

**DESKTOP HERITAGE SURVEY OF THE PROPOSED
NEWARK QUARRY, MANDENI, KWAZULU-NATAL**

FOR TRIPLO4

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INTRODUCTION

The proposed project involves the mining of tillite from the site in Newark to a depth of approximately 30m. An estimated 6000 tons of tillite are intended to be mined per quarter over a two year period. The site is located ~4km south of Mandeni, KwaZulu-Natal (fig.'s 1- 3).

“The site falls within the Kwazulu-Natal Coastal Belt vegetation unit. The major land-use surrounding the site is intensive sugar-cane farming [of which some areas have been terraced]...

“The major land features on the site include the lower-lying perennial river on the southern and western boundaries of the sites and extremely steep wooded ravines mainly on the south and east facing slopes. The highest areas on the site are situated on the upper hillslopes around the quarry site... The perennial river falls within the Thukela Water Management Area...

The majority around the proposed mining site 1 is situated within completely transformed terraced hillslopes dominated by mono-cultured sugar cane plantations... A perennial river occurs to the south... Remnant pockets of indigenous open and closed woodland occurs within the riparian zone of the river...

The majority of the hillslopes on and surrounding the site comprises well drained brown sandy soils. Evidence of iron and manganese concretions (orange and yellow mottling) from ground level to 50cm” (Tripl4 2013).

