

**HERITAGE SURVEY OF THE PROPOSED  
MEERENSEE AND BIRDSWOOD RISING MAINS,  
RICHARDS BAY, KWAZULU-NATAL**

**FOR**

**DATE: 11 JUNE 2019**

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## Abbreviations

HP	Historical Period
IIA	Indeterminate Iron Age
LIA	Late Iron Age
EIA	Early Iron Age
ISA	Indeterminate Stone Age
ESA	Early Stone Age
MSA	Middle Stone Age
LSA	Late Stone Age
HIA	Heritage Impact Assessment
PIA	Palaeontological Impact Assessment

## INTRODUCTION

The City of uMhlathuze requires the upgrading of the Meerensee main outfall sewer, the MS2 pump station and the MS9 pump station to accommodate anticipated flows from Mzingazi as well as the upgrading of the Birdswood sewage pump station to accommodate the anticipated additional flows from Mandlanzini in the near future. The following upgrades listed below forms part of the above sewer infrastructure that is required:

- • Birdswood Sewage Pump Station
- • Meerensee 9 Sewage Pump Station (MS9)
- • Meerensee 2 Sewage Pump Station (MS2)
- • Meerensee Outfall Sewer (Garrick Rise)

Fig.'s 1 – 3 show the location of the development.

Umlando was contracted by Exigent Engineering Consultants to undertake the HIA for this project.

