

**SURVEY OF THE PROPOSED ULUNDI POLICE
ACADEMY SHOOTING RANGE, KWAZULU-NATAL**

FOR ENANELA

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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

Umlando was requested to undertake a heritage survey of the proposed Ulundi Police Academy shooting range. The funding is provided for by the Department of Public Works.

The proposal is to expand the existing shooting range to include more shooting ranges on the adjacent land. The total site area is 66630 m² while the building footprint is 2235m²

Figures 1 – 3 show the locality of the site. Figure 4 shows some of the views of the study area.

FIG. 1 GENERAL LOCATION OF THE STUDY AREA

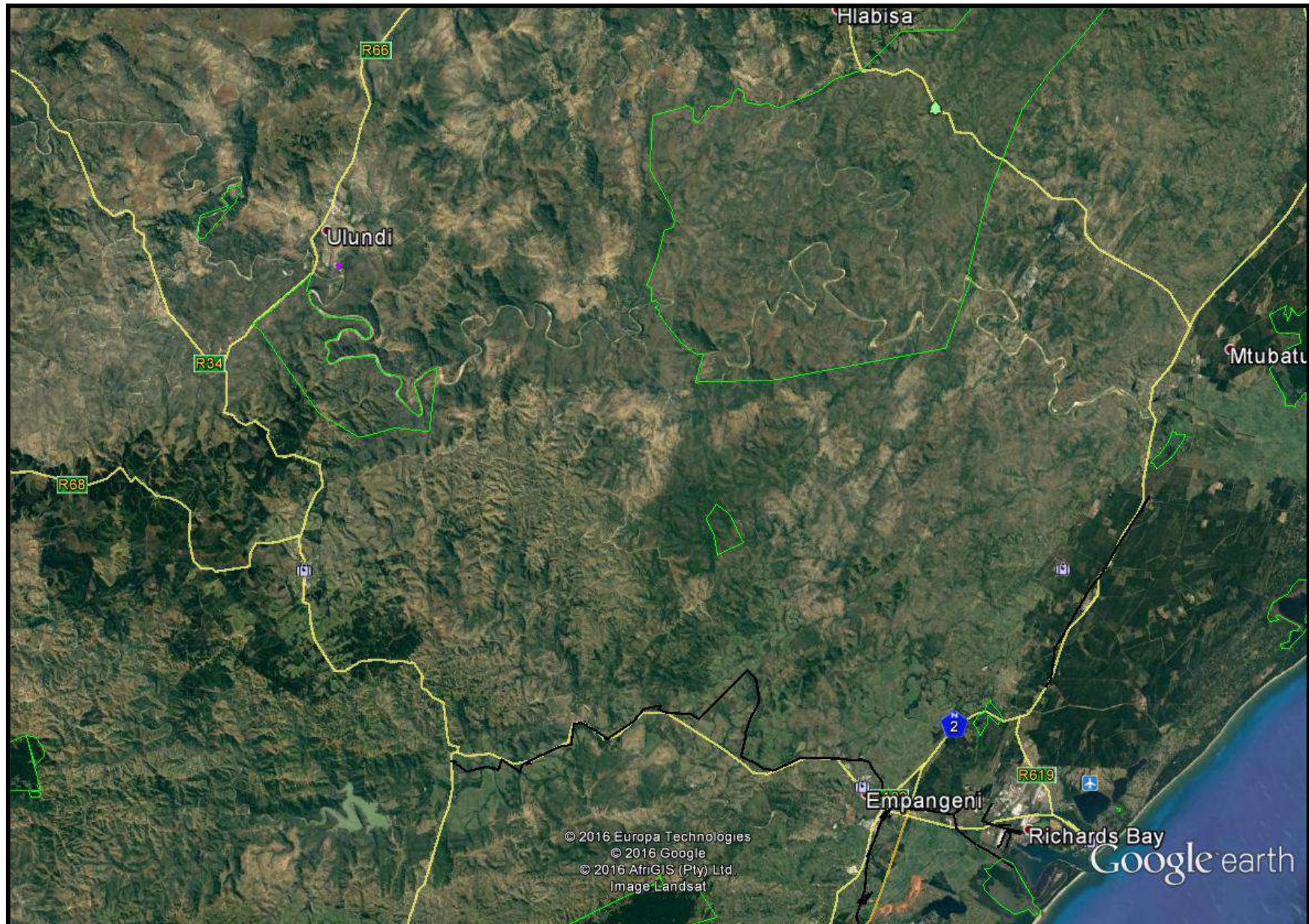


FIG. 2: AERIAL OVERVIEW OF THE STUDY AREA



FIG. 3: TOPOGRAPHICAL OVERVIEW OF THE WESTERN STUDY AREA

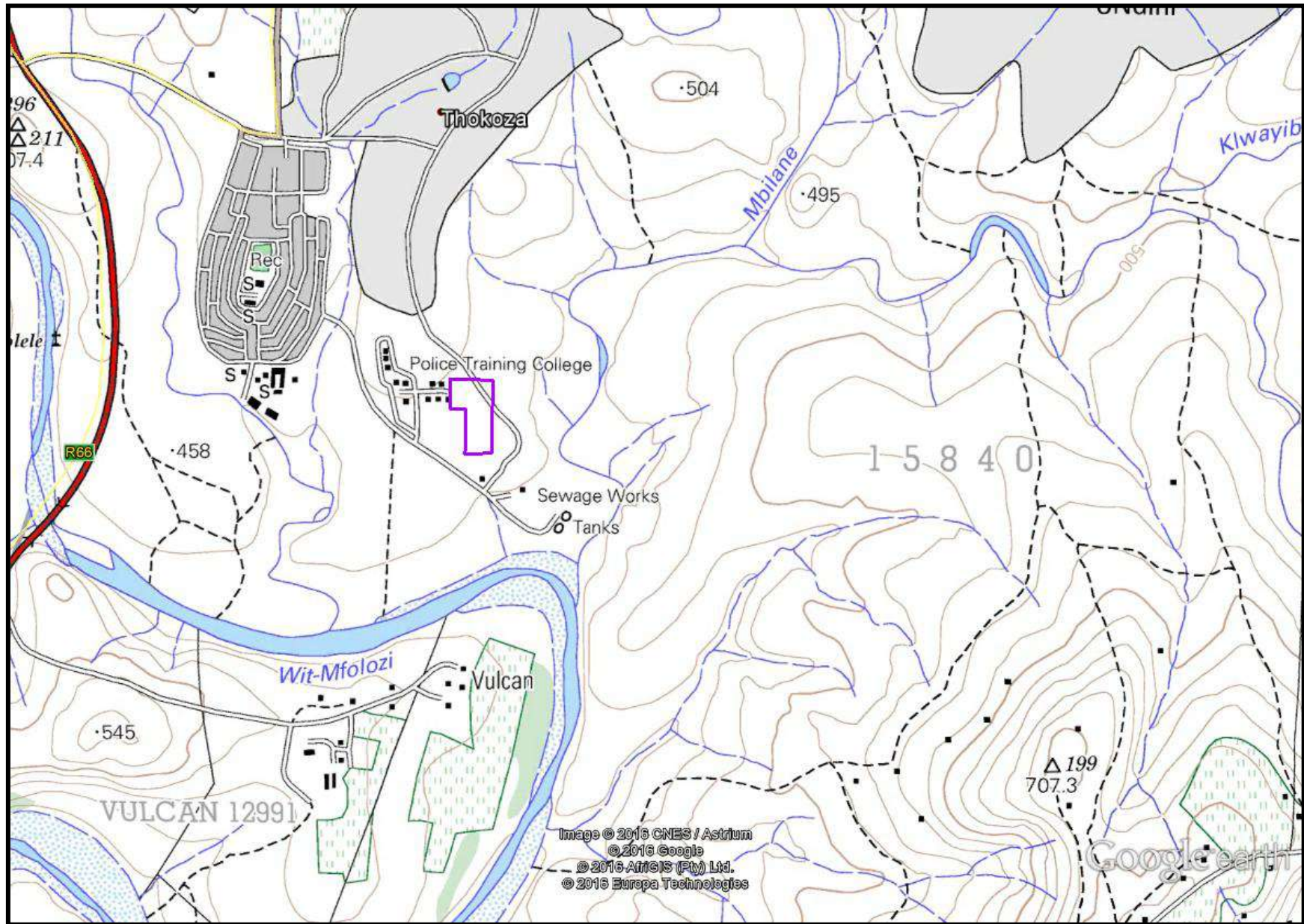


FIG. 4: SCENIC VIEWS OF THE STUDY AREA



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- A notice referred to in subsection (2) may, by notice in the *Gazette*, be amended or withdrawn by the Council.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.

