

**PROPOSED CONSTRUCTION OF OFF TAKE 6
POTABLE WATER PIPELINE AS PART OF THE
LOWER THUKELA BULK WATER SUPPLY AT
SHAKAVILLE/MZUMBE TO THE LINDELANI &
SIYAPHAMBILI RESERVOIRS, ILEMBE DISTRICT
MUNICIPALITY, KZN**

FOR TRIPLO4 SUSTAINABLE SOLUTIONS

DATE: 29 OCTOBER 2014

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TABLE OF CONTENT

INTRODUCTION	3
KWAZULU-NATAL HERITAGE ACT NO. 4 OF 2008	8
METHOD	10
Defining significance.....	11
RESULTS	14
DESKTOP STUDY	14
FIELD SURVEY.....	18
CEMETERY.....	18
TP02	20
MANAGEMENT PLAN	21
CONCLUSION.....	21
APPENDIX A	22
SITE RECORD FORM	22

TABLE OF FIGURES

FIG. 1 GENERAL LOCATION OF THE STUDY AREA.....	4
FIG. 2: AERIAL OVERVIEW OF THE STUDY AREA	5
FIG. 3: TOPOGRAPHICAL MAP OF THE STUDY AREA	6
FIG. 4: SCENIC VIEWS OF THE PIPELINE AND RESERVOIR	7
FIG. 5: LOCATION OF KNOWN HERITAGE SITES NEAR THE STUDY AREA	15
FIG. 6: STUDY AREA IN 1968	16
FIG. 7: STUDY AREA IN 1937	17
FIG. 8: LOCATION OF HERITAGE SITES ALONG THE OFF TAKE 6.....	19
FIG. 9: SHEMBE CIRCLE AT TP02	20

INTRODUCTION

“The locality is approximately 65km to the North of Durban in the Shakaville / Mzumbe area of Northern Kwa-Zulu Natal. The site is directly north of the Stanger and located approximately 4km from the Stanger Cemetery. The proposed project, Off Take 6, falls within the KwaDukuza Local- and iLembe District Municipality.

The proposed construction for Off Take 6 forms part of the Lower Thukela Bulk Water Supply Scheme which is a project of the iLembe District Municipality and co-funded by the Department of Water Affairs. The construction of Off Take 6 is part of the sections of the potable water pipeline that forms part of the broader Bulk Water Supply Scheme in the lower Thukela Region. The proposed pipeline is located immediately outside the road reserve and is approximately 5km in length with an outside diameter of 450 to 500mm. The proposed Off-Take 6 bulk water pipeline feeds into the existing Lindelani Reservoir and the new Siyaphambili Reservoir as the project makes provision for Bulk Supply of Potable water to communities that currently do not have access to reticulated potable water in the Lower Thukela Region” (Tripl04 BID 2014)