FIG. 1 GENERAL LOCATION OF THE STUDY AREA

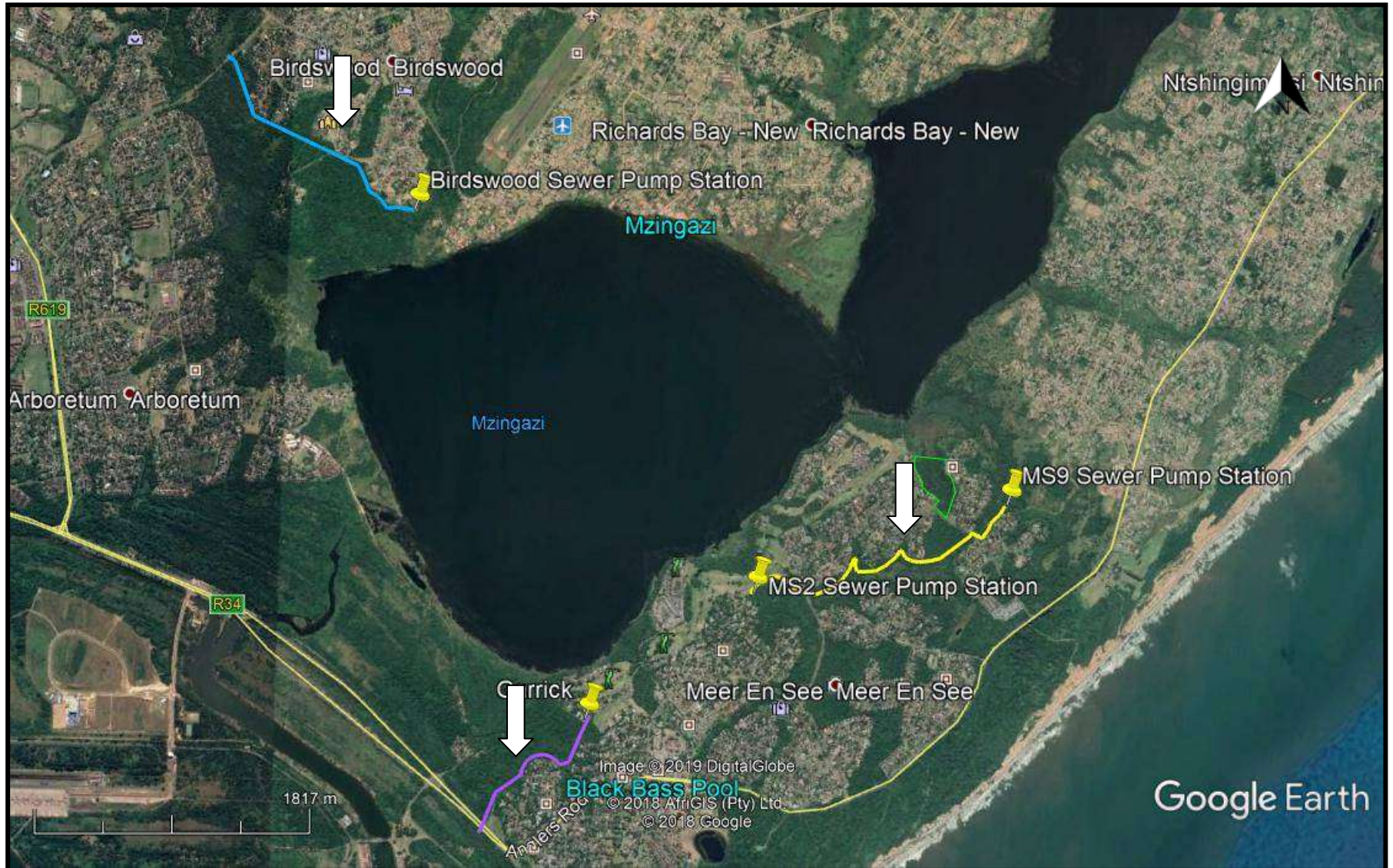




FIG. 2: AERIAL OVERVIEW OF THE STUDY AREA

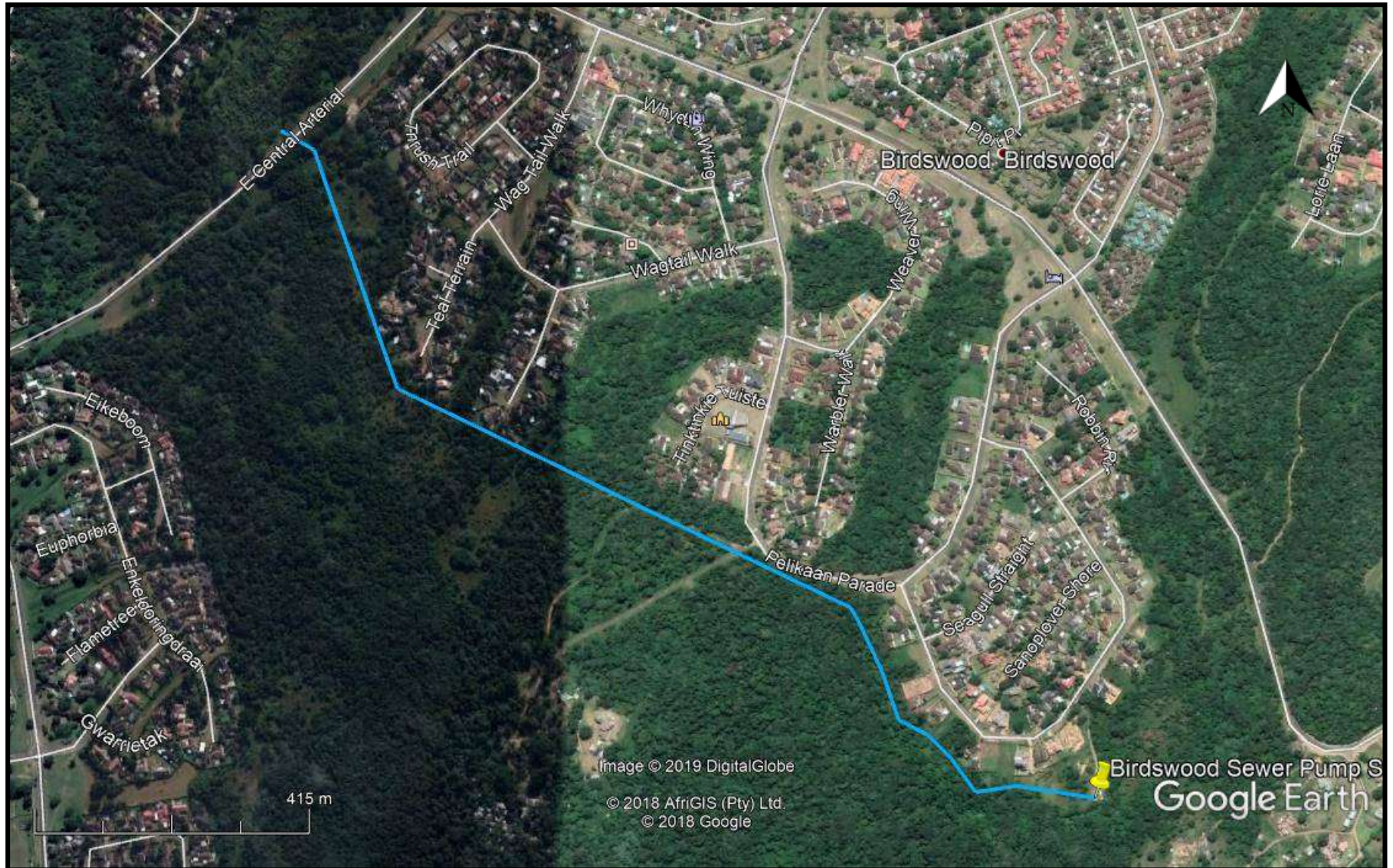




FIG. 2B: AERIAL OVERVIEW OF THE STUDY AREA

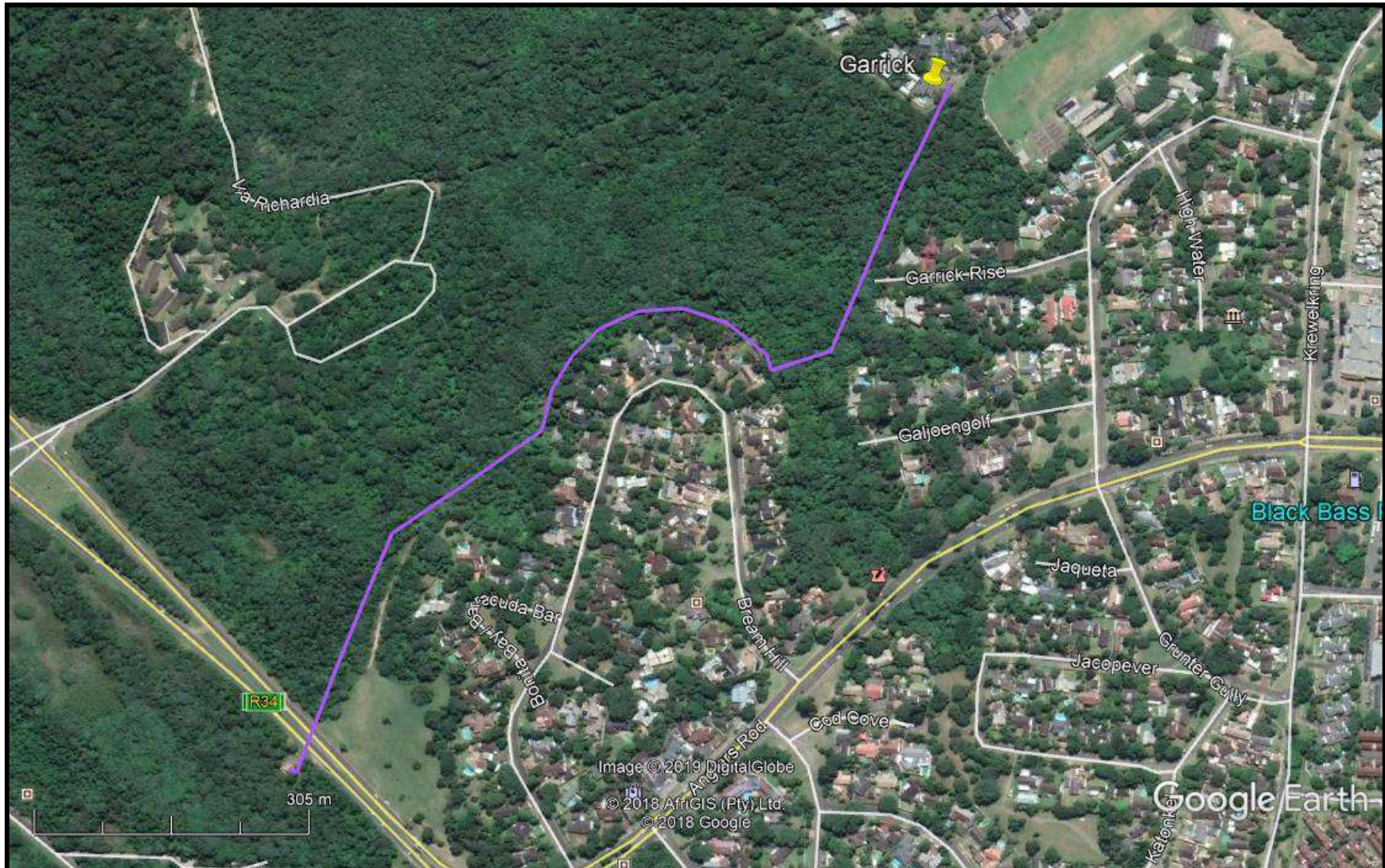








FIG. 3: TOPOGRAPHICAL OVERVIEW OF THE STUDY AREA



**KWAZULU NATAL AMAFA AND RESEARCH INSTITUTE, ACT 05, 2018**

“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 1<sup>st</sup> and 2<sup>nd</sup> 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.

