

**HERITAGE SURVEY OF THE PROPOSED LEICESTER
SAND WINNING OPERATION, NEWCASTLE,
KWAZULU-NATAL**

**FOR GEOFF SILK
CIVIL & MINING CONSULTANT CC
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INTRODUCTION

C. A. Ras Vervoer cc has applied for a sand winning operation licence for the Remaining extent of the Farm Leicester 2970-HS. The farm is located approximately 20km south of Newcastle, KwaZulu-Natal. Figures 1 – 3 indicate the location of the proposed operation. The affected area is located on the banks of the Alcockspruit. The area is currently used for agriculture and/or grazing. The northern bank has been severely disturbed by previous earth working activity.

The project involves the winning of sand from a watercourse by means of surface abstraction methods using hydraulic excavator and/or front end loader loading into road trucks. The operation has triggered the need for Environmental Authorisation for the following reasons:

1. The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from a watercourse.
2. Any activity requiring a mining permit in terms of section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), or renewal thereof.

Geoff Silk Civil and Mining Consultant has contracted Umlando to undertake the heritage impact assessment for this operation.

FIG. 1 GENERAL LOCATION OF THE PROPOSED OPERATION

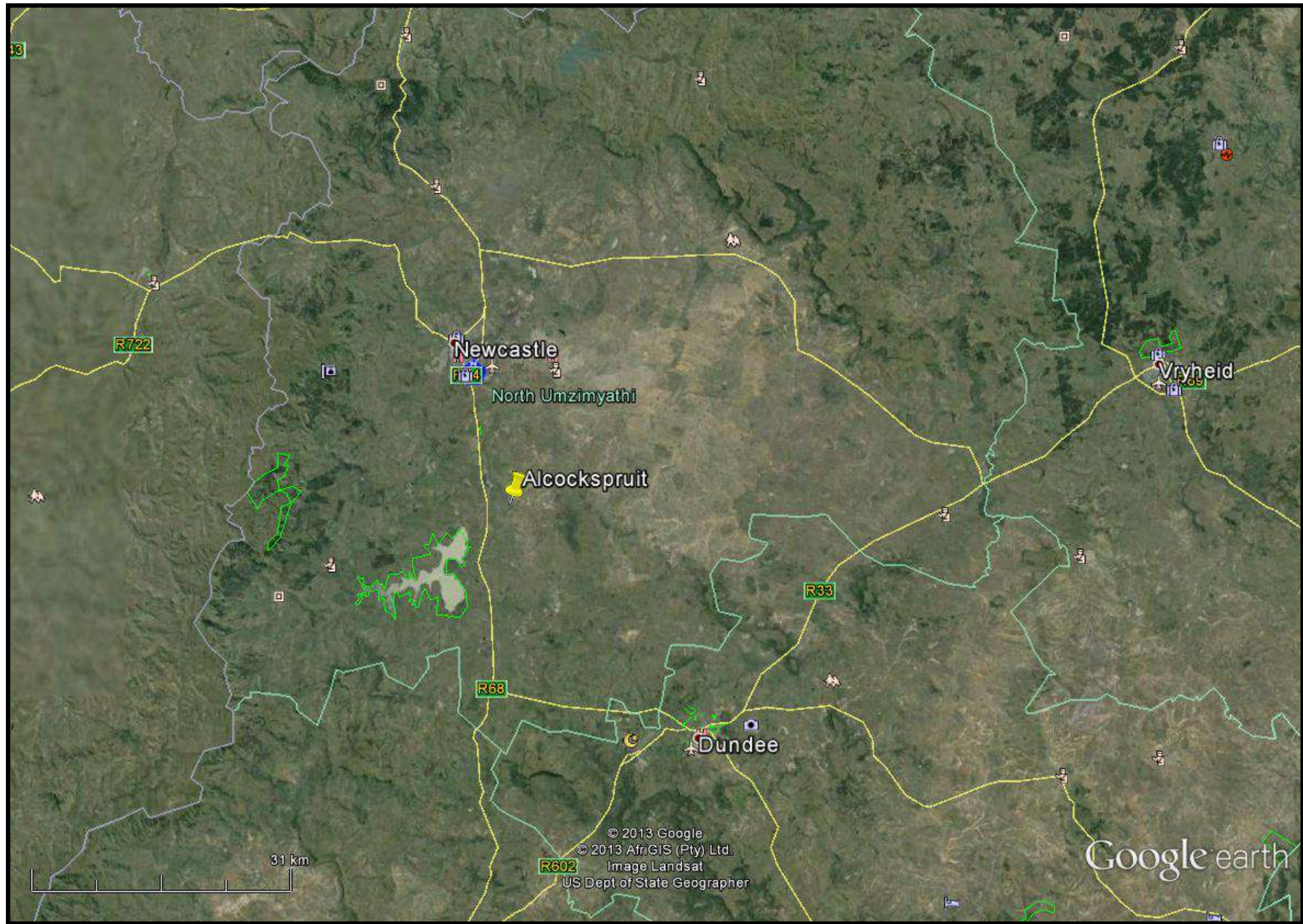


FIG. 2: AERIAL OVERVIEW OF THE GENERAL AREA

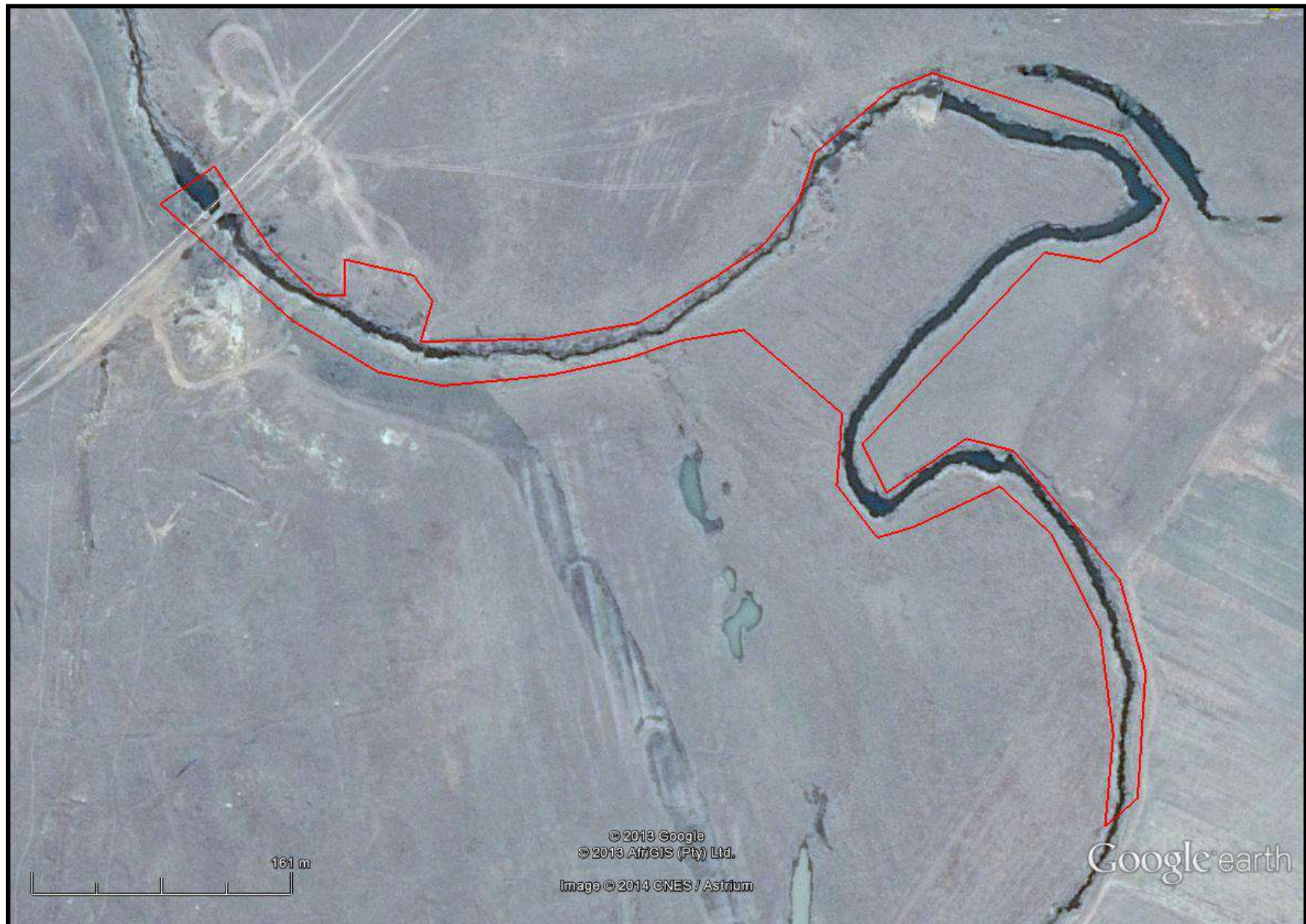
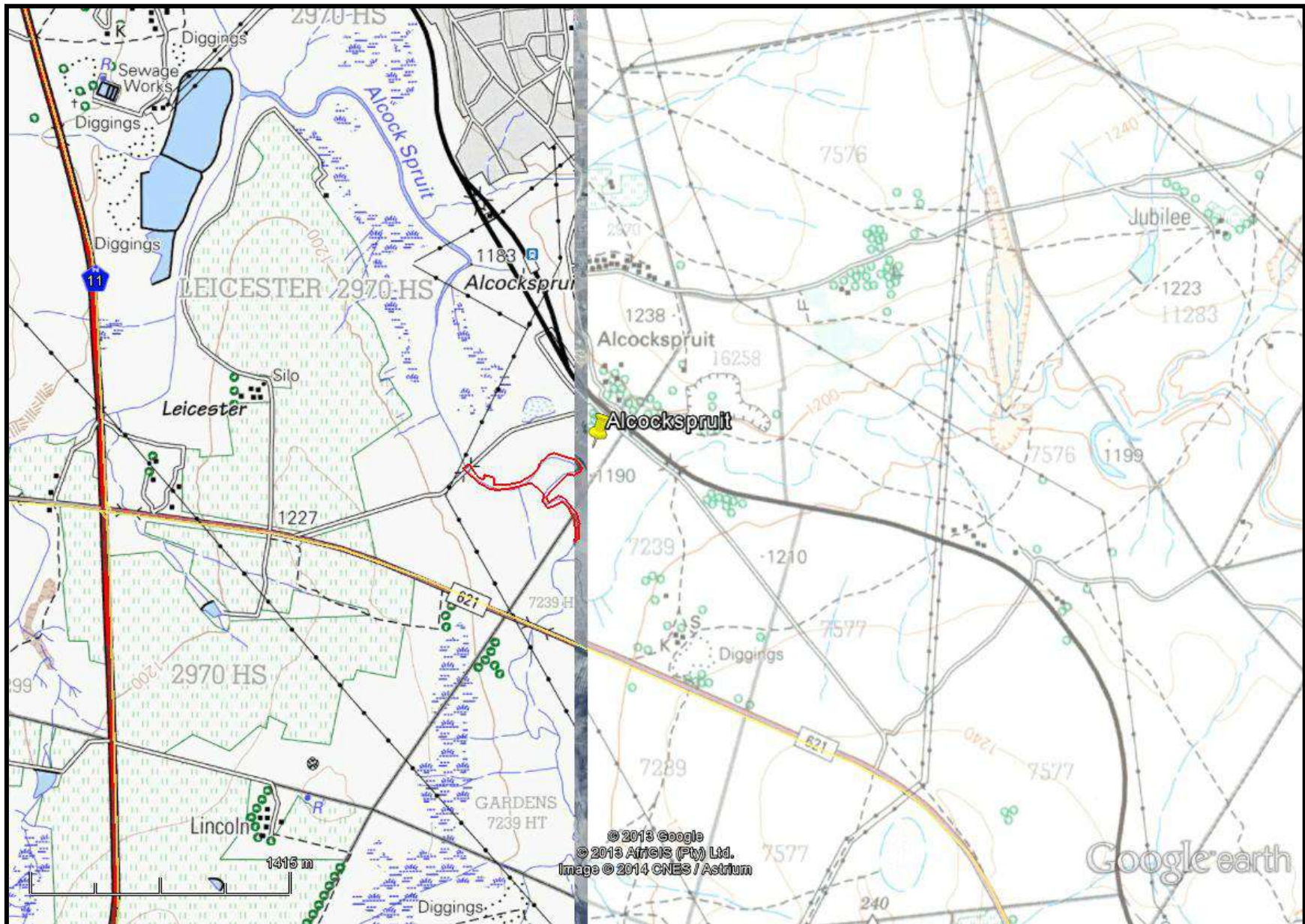