Figures 1 – 4 show the location of the project

FIG. 1 GENERAL LOCATION OF THE STUDY AREA

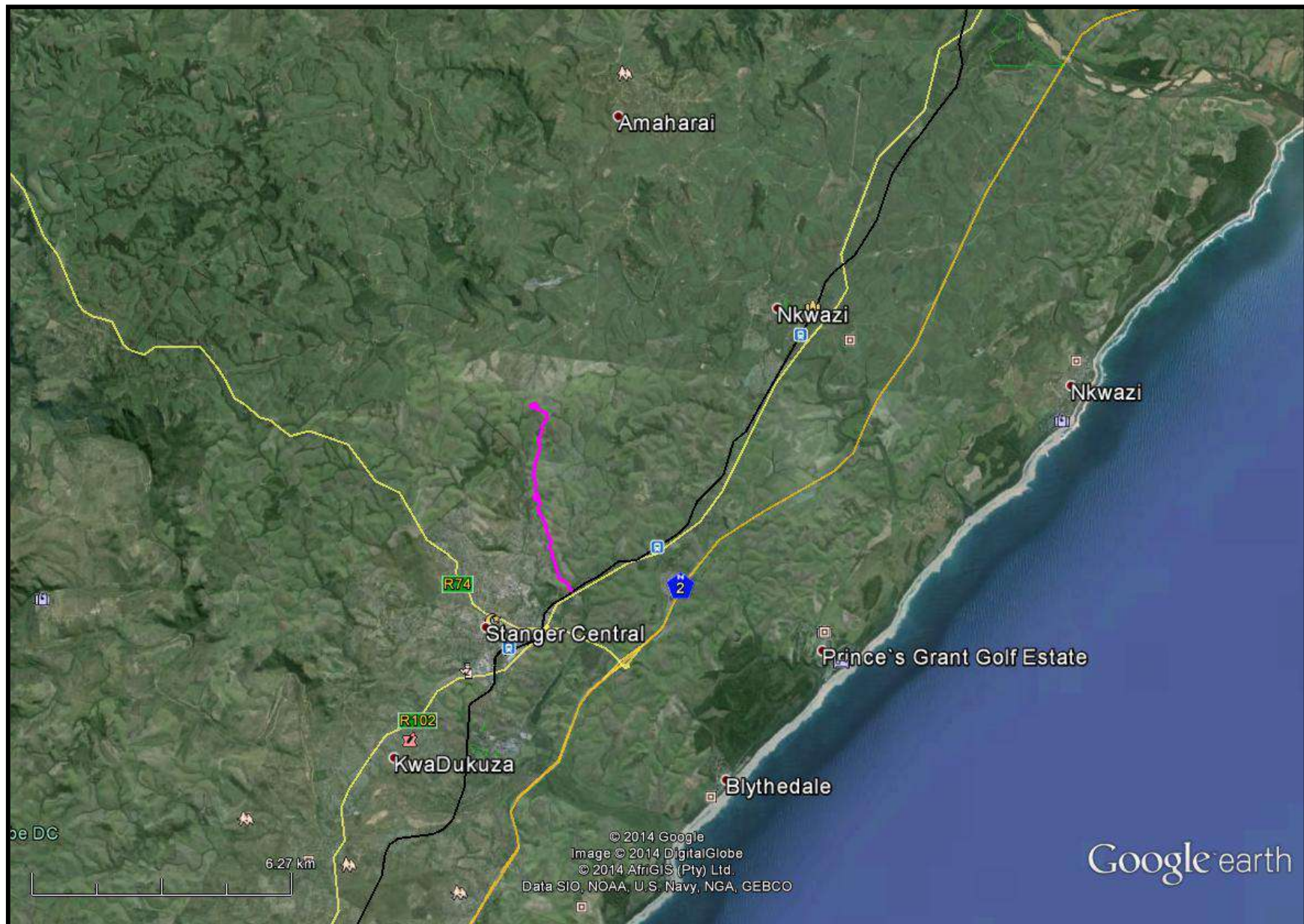


FIG. 2: AERIAL OVERVIEW OF THE STUDY AREA

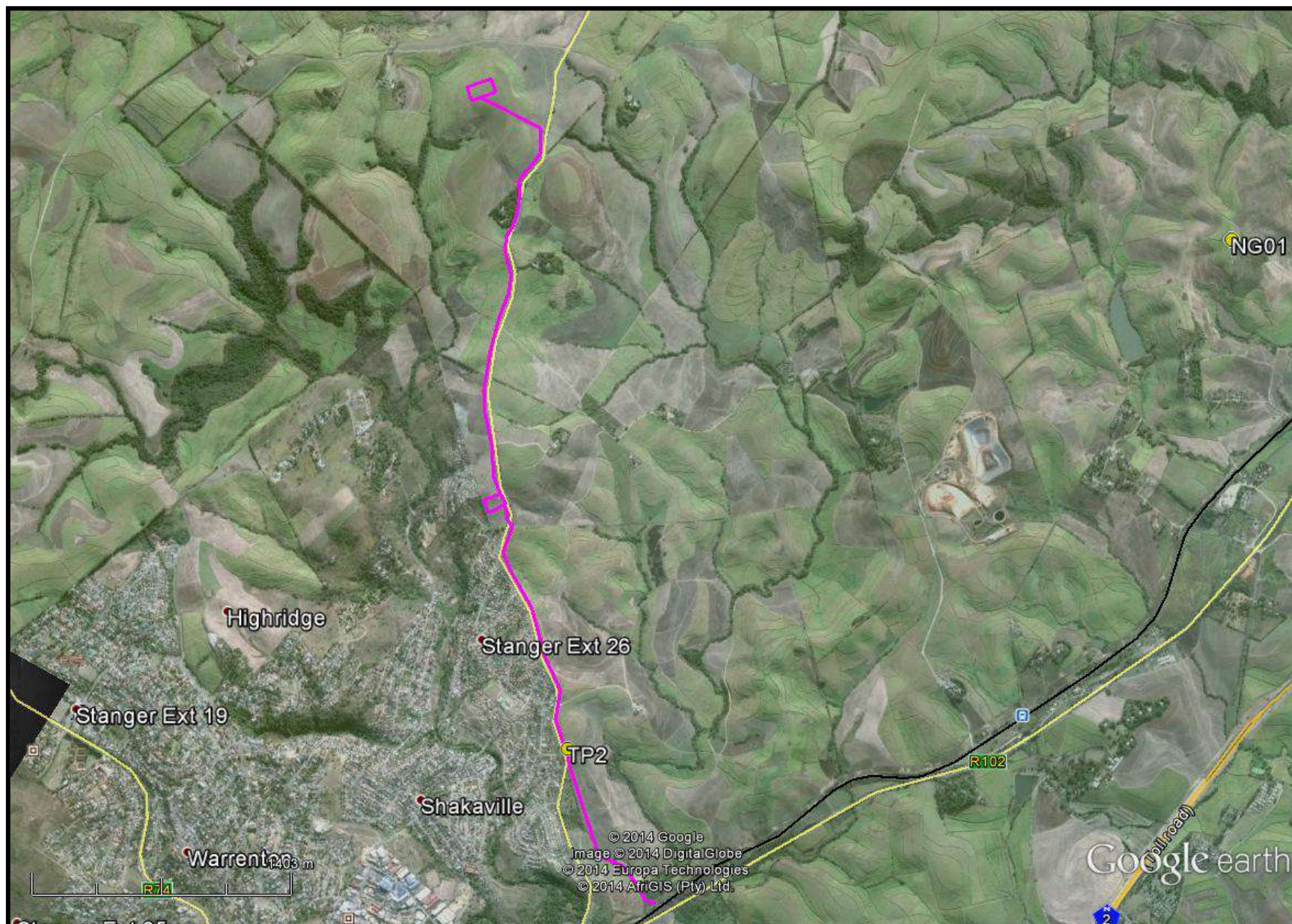


FIG. 3: TOPOGRAPHICAL MAP OF THE STUDY AREA

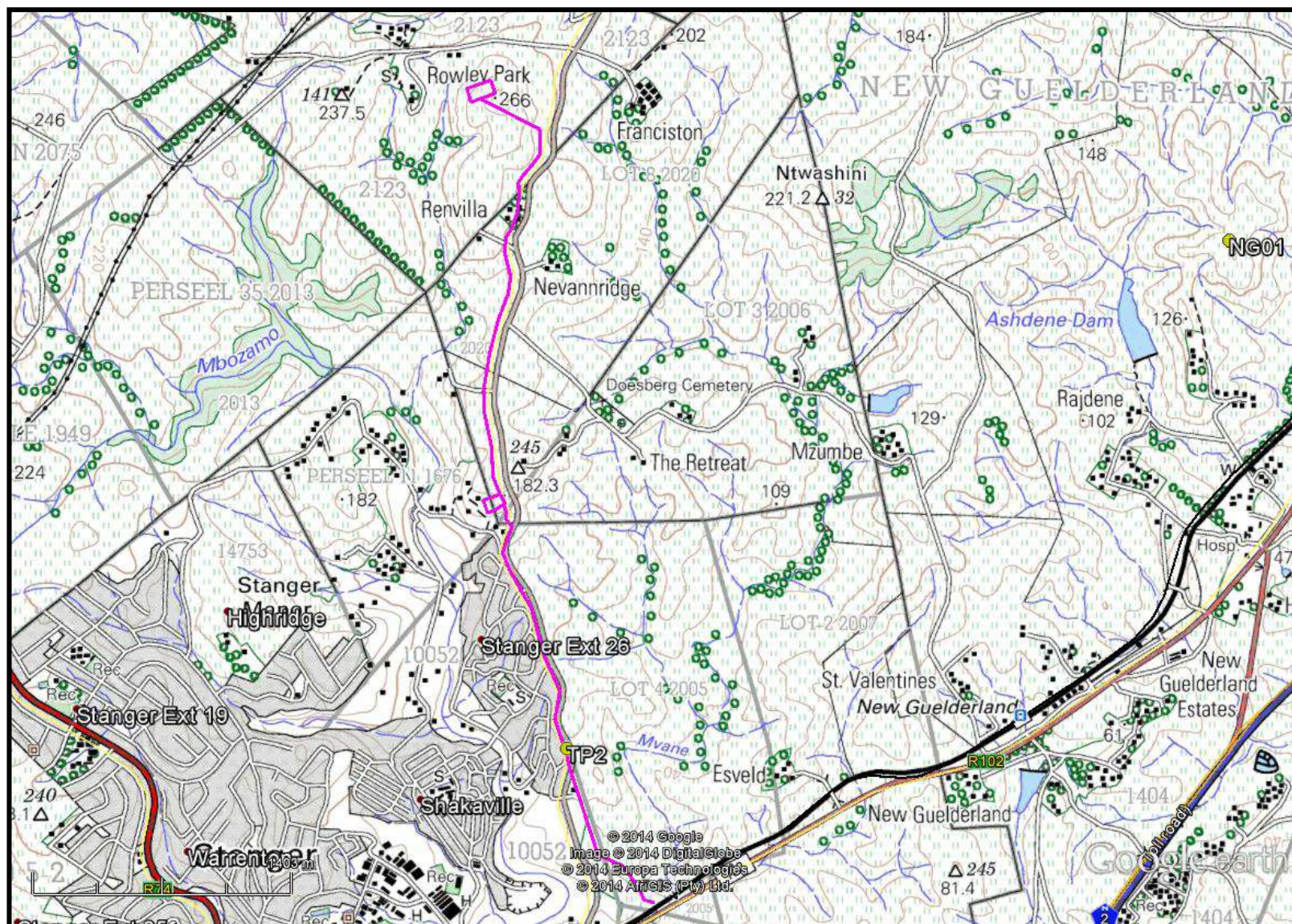


FIG. 4: SCENIC VIEWS OF THE PIPELINE AND RESERVOIR



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. These 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.

TABLE 1: SAHRA GRADINGS FOR HERITAGE SITES

SITE SIGNIFICANCE	FIELD RATING	GRADE	RECOMMENDED MITIGATION
High Significance	National Significance	Grade 1	Site conservation / Site development
High Significance	Provincial Significance	Grade 2	Site conservation / Site development
High Significance	Local Significance	Grade 3A / 3B	
High / Medium Significance	Generally Protected A	3A / 3B	Site conservation or mitigation prior to development / destruction
Medium Significance	Generally Protected B	3B	Site conservation or mitigation / test excavation / systematic sampling / monitoring prior to or during development / destruction
Low Significance	Generally Protected C	3C	On-site sampling monitoring or no archaeological mitigation required prior to or during development / destruction

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, national monuments, battlefields, and historical cemeteries in the general area (fig. 5). These sites include all types of Stone Age and Iron Age sites, as well as Historical Period sites. No sites occur in the study area.

The area is classified as 'Grey zone' on SARHIS in terms of palaeontological sensitivity.

The 1968 topographical map indicates that there are no settlements in the study area footprint (fig. 6). There is a cemetery on the eastern side of the P107; however, this is not noted on the 2000 topographical map.

The 1937 aerial photograph indicates that there are no settlements in the project footprint (fig. 7). The cemetery noted in 1968 is not visible on the 1937 map.