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

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		Site conservation or mitigation prior to development / destruction
Medium Significance	Generally Protected B		Site conservation or mitigation / test excavation / systematic sampling / monitoring prior to or during development /

Low Significance	Generally Protected C	destruction	
		On-site monitoring archaeological required prior to development /	sampling or no mitigation during 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. 5). These sites include all types of Stone Age and Iron Age sites, as well as war graves relating to the Anglo-Zulu War. No sites occur in the study area.

The 1937 aerial photographs show that the area is undeveloped (fig. 6). There are several large trees visible on the aerial photographs that relate to the location of existing trees (*E. ingens*) in the area today.

The 1968 1:50 000 topographical map shows that this area is still undeveloped (fig. 7).

The desktop study thus indicates that the area has been undeveloped for more than 80 years, .i.e. it has never been developed nor used for agricultural activity.

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

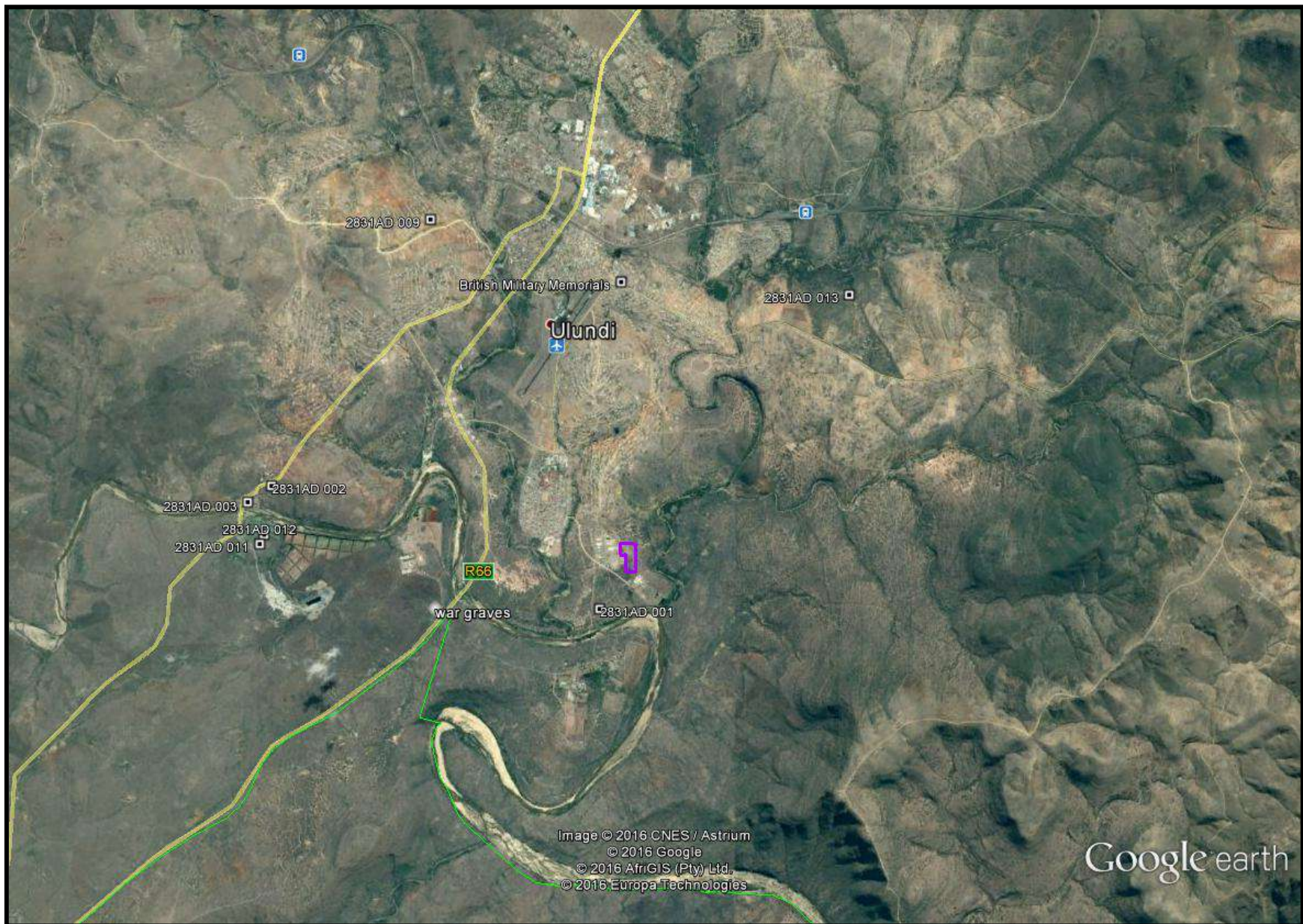
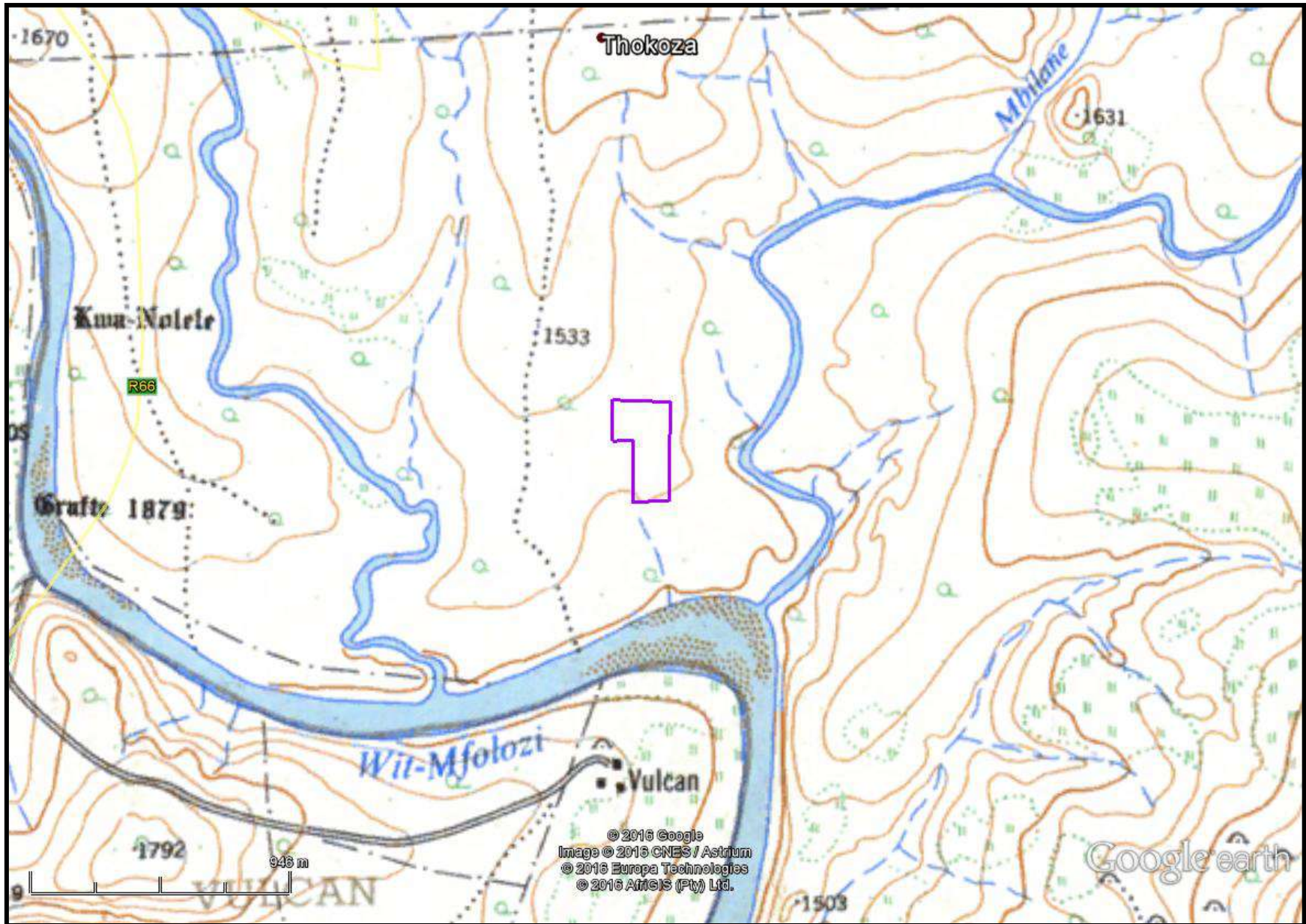


FIG. 6: STUDY AREA IN 1937



FIG. 7: STUDY AREA IN 1968



FIELD SURVEY

A field survey was undertaken in July 2016. Archaeological visibility was very good partially due to the drought and winter season. Presumed sand winnowing has heavily disturbed the study area. Large parts of the area have excavations more than 1m deep and at times it reaches the sandstone bedrock. Several of these excavations have been backfilled with illegal dumping.