Umlando was contracted to undertake the HIA for the proposed quarry

FIG. 1 GENERAL LOCATION OF THE PROPOSED NEWARK QUARRY

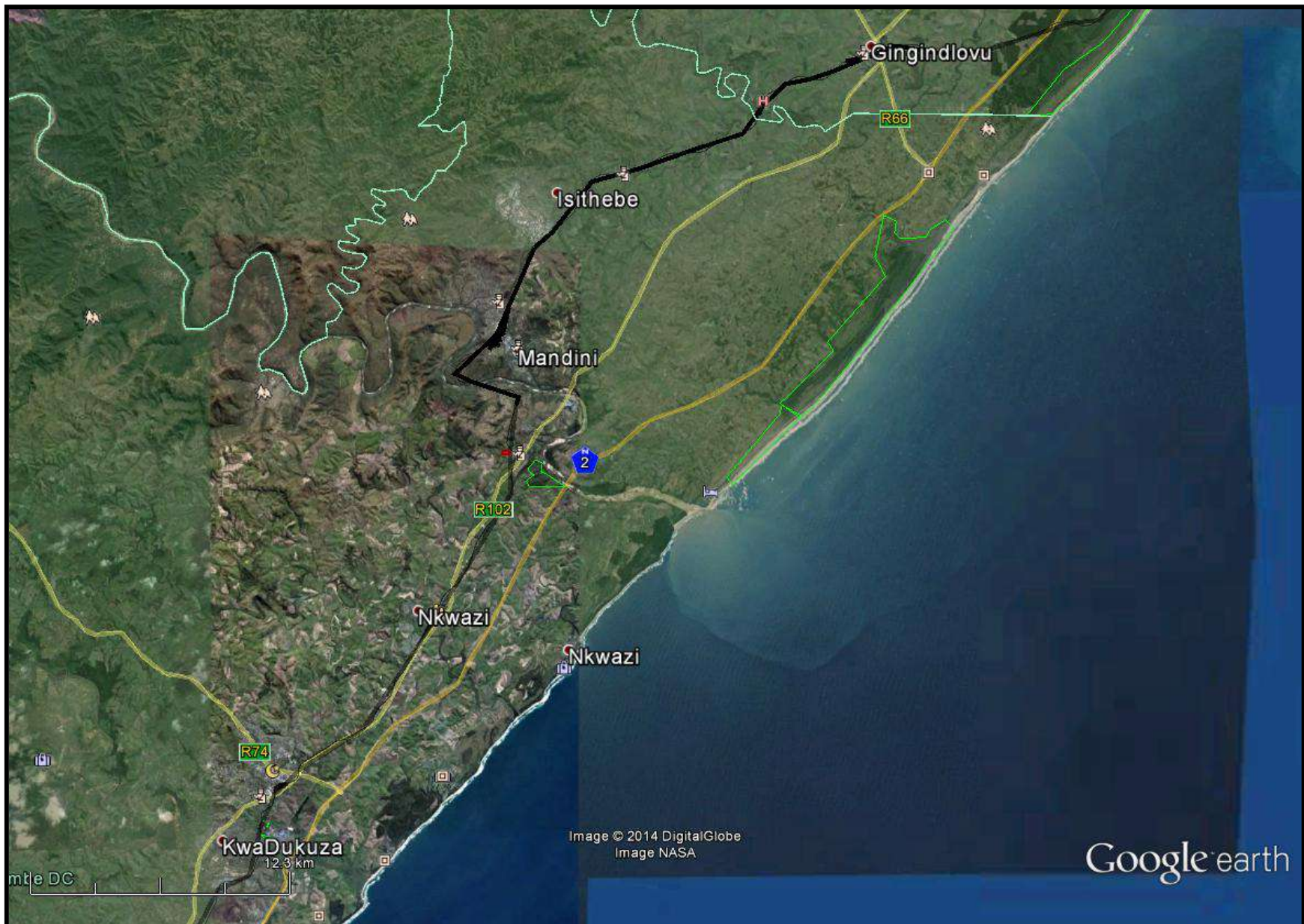
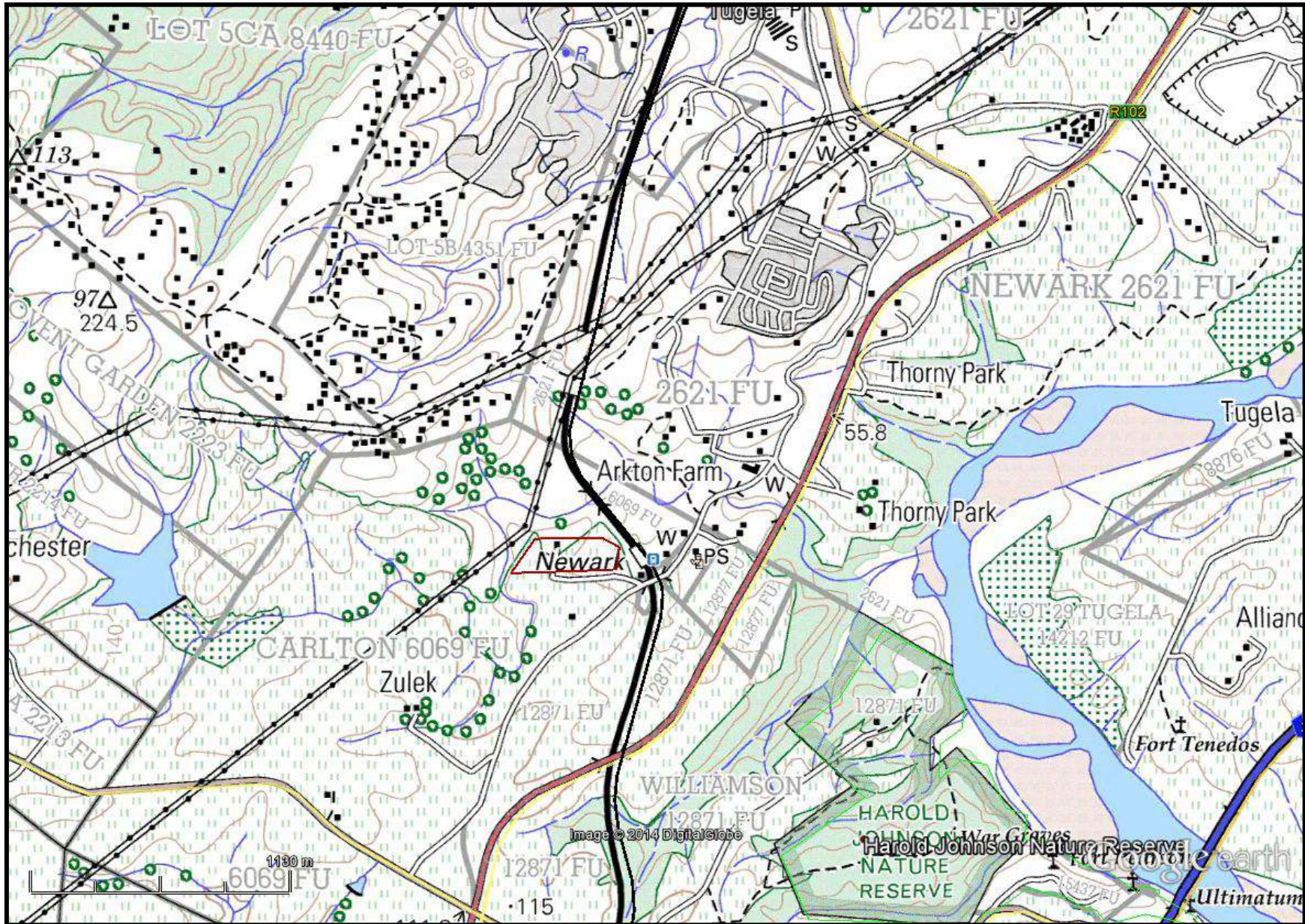


