

**HERITAGE IMPACT ASSESSMENT FOR THE  
DRY CUT HOUSING PROJECT, MADADENI AMAJUBA  
DISTRICT  
FOR BIZYCON (PTY) LTD**

**DATE: 8 DECEMBER 2019**

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## EXECUTIVE SUMMARY

*The Amajuba District Municipality in collaboration with the KZN Department of Human Settlements proposed to formalise the Drycut settlement near Madadeni, within the Amajuba District. In all about 1000 residential units are envisaged to be constructed. It is expected that houses will be constructed on the compounds of qualifying beneficiary. This will also include the upgrade of internal roads and also pipelines for water reticulation. A Basic Assessment (EIA) process is being undertaken by Bizycon (PTY) Ltd.*

*Umlando was contracted by Bizycon (PTY) Ltd to undertake the HIA aspect of the development. A heritage survey was undertaken for the proposed Drycut Housing Project and related infrastructures. Much of the area will occur on existing plots, while roads will be upgraded, and new pipelines will be installed. The area north of the P483, or Madadeni Rd, is less disturbed. Two settlements were not on the 1944 topographical map and these were surveyed during the field visit. The remains of one settlement with possible human grave was noted. This grave will need to be mitigated in the form of possible pre-public participation process, and then through social consultation. This will need to be approved by Kwazulu Natal Amafa and Research Institute who will also issue the permits.*

*A Shembe Temple was also noted and discussion with the affected community will be required if the temple is to be moved.*

*The PIA desktop noted that while the underlying formations are very rich in fossil remains, they are highly weathered. It is thus unlikely that fossil remains will be found in the upper formations. A 'Chance Find Protocol' notes that any fossil material needs to be reported to KwaZulu-Natal Amafa and Research Institute.*

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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 Amajuba District Municipality in collaboration with the KZN Department of Human Settlements proposed to formalise the Drycut settlement near Madadeni, within the Amajuba District. In all about 1000 residential units are envisaged to be constructed. It is expected that houses will be constructed on the compounds of qualifying beneficiary. This will also include the upgrade of internal roads and also pipelines for water reticulation.

A Basic Assessment (EIA) process is being undertaken by Bizycon (PTY) LTD and an application for authorisation for this project will be submitted to the KZN Department of Economic Development, Tourism & Environmental Affairs (EDTEA).

Umlando was contracted by Bizycon (PTY) Ltd to undertake the HIA aspect of the development.