The above significance ratings allow one to grade the site according to SAHRA's grading scale. This is summarised in Table 1.

**TABLE 1: SAHRA GRADINGS FOR HERITAGE SITES**

<b>SITE SIGNIFICANCE</b>	<b>FIELD RATING</b>	<b>GRADE</b>	<b>RECOMMENDED MITIGATION</b>
<b>High Significance</b>	National Significance	Grade 1	Site conservation / Site development
<b>High Significance</b>	Provincial Significance	Grade 2	Site conservation / Site development
<b>High Significance</b>	Local Significance	Grade 3A / 3B	
<b>High Medium Significance</b>	/ Generally Protected A		Site conservation or mitigation prior to development / destruction
<b>Medium Significance</b>	Generally Protected B		Site conservation or mitigation / test excavation / systematic sampling / monitoring prior to or during development / destruction
<b>Low Significance</b>	Generally Protected C		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 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. There are several cemeteries outside of the study area.

The 1937 aerial photographs indicate that there are human settlements along the line. These are shown in Figures 5a-c, and Table 2. These settlements have possible human graves in the area.

The 1943 1:50 000 topographical map only has settlements along the Meerensee Rising Main in the vicinity of the A7 and the pumpstation (fig. 6a-c).

**TABLE 2: LOCATION OF HISTORICAL HUMAN SETTLEMENTS**

NAME	LATITUDE	LONGITUDE
A1	-28.745242978	32.073663058
A2	-28.748759476	32.080041505
A4	-28.749680522	32.082136115
A3	-28.749457873	32.080849457
A5	-28.781682199	32.092010185
A6	-28.782236847	32.093469497
A7	-28.771356730	32.110271821
A8	-28.770608509	32.112090842
A9	-28.769921799	32.114186328
A10	-28.769337096	32.116571123