FIG. 2: AERIAL OVERVIEW OF THE PROPOSED NEWARK QUARRY



FIG. 3: TOPOGRAPHICAL MAP OF THE PROPOSED NEWARK QUARRY



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, as well as Anglo-Zulu War Battlefields and forts, and historical buildings and cemeteries. No sites occur in the study area. No national monuments, battlefields, or historical cemeteries are known to occur in the study area.

The 1937 aerial photographs indicate that most of the study area was under sugarcane cultivation, with some natural bush occurring on the northern side of the hill (fig. 5). There are no settlements in the study area.

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



FIG. 5: STUDY AREA IN 1937



FIG. 6: STUDY AREA IN 1963



The 1963 aerial photographs indicate that most of the study area was under sugarcane cultivation, with some natural bush occurring on the northern side of the hill (fig. 6). There are no settlements in the study area; however, there is a settlement just outside the northwest corner. This settlement probably has human graves. The 2002 topographical map (fig. 3) indicates that there is a building on top of the hill just outside of the study area.

FIELD SURVEY

The study area is mostly on a steep slope of the hill and its crest. The area is currently used for sugar cane farming. The soil is thin and not a preferred option for Iron Age farmers. Fig. 7 shows the study area. The tip of the hill is overgrown with dense grass and other vegetation.

The field survey did not record any heritage sites in the quarry footprint. However, at the top of the hill are the remains of two types of buildings. The first are two concrete buildings: a water reservoir and another unknown structure. These are probably the ones noted in fig. 3. The second type of buildings has been bulldozed and only the floors and brick rubble remains. The vegetation was too dense to be able to assess the extent of the ruins. The buildings are not made from concrete, rather from older 'Coronation' bricks. Fig. 8 shows the location of the ruins in relation to study area. This type of brick dates between 1902 – 1977. The buildings appear to be those of farm labourer houses.