FIG. 3: TOPOGRAPHICAL MAP OF THE



KWAZULU-NATAL HERITAGE ACT NO. 4 OF 2008

“General protection: Structures.—

- No structure which is, or which may reasonably be expected to be older than 60 years, may be demolished, altered or added to without the prior written approval of the Council having been obtained on written application to the Council.
- Where the Council does not grant approval, the Council must consider special protection in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.
- The Council may, by notice in the *Gazette*, exempt—
- A defined geographical area; or
- defined categories of sites within a defined geographical area, from the provisions of subsection where the Council is satisfied that heritage resources falling in the defined geographical area or category have been identified and are adequately protected in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.
- A notice referred to in subsection (2) may, by notice in the *Gazette*, be amended or withdrawn by the Council.

General protection: Graves of victims of conflict.—No person may damage, alter, exhume, or remove from its original position—

- the grave of a victim of conflict;
- a cemetery made up of such graves; or
- any part of a cemetery containing such graves, without the prior written approval of the Council having been obtained on written application to the Council.
- General protection: Traditional burial places.—
- No grave—
- not otherwise protected by this Act; and
- not located in a formal cemetery managed or administered by a local authority, may be damaged, altered, exhumed, removed from its original position, or otherwise disturbed without the prior written approval of the Council having been obtained on written application to the Council.

The Council may only issue written approval once the Council is satisfied that—

- the applicant has made a concerted effort to consult with communities and individuals who by tradition may have an interest in the grave; and
- the applicant and the relevant communities or individuals have reached agreement regarding the grave.

General protection: Battlefield sites, archaeological sites, rock art sites, palaeontological sites, historic fortifications, meteorite or meteorite impact sites.—

- No person may destroy, damage, excavate, alter, write or draw upon, or otherwise disturb any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Council having been obtained on written application to the Council.
- Upon discovery of archaeological or palaeontological material or a meteorite by any person, all activity or operations in the general vicinity of such material or meteorite must cease forthwith and a person who made the discovery must submit a written report to the Council without delay.
- The Council may, after consultation with an owner or controlling authority, by way of written notice served on the owner or controlling authority, prohibit any activity considered by the Council to be inappropriate within 50 metres of a rock art site.
- No person may exhume, remove from its original position or otherwise disturb, damage, destroy, own or collect any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Council having been obtained on written application to the Council.
- No person may bring any equipment which assists in the detection of metals and archaeological and palaeontological objects and material, or excavation equipment onto any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, or meteorite impact site, or

- use similar detection or excavation equipment for the recovery of meteorites, without the prior written approval of the Council having been obtained on written application to the Council.
- The ownership of any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site, on discovery, vest in the Provincial Government and the Council is regarded as the custodian on behalf of the Provincial Government.” (KZN Heritage Act of 2008)

METHOD

The method for Heritage assessment consists of several steps.

