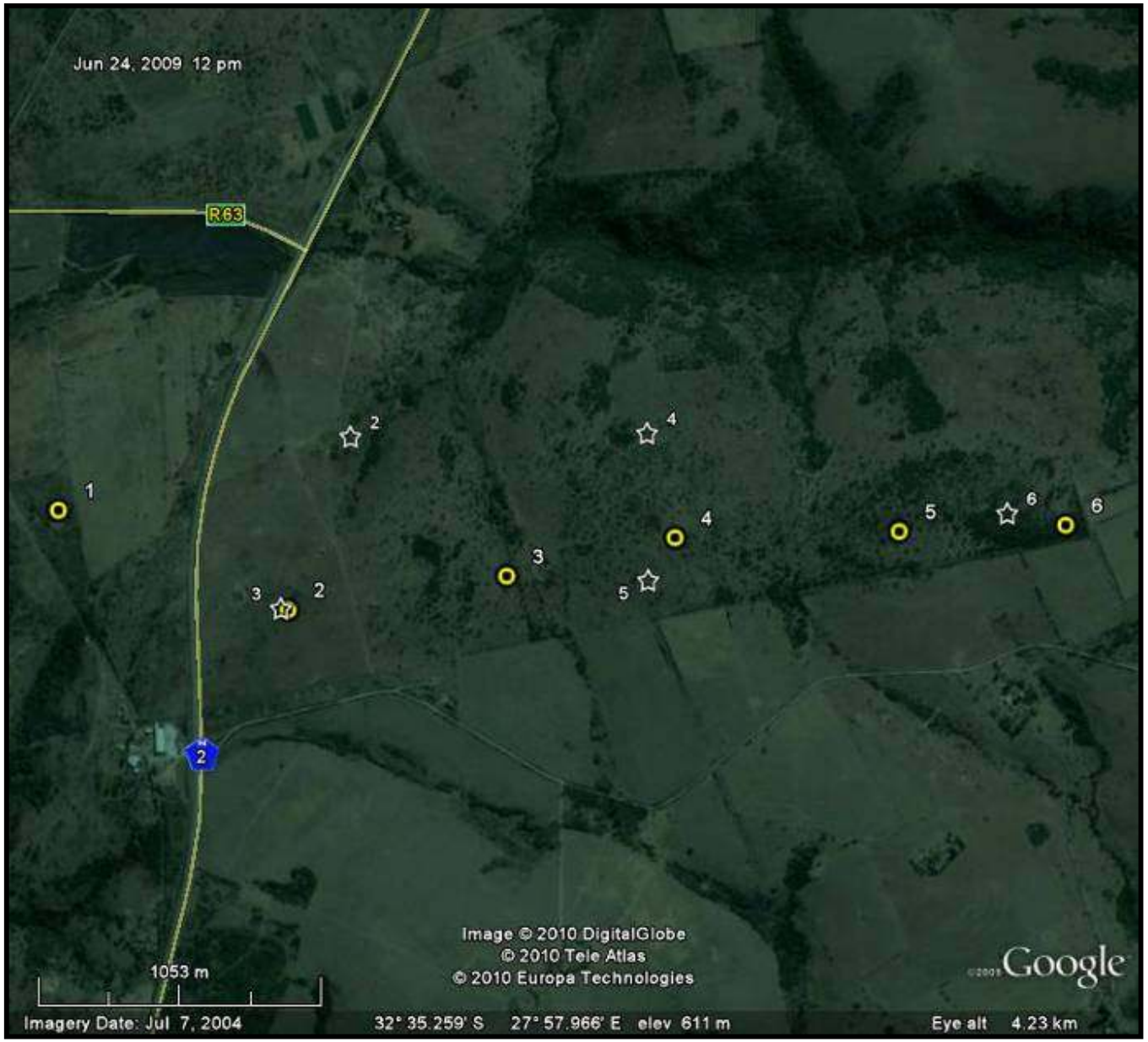


FIG. 2: AERIAL OVERVIEW OF THE PROPOSED TOWERS[1]