FIG. 1 GENERAL LOCATION OF THE PROPOSED DEVELOPMENT

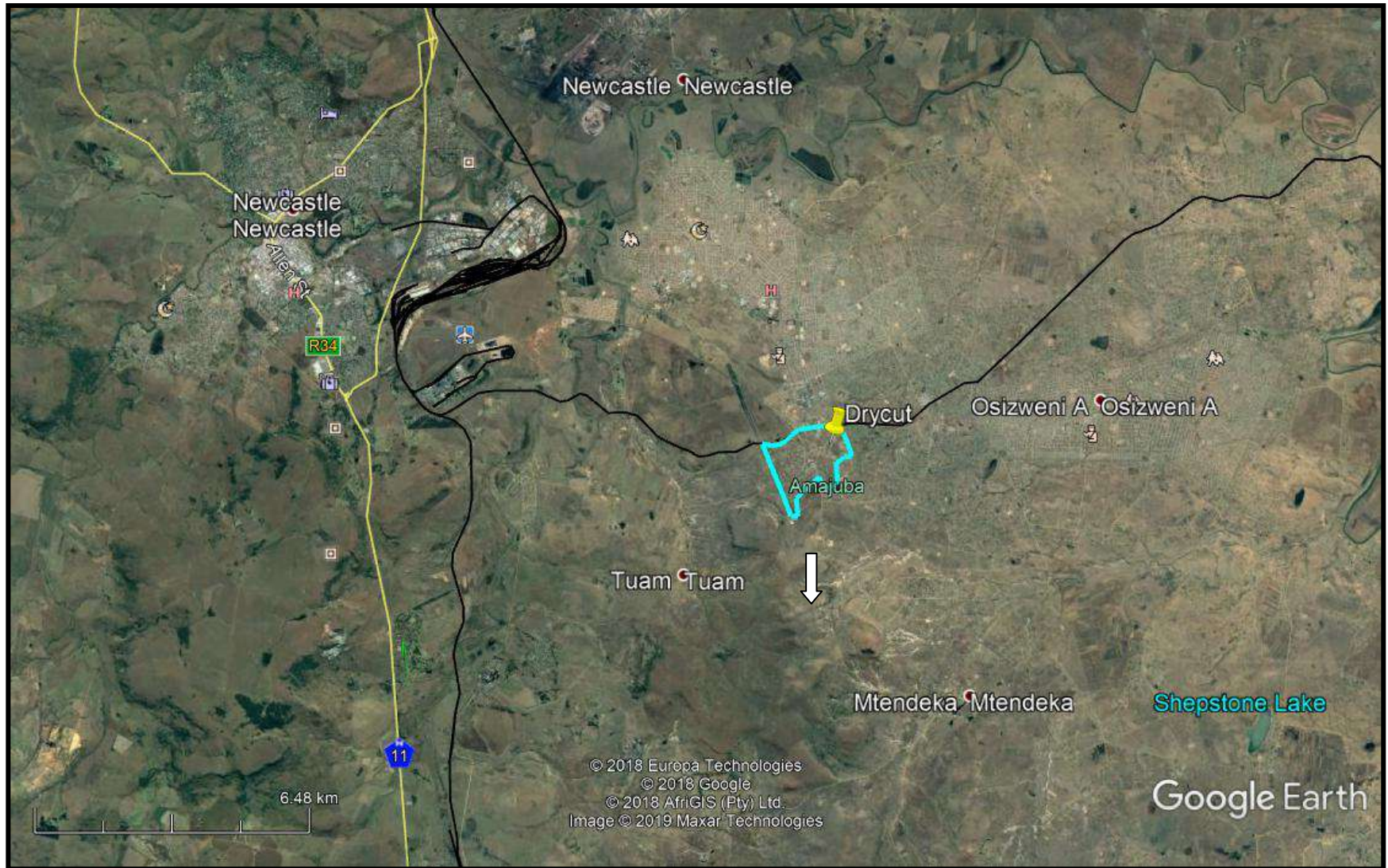


FIG. 2: AERIAL OVERVIEW OF THE PROPOSED DEVELOPMENT

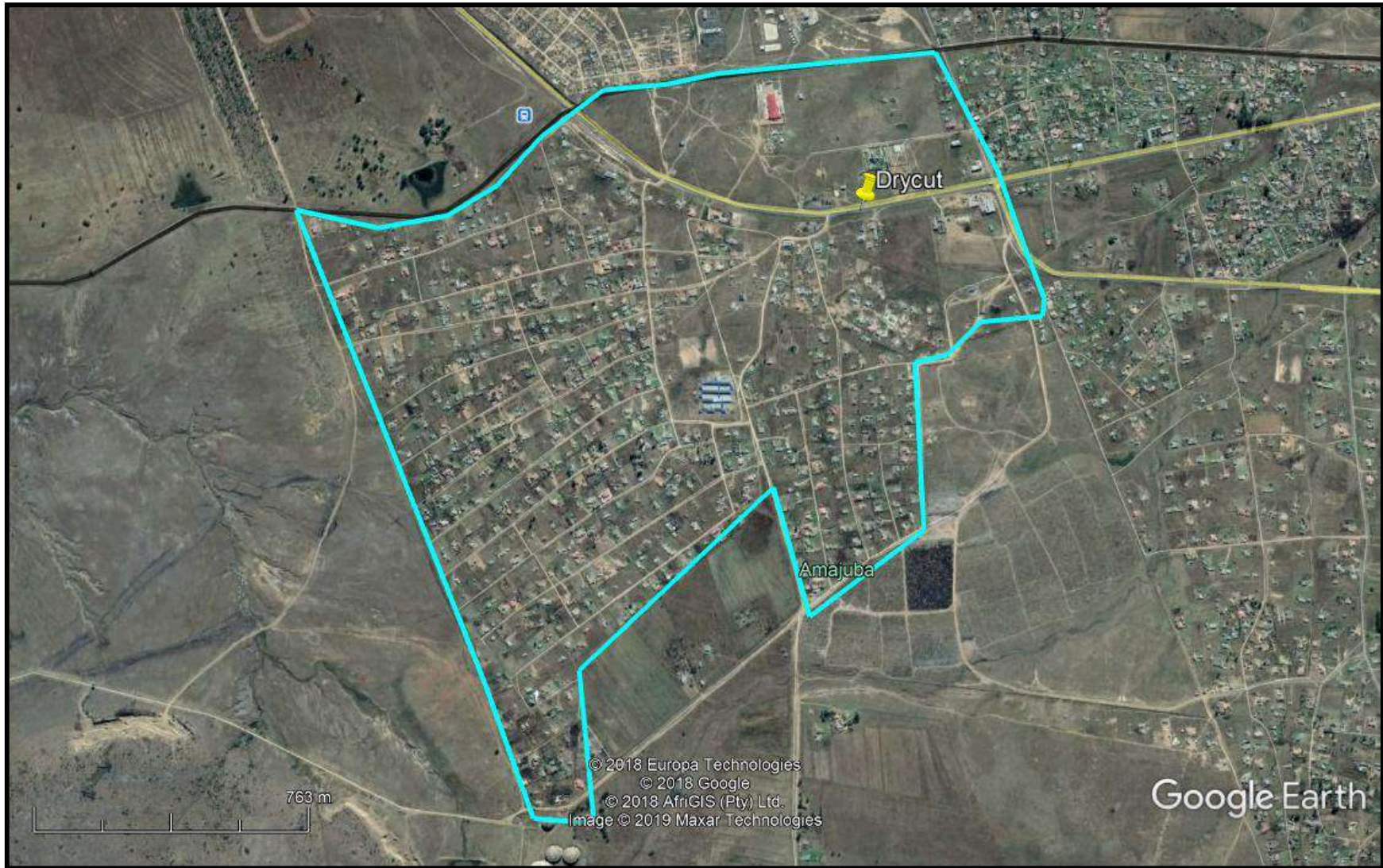


FIG. 3: TOPOGRAPHICAL MAP OF THE PROPOSED DEVELOPMENT

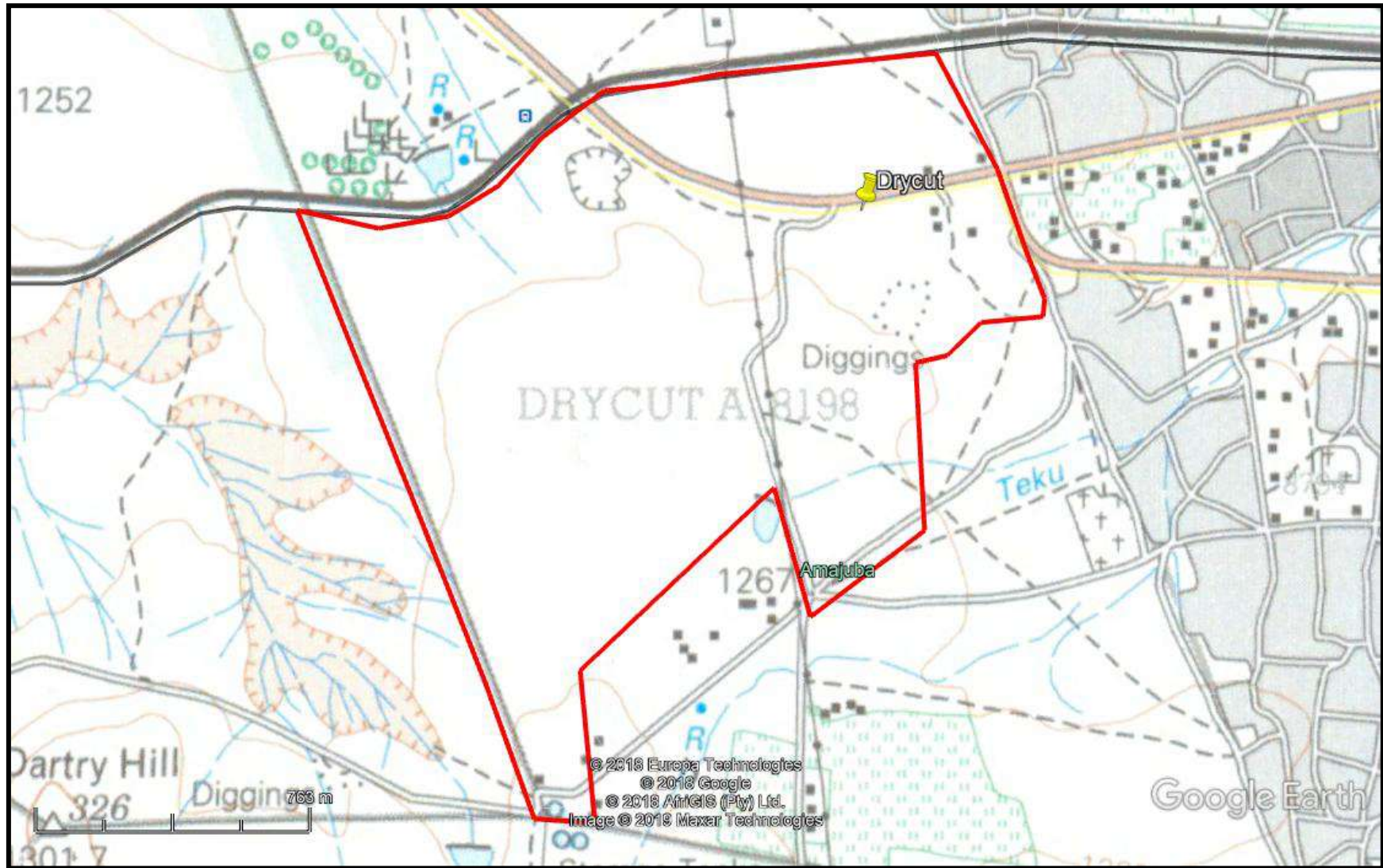




FIG. 4: SCENIC VIEWS OF THE STUDY AREA



**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.”

## 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 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.

## 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. There have been no prior surveys in the study area. The archaeological sites tend to be open Stone Age scatters of low significance (fig. 5). The other sites are HP cemeteries and/or cemeteries relating to the Anglo-Boer War. The lack of heritage sites is due to few systematic surveys in the area.

The Erf Drycut 8198 was first surveyed and subdivided in 1912 (fig. 6). It would have been sold or leased shortly thereafter.

Fig. 7 indicates that there were no buildings in the study area in 1935. The study area was farmland, mostly used for grazing. The farmhouse of Drycut is visible in the aerial photo.

Fig. 8 shows the study area in 1944. There are two settlements on the northern side of the road. The houses are probably farm labourers' houses. These houses are likely to have human graves as the area is still considered to be rural and traditional burial practices would occur. This is regardless that there is a cemetery shown to the east of the study area on the 1944 map...