The first step forms part of the desktop assessment. Here we would consult the database that has been collated by Umlando. This databases contains archaeological site locations and basic information from several provinces (information from Umlando surveys and some colleagues), most of the national and provincial monuments and battlefields in Southern Africa (<http://www.vuvuzela.com/googleearth/monuments.html>) and cemeteries in southern Africa (information supplied by the Genealogical Society of Southern Africa). We use 1st and 2nd edition 1:50 000 topographical and 1937 aerial photographs where available, to assist in general location and dating of buildings and/or graves. The database is in Google Earth format and thus used as a quick reference when undertaking desktop studies. Where required we would consult with a local data recording centre, however these tend to be fragmented between different institutions and areas and thus difficult to access at times. 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.

RESULTS

DESKTOP STUDY

The desktop study consisted of analysing various maps for evidence of prior habitation in the study area, as well as for previous archaeological surveys. The archaeological database indicates that there are archaeological sites in the general area (fig. 4). These sites include all types of Stone Age and Iron Age sites. No sites occur in the study area. No national monuments, battlefields, or historical cemeteries are known to occur in the study area. No cultural landscapes or oral histories are known to be associated with this study area.

The 1960 topographical map (fig. 5) and 1973 aerial photograph (fig. 6) indicate that the land has been used for agriculture for some time. No human settlements occur in the study area on these maps.