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

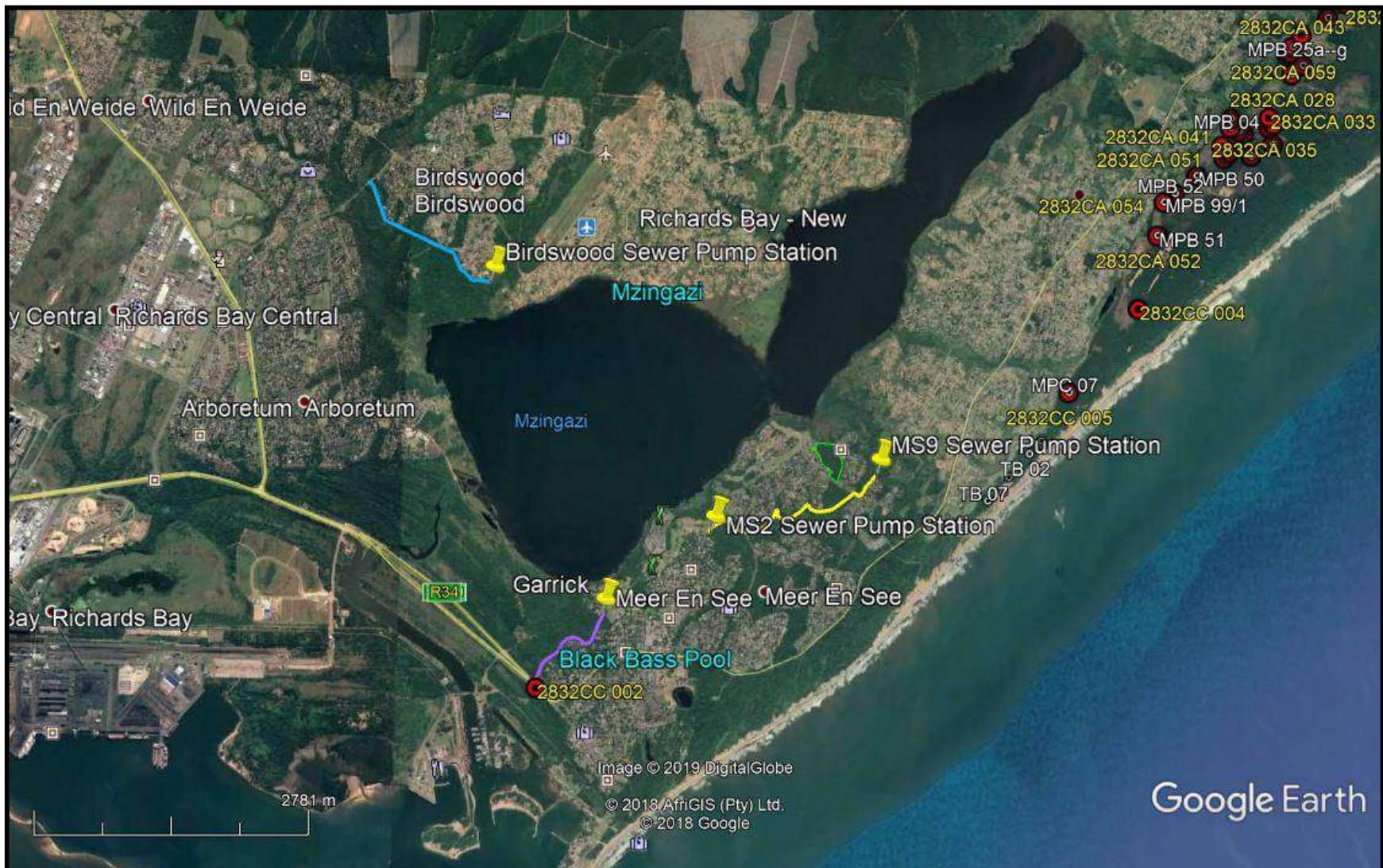




FIG. 5A: STUDY AREA IN 1937<sup>1</sup>



FIG. 5B: STUDY AREA IN 1937

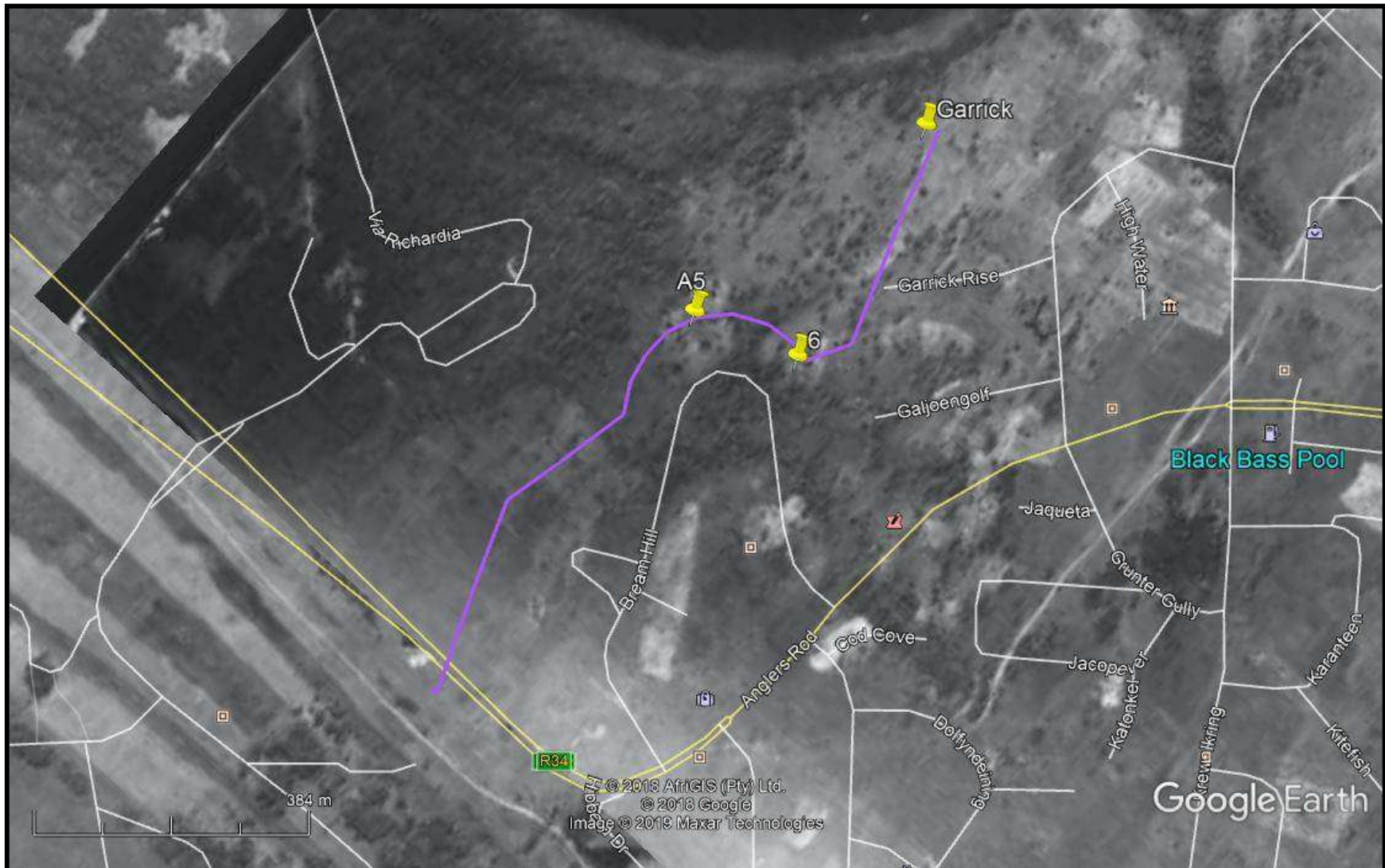


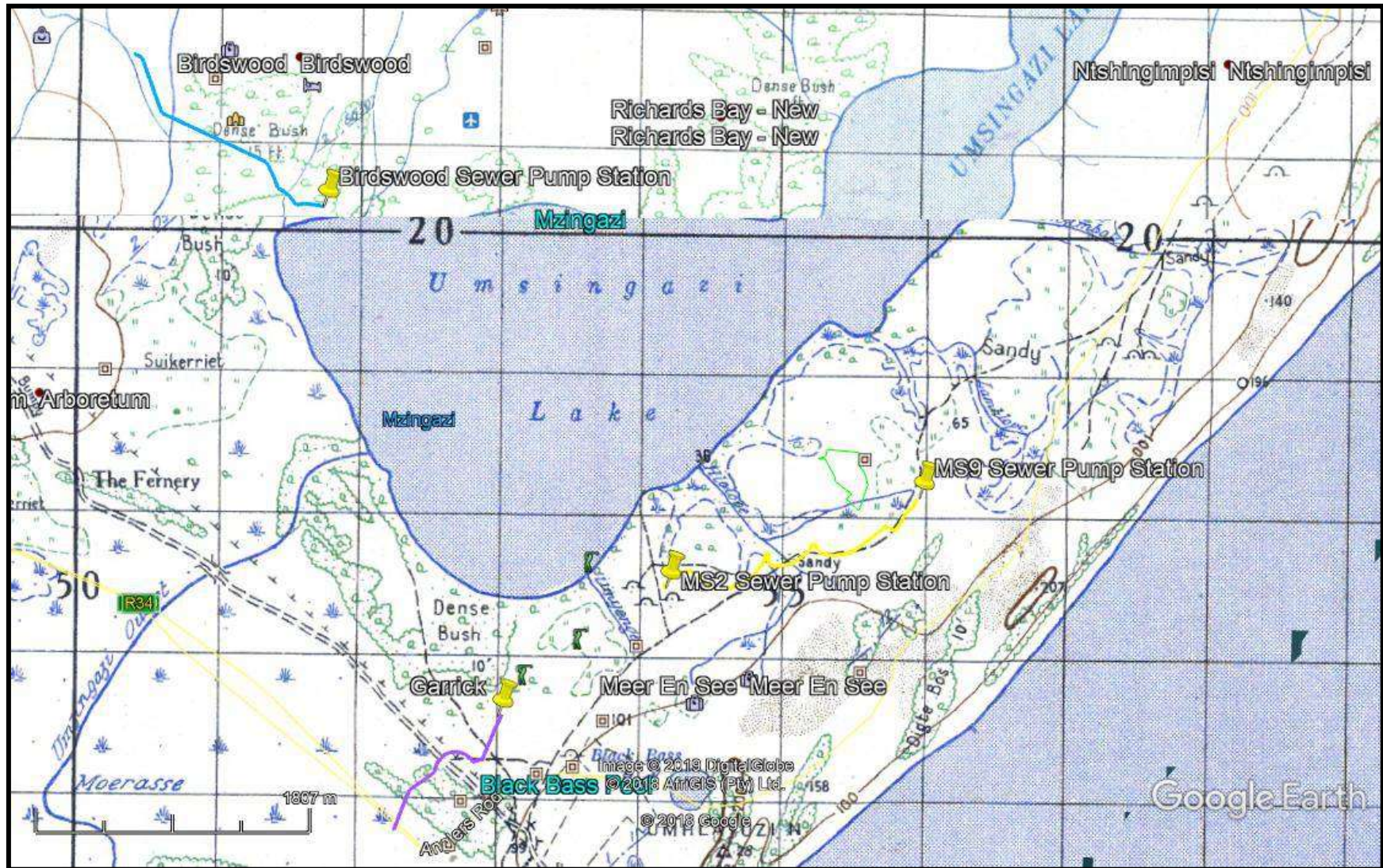


FIG. 5C: STUDY AREA IN 1937





FIG. 6: STUDY AREA IN 1942







The Birdswood line had one area that was accessible via an access road. There is a track running adjacent to the proposed pipeline that had some surface visibility. A single (possible LIA) undecorated pottery shard was noted in a cutting (fig. 10). This suggests that more artefacts, and thus settlements, could occur in the area.

The settlements noted on the 1937 aerial maps were not visible due to dense vegetation and/or the Golf Estate golf course. There is a high chance of human burials occurring in the areas of these settlements as shown by Anderson (1995 – 2004) and Anderson and Anderson (2004 – 2018) in the RBM mining lease.

### **MANAGEMENT PLAN**

All three rising mains should be surveyed after vegetation clearance. Pending the outcome of the survey, some of the rising mains may need to be monitored during construction for potential human remains. This will entail a qualified archaeologist to be on site while pipeline excavations occur. This will be most sensitive at the western end of the Meerensee rising main, and the