Two types of sites occur on the study hill: a Stone Age scatter, and Historical Period graves.

The entire hill is a large scatter of stone tools in a secondary context. The tools date to the Middle Stone Age and the Late Stone Age and are most visible in erosion gullies where they lie on the bedrock. The MSA tools are the more common artefacts. The stone tools are made on hornfels, quartzite, and quartz. The tools consist of flakes, unifacial points, irregular cores, upper grinding stones (and hammer stones). Figure 8 shows some of these tools.

There are five old *Euphorbia ingens* (pincushion Euphorbia) in the general study area. Euphorbias are historically associated with human graves. That is, they were planted on top of human graves in historical times. Similar trees used to demarcate graves are *Erythrina spp.* (coral tree) and *Ziziphus mucronata* (buffalo thorn). The survey ignored *Euphorbia ingens* that were obviously recent. Table 2 gives the location of these euphorbias.

NAME	LATITUDE	LONGITUDE	DESCRIPTION
303	-28.344512000	31.427130000	<i>E. ingens</i>
304	-28.345268000	31.427859000	<i>E ingens ugs</i>
305	-28.352956000	31.436622000	<i>E ingens</i>
306	-28.342626000	31.426667000	<i>E ingens</i>
307	-28.342801000	31.426370000	<i>E ingens</i>
308	-28.345364000	31.428837000	<i>E ingens lgs</i>

FIG. 8: STONE TOOLS IN THE STUDY AREA



***E. ingens* 303**

This is the largest *E. Ingens* in the study area (fig. 9). No artefacts are directly associated with the plant.

FIG. 9: *E. INGENS* 303



***E. ingens* 304**

This is the second largest *E. Ingens* in the study area (fig. 10). Two upper grinding stones are located near the plant.

FIG. 10: E. INGENS 304



***E. ingens* 306**

This is the youngest recorded *E. Ingens* in the study area (fig. 11). This plant may not be a grave, but it was recorded as such due to its similarity in size to *E. Ingens* 307

FIG. 11: E. INGENS 306



***E. ingens* 307**

This is *E. Ingens* occurs near one of the sand mining areas (as with the previous plant). There is one pottery sherd next to the tree and the sand has an ashy texture and colour (fig. 12). This indicates some form of archaeological deposit.

FIG. 12: E. INGENS 307



***E. ingens* 308**

This is *E. Ingens* is probably just outside of the study area (fig. 13). Two upper grinding stones and a lower grinding stone are located near the plant.

FIG. 13: E. INGENS 305



The locations of these plants are shown in fig. 14.

FIG. 14: LOCATION OF RECORDED *E. INGENS*



PALAEONTOLOGICAL IMPACT ASSESSMENT

The study area is coded blue on the SAHRIS palaeosensitivity map (fig. 15). No palaeontological assessment is currently required. However, if any excavations occur deeper than 1.5m into the existing bedrock then a PIA might be required.

FIG. 15: PALAEONSENSITIVITY MAP



COLOUR	SENSITIVITY	REQUIRED ACTION
RED	VERY HIGH	field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	desktop study is required
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

MANAGEMENT PLAN

The stone tools in the study area form part of a general stone tool scatter that occurs over the entire hill and the rest of the Ulundi area. All of the hills in the surrounding area have similar artefacts, none of which is in primary context. The tools do not represent a site *per se*, are of low significance and require no further mitigation. A permit for their disturbance due to any construction work is not required.

Each *E. ingens* in the study area, and the general area, is of high significance until proven otherwise. These plants are probably grave markers, and thus human remains could occur below the plant itself. The trees probably predate 1937 as seen in the historical maps and the mere fact that there are no artefacts from the last 50 years associated with the trees.

The proposed development has two options regarding the possible graves: demarcation or relocation.