FIG. 5: LOCATION OF KNOWN HERITAGE SITES NEAR THE STUDY AREA

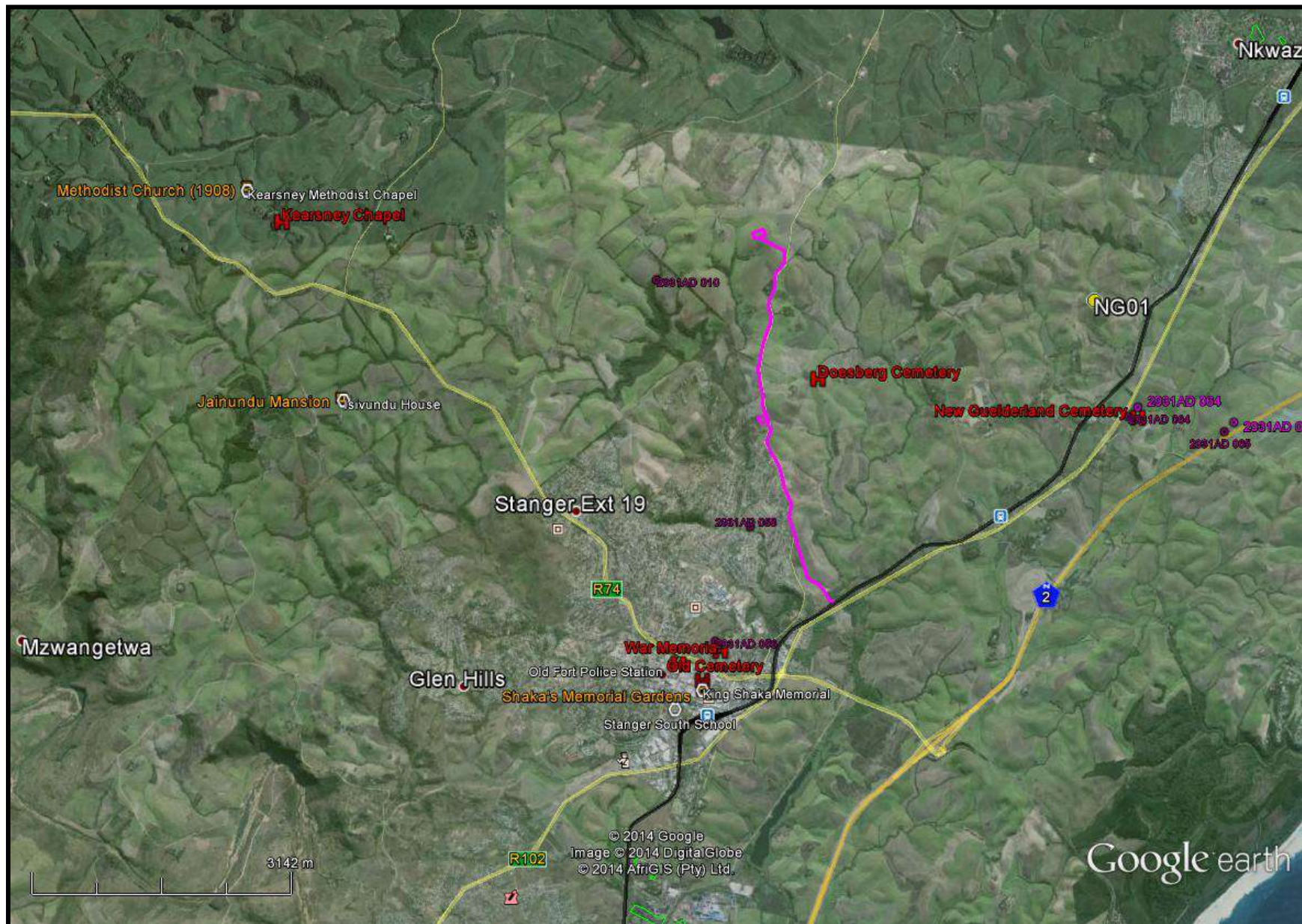