FIG. 5: LOCATION OF KNOWN HERITAGE SITES IN THE GENERAL AREA

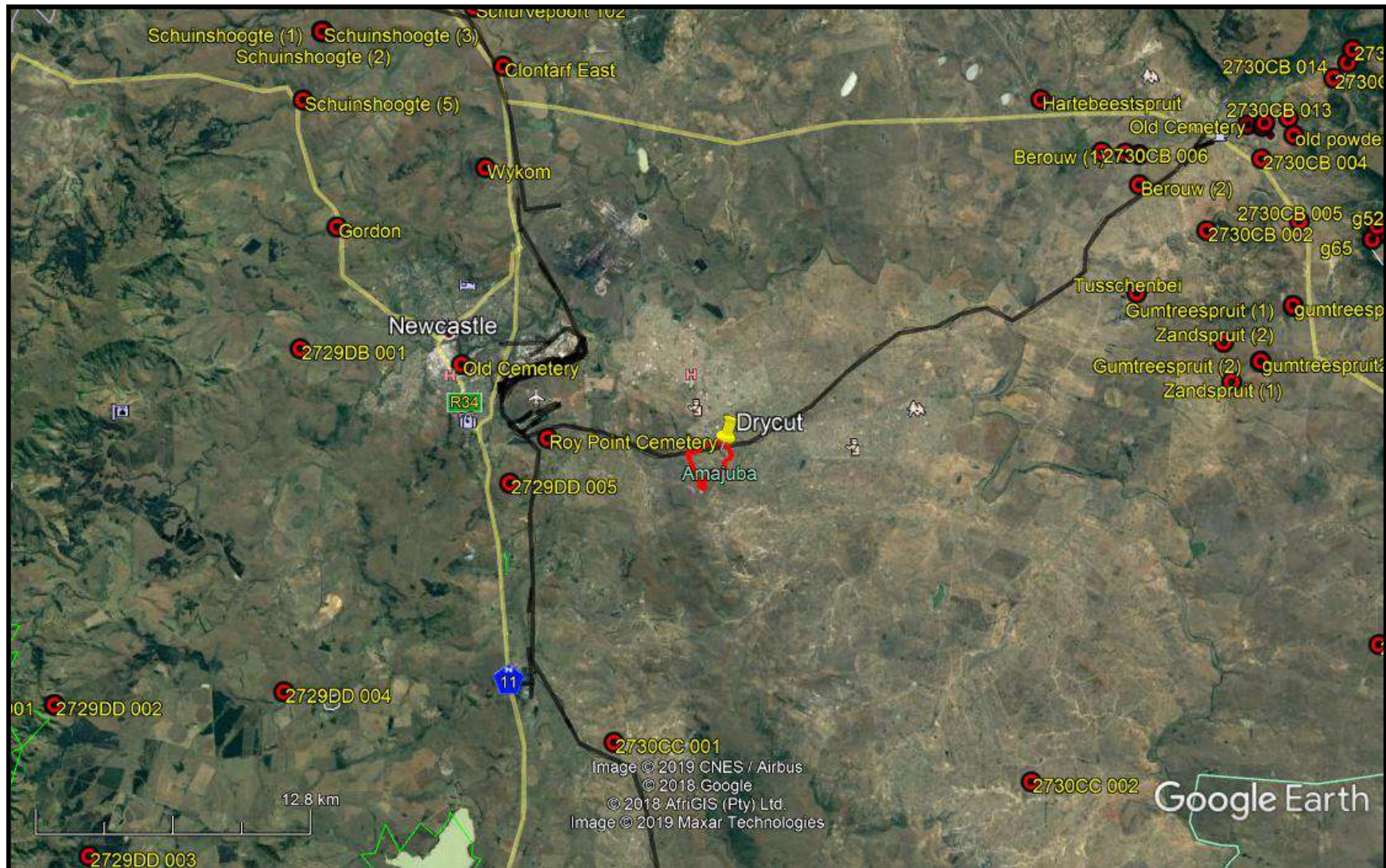


FIG. 6: SURVEYOR GENERAL MAP OF DRYCUT HT (1912)