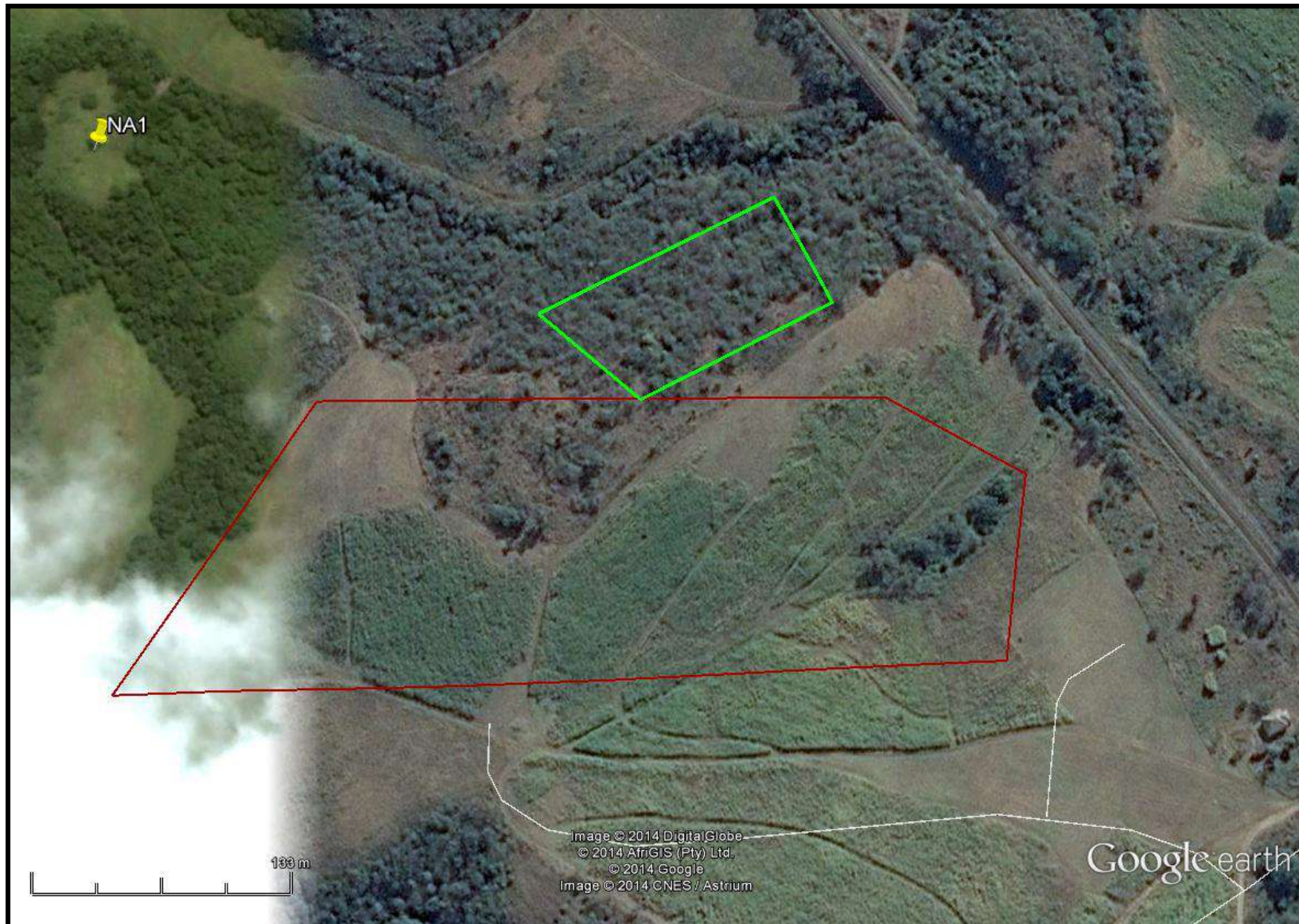
Significance: The ruins were not assessed, as visibility was poor. The developer will require a permit from Amafa KZN if they are older than 60 years and affected.

Mitigation: The ruins will need to be assessed if they are to be affected in any manner. The vegetation will need to be cleared before an assessment is undertaken. The developer will need to prove the age of the ruins.

FIG. 7: VIEWS OF THE PROPOSED QUARRY



FIG. 8: ESTIMATED AREA OF RUINS¹



¹ Green = area of ruins; red = quarry footprint

CONCLUSION

A heritage survey was undertaken for the proposed Newark quarry. The area is currently used for sugar cane farming. The quarry intends to mine tillite over several years.

No heritage sites were observed in the quarry footprint. However, ruins of buildings that could predate 60 years in age were noted just outside of the footprint. The area was covered with dense vegetation, hiding most of the ruins. If the quarry extends further along the hill, it will impact on these ruins. The ruins will need to be re-assessed if this occurs and a permit from Amafa KZN will be required. If the buildings are older than 60 years, then there is a possibility of human graves occurring in the area.