FIG. 6: STUDY AREA IN 1968

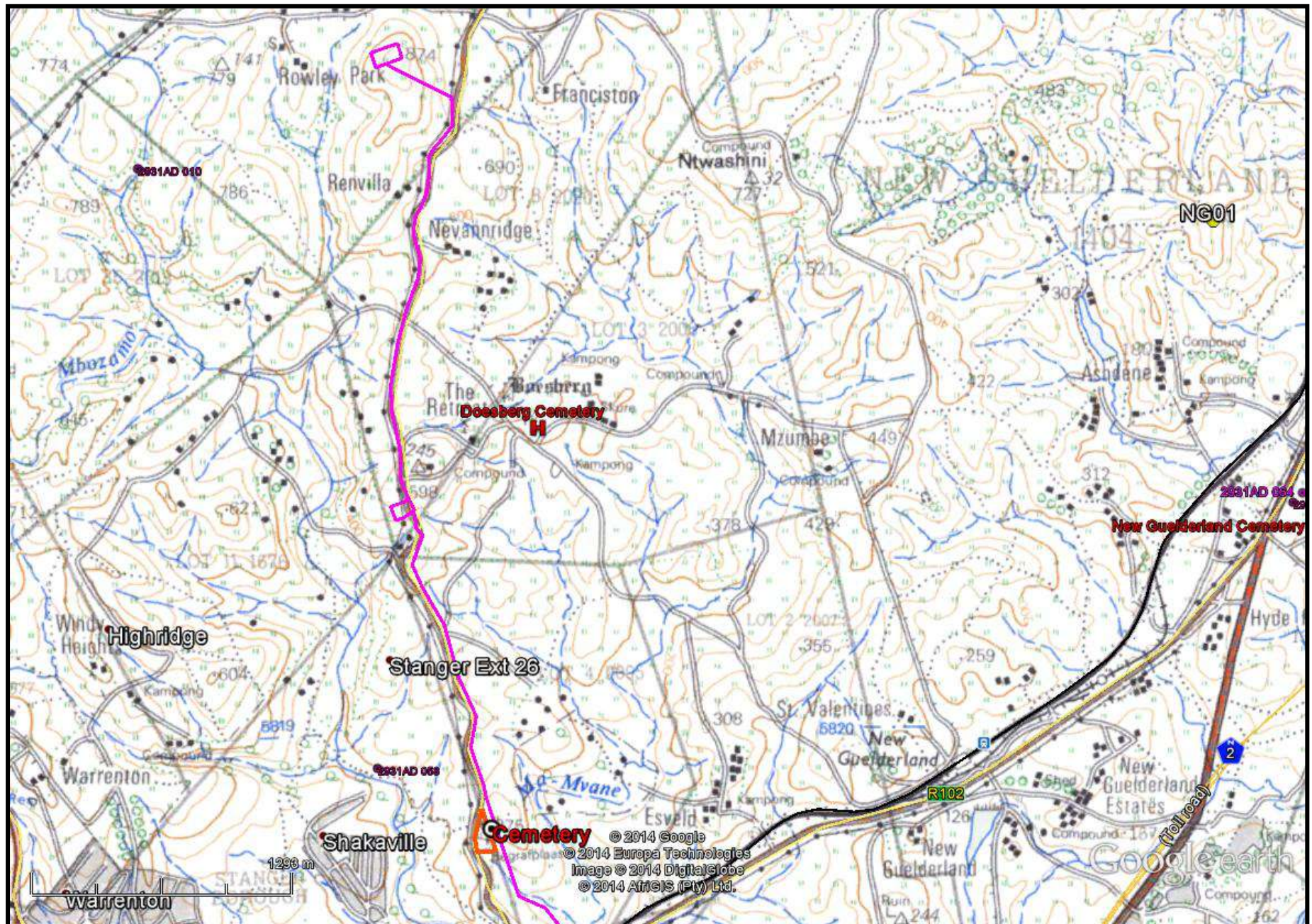
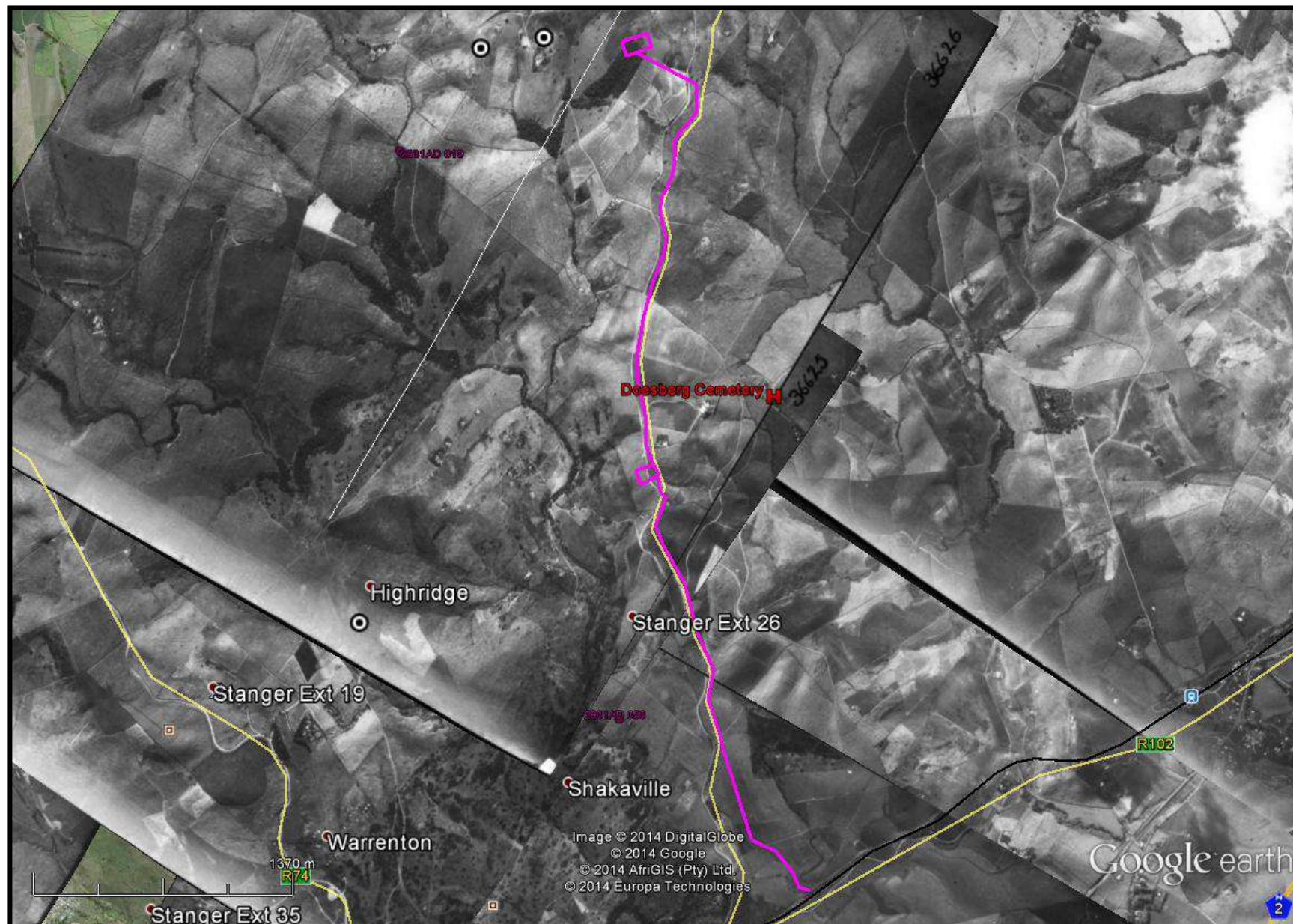