FIG. 4: LOCATION OF KNOWN HERITAGE SITES NEAR THE STUDY AREA

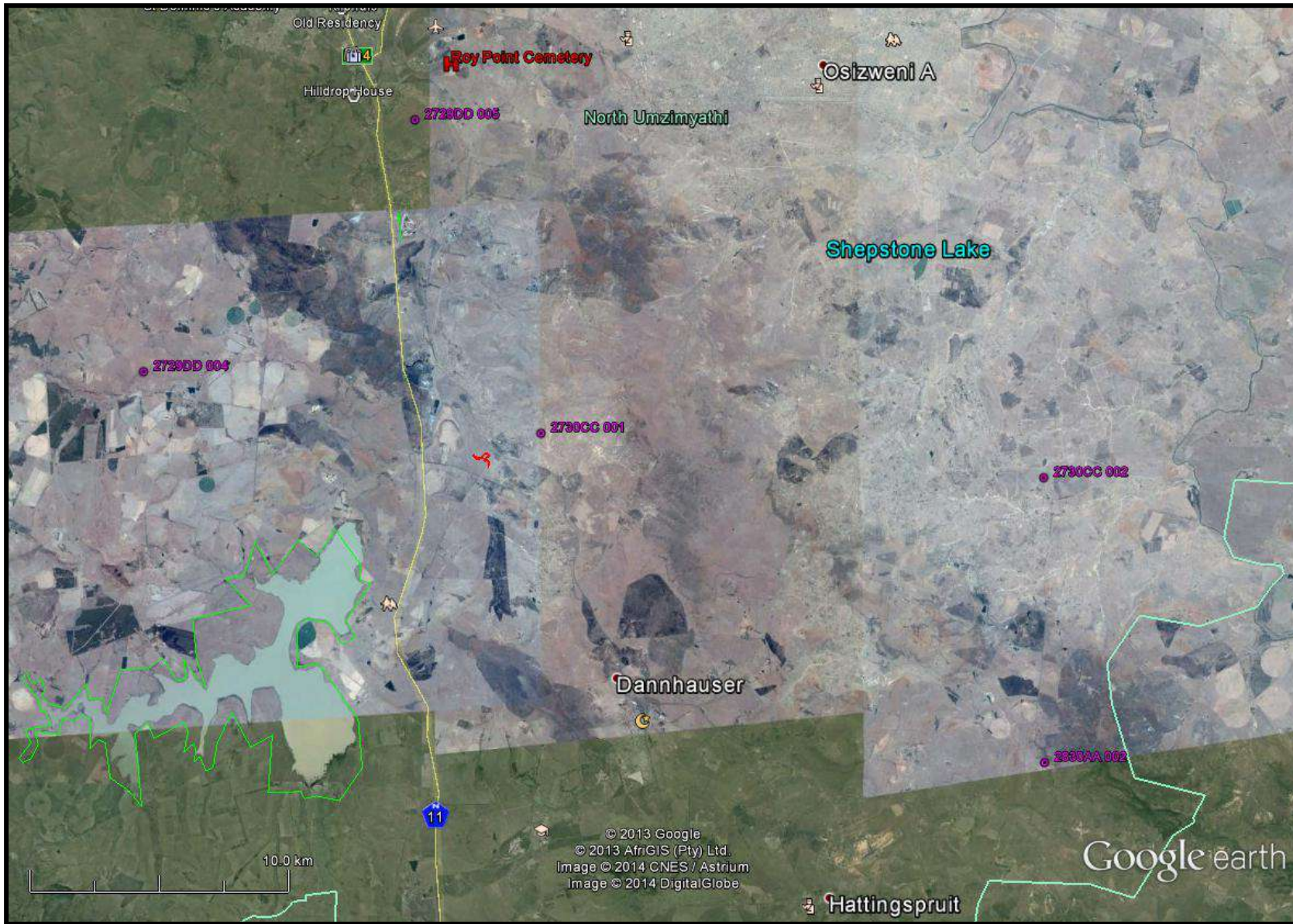
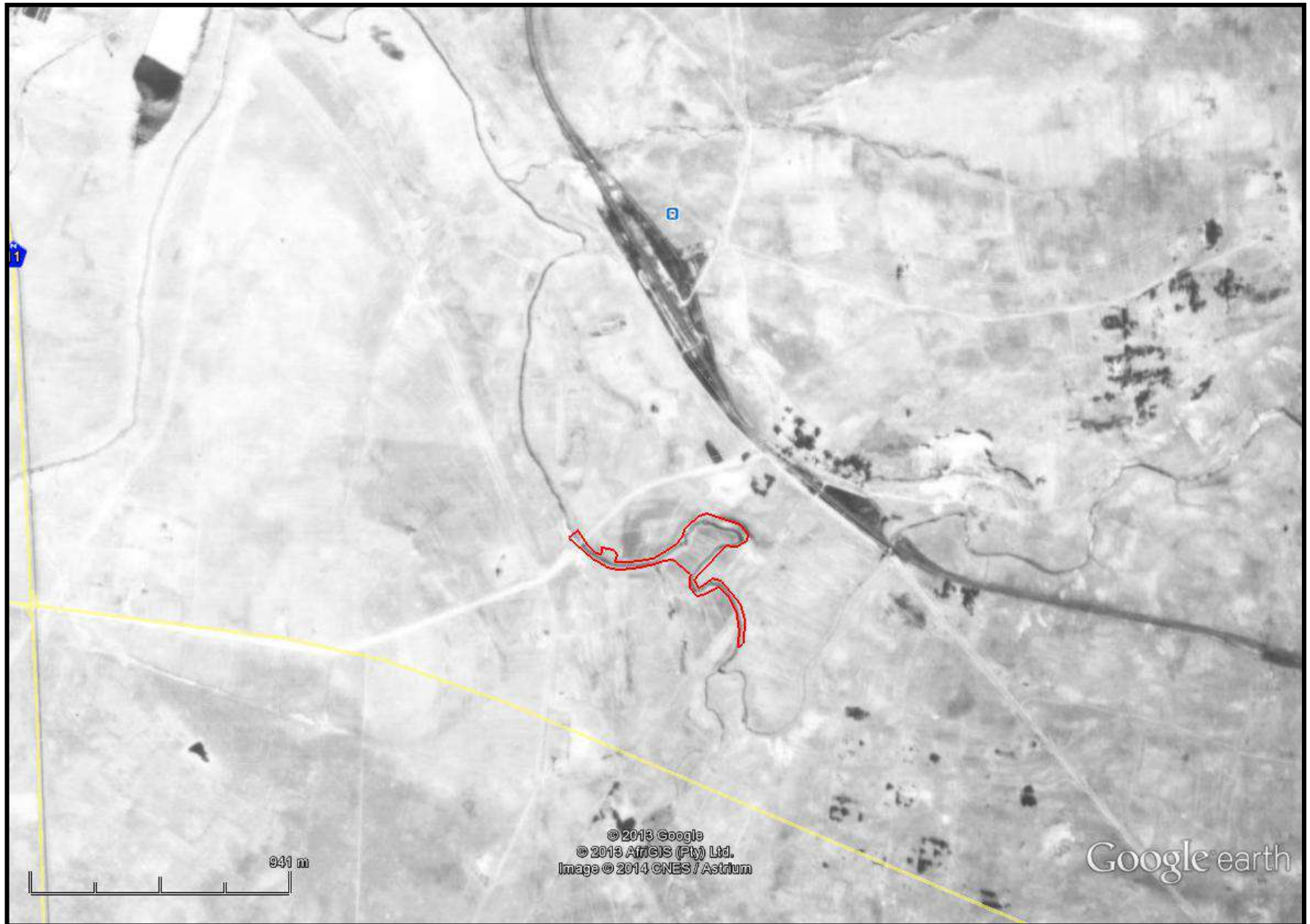