FIG. 8: MEERENSEE RISING MAIN



**FIG. 9: MEERENSEE RISING MAIN – GARRICK**



**FIG. 10: POTTERY SHERD AT BIRDSWOOD RISING MAIN**





FIG. 11: BIRDSWOOD RISING MAIN – GARRICK





## CONCLUSION

A heritage survey was undertaken for the upgrading of the Meerensee, Garrick Road, and Birdswood Rising Mains. The desktop study indicated that there were settlements within the pipeline footprint. The proposed pipeline goes through dense coastal dune forest and it was not possible to survey the route. However, a pottery sherd was noted in one area along the Birdswood line. This suggests that archaeological sites would occur in the pipeline route.

I suggested that the pipeline route is surveyed once vegetation clearance has occurred. Certain areas might require onsite monitoring during excavations.

## REFERENCES

117B Flight path 60, photo 66307  
117B Flight path 61, photos 54710 - 54712  
2832CA KwaMbonambi 1:50 000 topographical map 1943, 2000  
2830CC Richards Bay 1:50 000 topographical map 1943, 2000  
Natal Museum Site Record Database  
SAHRIS database  
Umlando Database

### **EXPERIENCE OF THE HERITAGE CONSULTANT**

Gavin Anderson has a M. Phil (in archaeology and social psychology) degree from the University of Cape Town. Gavin has been working as a professional archaeologist and heritage impact assessor since 1995. He joined the Association of Professional Archaeologists of Southern Africa in 1998 when it was formed. Gavin is rated as a Principle Investigator with expertise status in Rock Art, Stone Age and Iron Age studies. In addition to this, he was worked on both West and East Coast shell middens, Anglo-Boer War sites, and Historical Period sites.

### **DECLARATION OF INDEPENDENCE**

I, Gavin Anderson, declare that I am an independent specialist consultant and have no financial, personal or other interest in the proposed development, nor the developers or any of their subsidiaries, apart from fair remuneration for work performed in the delivery of heritage assessment services. There are no circumstances that compromise the objectivity of my performing such work.

A handwritten signature in black ink, appearing to read 'G Anderson', with a horizontal line underneath.

Gavin Anderson  
Archaeologist/Heritage Impact Assessor