FIG. 7: STUDY AREA IN 1937



FIELD SURVEY

The survey was undertaken in October 2014. The survey followed the footprint on both sides of the road. The older, or northern cemetery, was not photographed, as there was a group of people in the area, presumably paying respects. I believe taking a photograph at that moment would be an intrusion to the people's personal space.

The location of the recorded sites is shown in figure 8.

CEMETERY

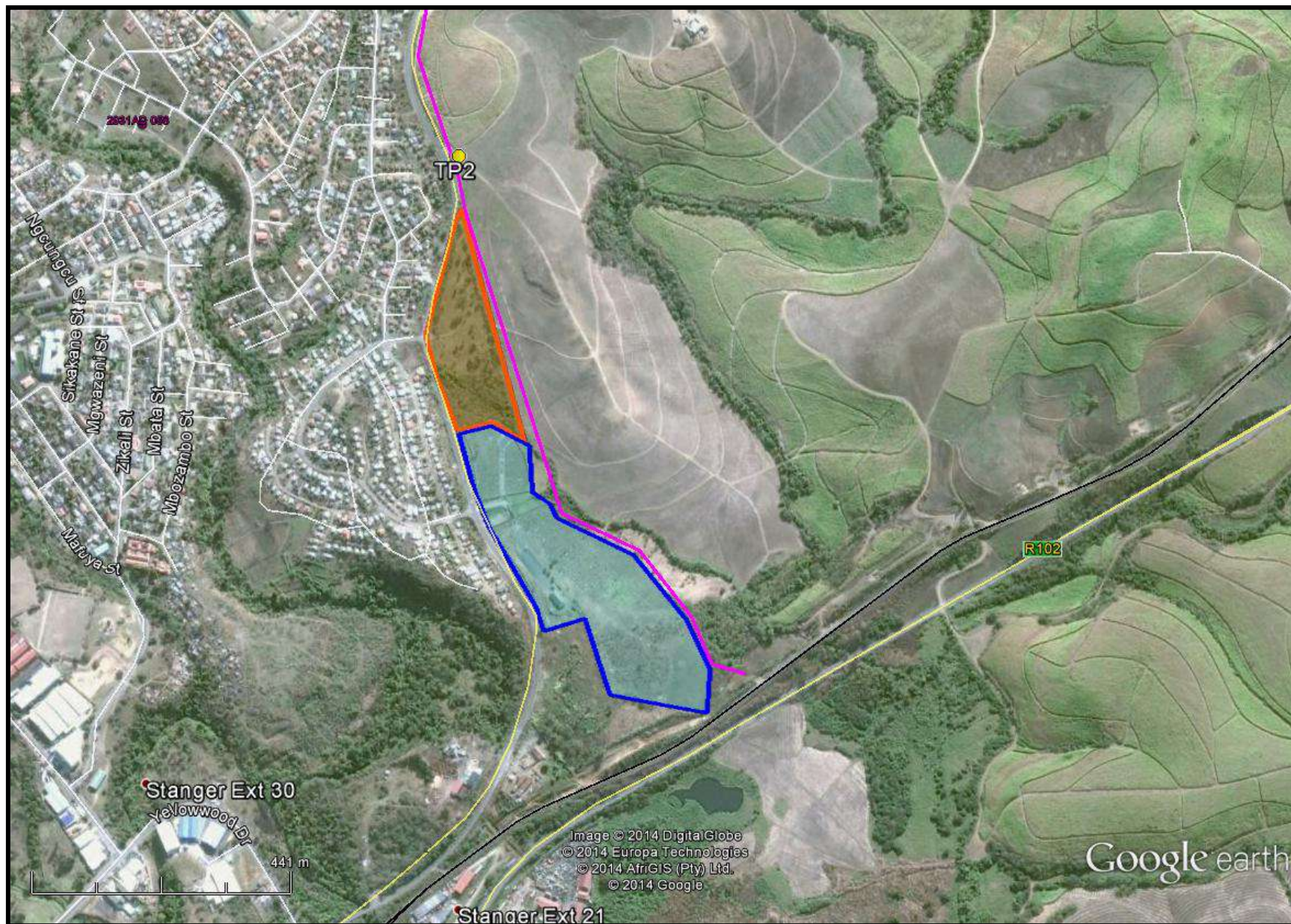
The cemetery that is show on the 1968 topographical map still occurs today and is well maintained. There are several more recent burials in this area, where no headstones have been placed, and only mounds of earth occur. The older part of the cemetery occurs to the north of the cemetery. The more recent cemetery, and crematoria, occurs on the southern half. Fig. 8 shows the extent of the cemetery in relation to the proposed line. The older cemetery is 'fenced' by a line of trees separating it from the sugar cane to the east.