FIG. 5: STUDY AREA IN 1960



FIG. 6: STUDY AREA IN 1973



The SAHRIS palaeontological sensitivity map indicates this area as blue, and thus no palaeontological impact assessment is required. Since this is a sand winning operation, it will not be disturbing potential fossil rock formations.

FIELD SURVEY

The field survey was undertaken in February 2014. Figure 7 shows the general view of the area. Two heritage sites were noted during the survey (fig. 8). The general area to the north of the river has been extensively disturbed by earthmoving activity. To the north of the study area are the remains of some buildings and an open well. These will not be affected by the current sand winning operation.

Much of the area is in a wetland, and thus it is highly unlikely to have the remains of settlements and associated artefacts.

There is one bridge within the study area (fig. 9). According to the landowner, this bridge is part of the original road to Dannhauser. The bridge is made of cast iron railings with a (now) concrete floor. The supporting structures are made of sandstone. The steel supports have the “Barrow Steel” logo and are possibly dated to 1901. The company began in 1856 and closed in 1983. It was located in Barrow-in-Furness, Britain, and exported steel for railways, amongst other items. There is no visible date on the bridge, but it would post-date 1901. The bridge currently serves as an access to the northern part of the land.

The sand winning operation will be using the bridge as access to the temporary stockpiles on the northern banks.

Significance: The full significance of the bridge’s architecture would need to be assessed if it will be damaged in any manner.

Mitigation: The bridge may not be damaged, or altered, without the permission from Amafa KZN. The sand winning operations may not undermine the supporting structures and should have a 10m buffer zone between the operations and the bridge and supporting structures.

If the bridge needs to be altered, or is damaged, a permit from Amafa KZN Built Environment Section will need to be obtained.

I suggest that a detailed photographic record of the bridge and related structures is made before the operation begins. This should be lodged with Amafa KZN, via SAHRIS, and can be used as a baseline for later comparisons.

FIG. 7: GENERAL VIEW OF THE STUDY AREA



FIG. 8: LOCATION OF RECORDED SITES



FIG. 9: HISTORICAL BRIDGE



CONCLUSION

A heritage survey was undertaken for the Leicester Sand Winning Operation, Newcastle, KwaZulu-Natal. The area has been affected by agricultural ploughing and earth moving activity in the past and is not pristine.

A desktop study indicated that there was potential for Iron Age and Stone Age material in the general area. The desktop also indicated that there has been no human settlement in the study area since 1960s. Any settlements in the area occurred some distance from the study area.

The study area is not sensitive for palaeontological remains, however if any fossils are uncovered during the operations, then they need to be reported to Amafa KZN.

The field survey noted two areas of heritage sensitivity. One area is the remains of several building that occurs just outside of the affected area, and will thus not be affected. The second area is a historical bridge that will be used by the sand winning operations. The bridge may not be damaged or altered without permission from Amafa KZN. I suggested that the bridge is extensively photographed before the operation phase begins. This will be a record of its status before the operations, and can be used later for comparisons if needed.