[1] circle = option 1; star = Option 2

FIG. 3: TOPOGRAPHICAL MAP OF THE PROPOSED WIND FARM

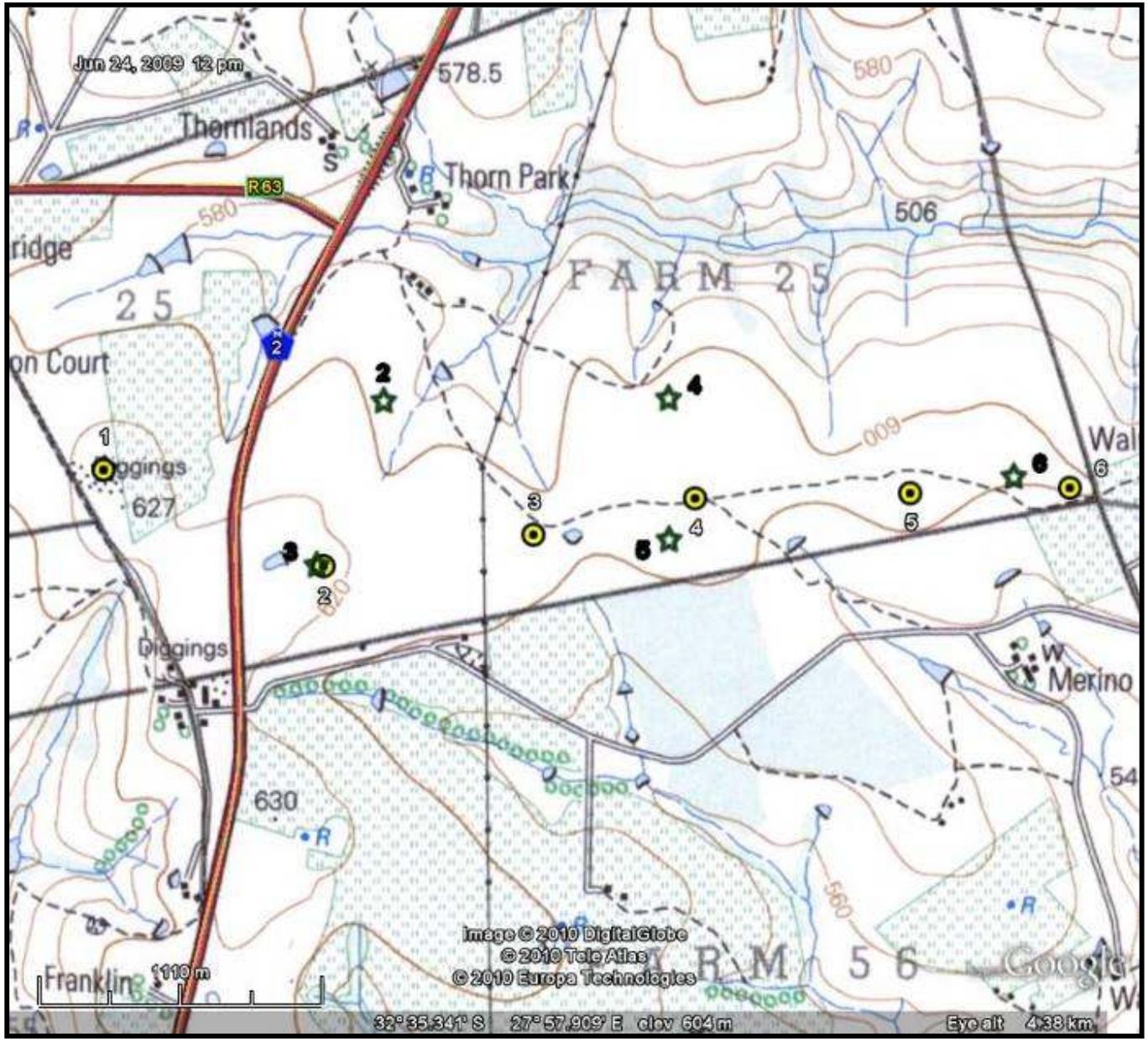


FIG. 4: 1960 TOPOGRAPHICAL OF THE PROPOSED WIND FARM

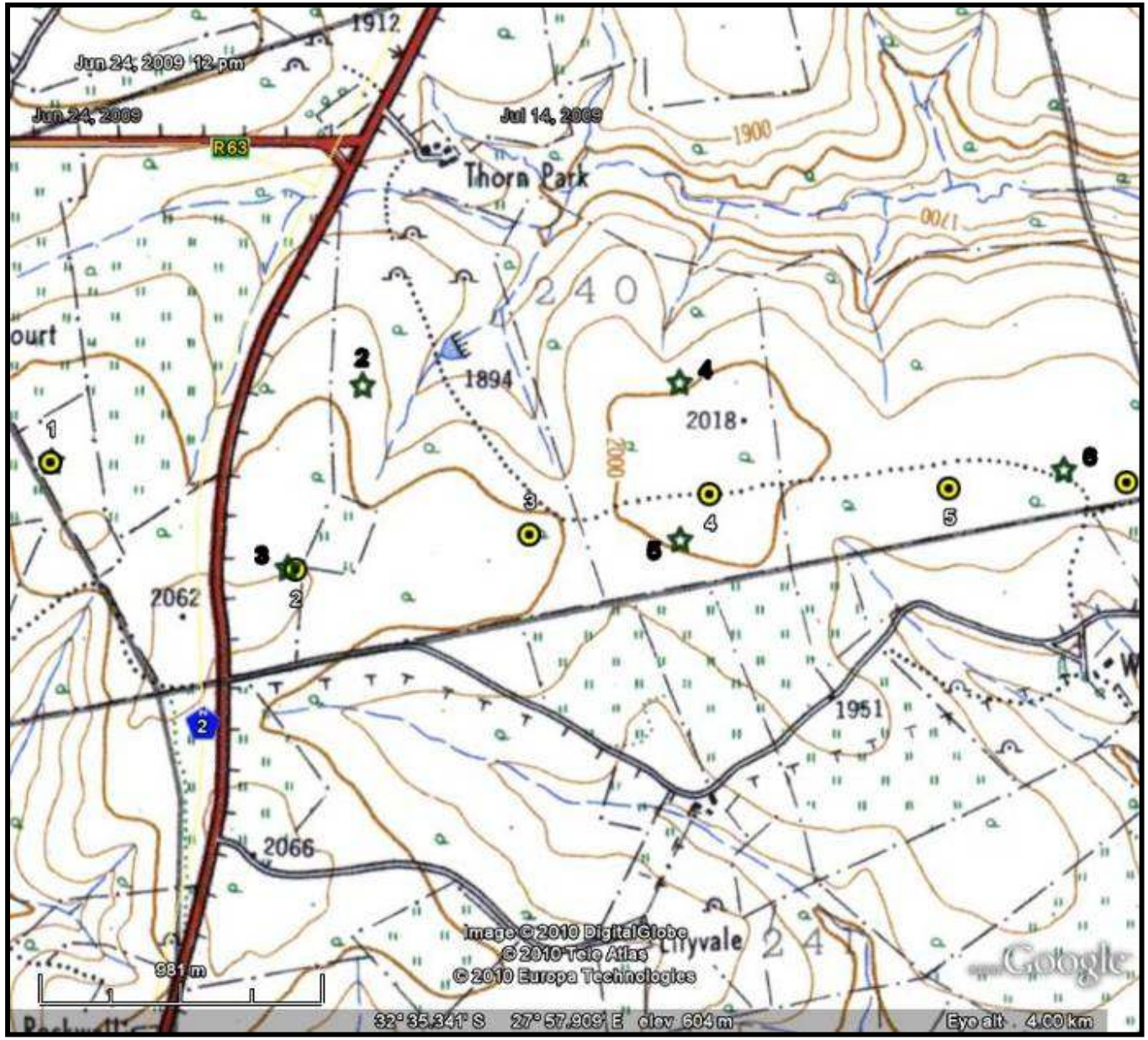


FIG. 5: VIEW OF THE HILL TO BE AFFECTED

West view

East view

RESULTS

I relied on topographical maps from 1960 and 1998 (fig.'s 3 - 4) to indicate any potential human settlements and buildings, and thus graves. While labourer's houses are shown on the older map (fig. 4), none exists in the location of the wind turbines.

I surveyed both sides of the hills, and specifically those areas demarcated for the wind turbines. The survey did not locate any heritage sites. Archaeological visibility was good (fig. 5), and I did not even observe isolated stone tools.

PALAEONTOLOGY

According to Dr Groenewald (Appendix A) there is a probability that fossils, will occur in the shale and mudstone layers. Depending on the depth of the turbine base, will determine which layers will be affected. Dr Groenewald suggests that someone is trained to observe these fossils; however, I believe that someone with a palaeontological background needs to assess the sites during the construction phase.

MANAGEMENT PLAN

A qualified palaeontologist will need to be on site if the turbine bases will be impacting on the shale and mudstone layers. The geological report in conjunction with the construction plans should determine the need for this palaeontologist.

I suggest the developer applies for a permit to destroy potential fossil remains before the construction phase. An application on finding fossils during construction will only delay the construction phase.

CONCLUSION