Significance: The cemetery is of high significance, due to its historical aspect and the occurrence of human remains.

Mitigation: A 20m buffer is required between the edge of the cemetery and the development footprint. In this case, the buffer would begin at the trees demarcating the old cemetery. A demarcation, such as a temporary fence, will be required 5m from the edge of the cemetery, and this will need to be erected before construction begins. The pipeline is currently 10m from the old cemetery and will thus need to be moved eastwards.

SAHRA Rating: 3A

FIG. 8: LOCATION OF HERITAGE SITES ALONG THE OFF TAKE 6



TP02

TPO2 is located to the north of the old cemetery. The site is a recent Shembe Circle and appears to be in use (fig. 9).

The current pipeline goes through the middle of the site.

Significance: The site has religious significance.

Mitigation: The Shembe Circle probably does not have a legal status; however, the pipeline should be moved ~20m to the east.

SAHRA Rating 3B

FIG. 9: SHEMBE CIRCLE AT TP02



MANAGEMENT PLAN

The footprint for the new water reservoir will need to be moved slightly to the east near the cemetery and Shembe Circle. A 20m buffer is required between the edge of a heritage site and the pipeline footprint. Heritage sites need to be clearly demarcated with a temporary barrier before construction begins. There needs to be a 5m buffer between the barrier and the heritage site. The buffer will counter for possible post-burial slumping within the grave.

CONCLUSION

An HIA was undertaken for the Off Take 6 bulk water supply line. The project includes a 5km bulk water pipeline and a new reservoir. The HIA noted an historical cemetery, recent cemetery, and an area of religious activity. The line will need to be moved slightly to the east so as not to affect these heritage sites.

**APPENDIX A
SITE RECORD FORM**

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

SITE CATEGORY:

Stone Age	ESA:		MSA		ESA		ISA	
Rock Art	Paintings		Engravings		Other			
Iron Age	EIA:		LIA		IAI			
Historical	Historical Period:		Recent Past (last 60 yrs):	X				

Recorder's Site No.: TP02, and cemetery

Official Name: Lot 4 2005

Local Name:

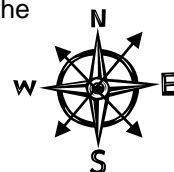
Map Sheet: 2931AD Stanger

GPS reading: S29.322184 E 31.306144 Altitude: 72m
S29.324828 E 31.306216 Altitude: 68m

taken in centre

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION

From Stanger drive north along R102, and take the P107 turnoff left. Old cemetery is north of the new crematoria, and the Shembe circle is just north of the old cemetery.



SITE DESCRIPTION:

Type of Site: Open

Merits conservation: Yes

Threats: Yes

What threats: Possible pipeline

RECORDING:

Digital pictures #: Yes

Tracings :

Drawings:

Recorder/Informant: Name: Gavin Anderson

Address: PO Box 102532, Meerensee, 3901

Date: 10 October 2014

Owner:

References:

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.

Diameter: Length: 340m Width: 100m Depth Height

Pre1968 cemetery and recent Shembe circle.