Demarcation:

Each tree will require a 20m buffer between the edge of the tree and any construction. Each tree will need to be clearly demarcated with the demarcation occurring 5m from the tree. Since the area will have a lot of activity, the demarcation needs to be a permanent one such as a fence. No construction and/or earthmoving activity may occur within the 20m buffer.

Relocation:

Relocation is an option; however, it is a costly and lengthy process. The process of grave removals is a complex one that requires community consultation, advertisements, several permits, and finally reburial. Moreover,

those graves older than 60 years require a qualified archaeologist to undertake the entire process. This process is summarised as follows¹:

In terms of the National Heritage Resources Act (No. 25 of 1999), and KZN Heritage Act of 1997 and 2008, graves older than 60 years (not in a municipal graveyard) are protected. Only a registered undertaker should handle human remains younger than 60 years or an institution declared under the Human Tissues Act. Anyone who wishes to develop an area where there are graves older than 60 years is required to follow the process described in the legislation (section 36 and associated regulations). The specialist will require a permit from the heritage resources authority:

- Determine/ confirm the presence of the graves on the property. Normally the quickest way to proceed is to obtain the service of a professional archaeologist accredited to undertake burial relocations. The archaeologist will provide an estimate of the age of the graves. There may be a need for archival research and possibly test excavations (permit required).
- The preferred decision is to move the development so that the graves may remain undisturbed. If this is done, the developer must satisfy SAHRA/KZN Heritage that adequate arrangements have been made to protect the graves on site from the impact of the development. This usually involves fencing the grave (yard) and setting up a site management plan indicating who will be responsible for maintaining the graves and how this is legally tied into the development. It is recommended that a distance of 10-20 m is left undisturbed between the grave and the fence around the graves.
- If the developer wishes to relocate or disturb the graves:

¹ Information supplied by SAHRA, and it applies to KZN, although falling under the KZN Heritage Act.

- A 60-day public participation (social consultation) process as required by section 36 (and regulations - see attachment), must be undertaken to identify any direct descendants of those buried on the property. This allows for a period of consultation with any family members or community to ascertain what their wishes are for the burials. It involves notices to the public on site and through representative media. The archaeologist, who can explain the process, may do this but for large or sensitive sites, a social consultant should be employed. Archaeologists often work with undertakers, who rebury the human remains.
- If, because of the public participation, the family (where descendants are identified) or the community agree to the relocation process then the graves may be relocated.
- The archaeologist must submit a permit application to SAHRA/KZN Heritage for the disinterment of the burials. This must include written approval of the descendants or, if there has not been success in identifying direct descendants, written documentation of the social consultation process, which must indicate to SAHRA's satisfaction, the efforts that have been made to locate them. It must also include details of the exhumation process and the place to which the burials are to be relocated. (There are regulations regarding creating new cemeteries and so this usually means that relocation must be to an established communal rural or formal municipal cemetery.)
- Permission must be obtained before exhumation takes place from the landowner where the graves are located, and from the owners/managers of the graveyard to which the remains will be relocated.
- Other relevant legislation must be complied with, including the Human Tissues Act (National Department of Health) and any

ordinances of the Provincial Department of Health). The archaeologist can usually advise about this.

Reburial might be an option considering that the area will be a shooting range and it will be inappropriate for human remains to occur amongst the various targets. The entire hill is covered with these older *E. ingens* plants; however, this HIA study was only in a specified area. Another option would be to build the shooting range, and the various sub-ranges, in areas where these plants do not occur.

Before reburial is undertaken, the developer has an option of testing to see if there are human remains underneath the plants. This will entail removing the plant (mechanically) and then undertaking test pit excavations to determine if there is a grave feature and/or actual human remains. If a grave feature and/or human remains occur then excavations, would halt, the excavation hole will be backfilled and the area will be treated as a human grave. The grave removal process will then follow. If no evidence for a human grave and/or remains occurs, then the plant will not be considered as a grave and construction activity may continue.

CONCLUSION

An HIA was undertaken for the proposed expansion of the Ulundi SAPS Academy shooting range. Several stone tools were noted in the study area and these are of low significance. Three are five *Euphorbia ingens* plants that are probably linked with human graves within, or nearby, the study area. All of these plants need to be treated as graves until proven otherwise. The developer has a choice of demarcating and redesigning the shooting range so that it does not affect the graves. It is not desirable to have isolated *E. ingens* amongst various shooting ranges. The alternative is to relocate the graves.