A Heritage survey the proposed Chaba Wind Energy Project was undertaken in August 2010. A total of seven wind turbines are proposed along a single ridge. No heritage sites were observed during the survey. There is a potential for palaeontological remains to occur in the deeper formations, and this will need to be assessed in conjunction with the construction plans and geosurvey report.

APPENDIX A
PALAEONTOLOGICAL ASSESSMENT

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7 October 2010

To Whom It May Concern:

Dear Gavin

POTENTIAL PALAEONTOLOGICAL IMPACT KOMGA AREA

Thank you for your request to comment on the potential impact of the development at Komga.

Following a desktop survey and the fact that the site of the development is underlain by shale (information supplied as part of the request for comments) it is presumed that the site of the development is underlain by sedimentary strata of the Karoo Supergroup. The region at Komga is underlain by either shales of the Upper Ecca Group or mudstones of the Lower Beaufort Group, both units containing fossils of invertebrate tracks as well as having a potential to contain fossils of vertebrates. Although fossils are known from these formations, excavations for the proposed developments can uncover some unique fossils or new information that will improve the understanding of the palaeontology of the region.

We recommend that the developer and contractor be informed of the possibility of fossils on the site and that one dedicated staff member of the contractor be trained to identify possible fossils. On reporting of a fossil find the developer must appoint a qualified palaeontologist to remove the fossils under guidance of a SAHRA permit.

Thank you for your request to be of assistance.

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