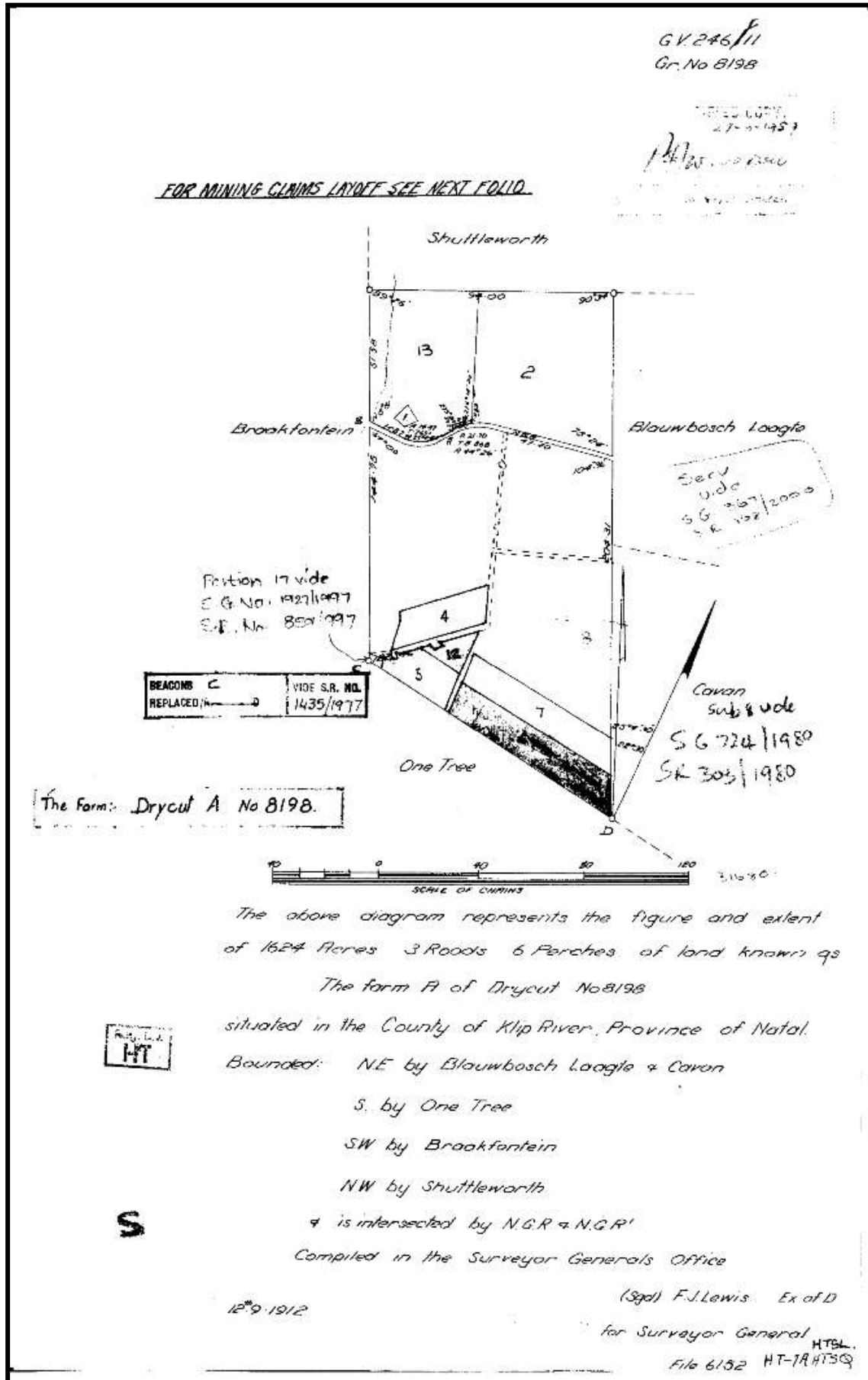


FIG. 7: LOCATION OF PROPOSED DEVELOPMENT IN 1935

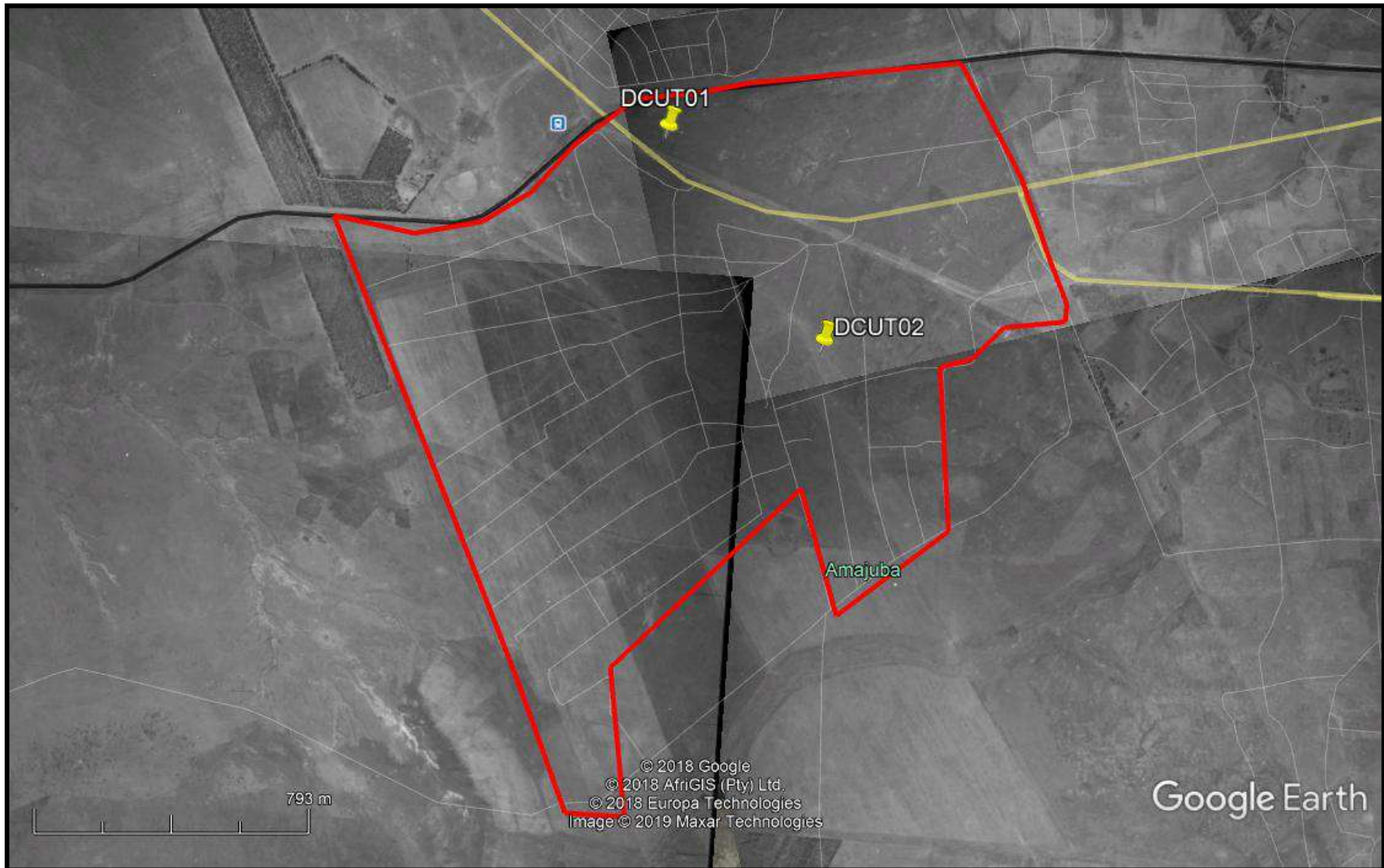
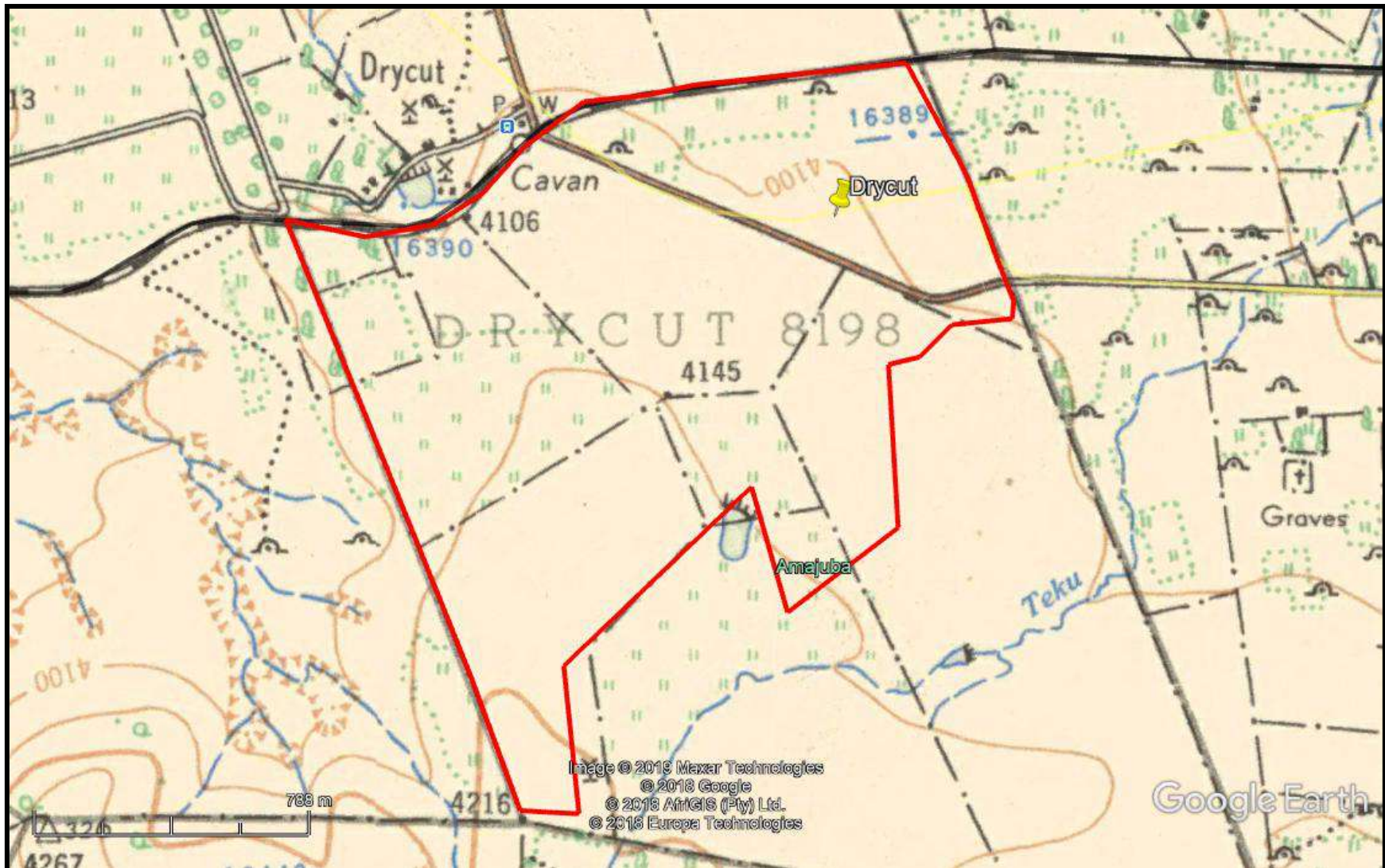


FIG. 8: LOCATION OF PROPOSED DEVELOPMENT IN 1944



## PALAEONTOLOGICAL SENSITIVITY

A PIA desktop was undertaken by Dr Alan Smith as the area is of high palaeontological significance (fig. 9). He states: The Volksrust Formation (upper Ecca Group) and possibly Karoo Dolerite is present on this site. Dolerite is not fossiliferous. The Volksrust Formation can contain trace fossils, which are common and of little palaeontological significance. The bivalve *Megadesmus* has been recorded from the Volksrust Formation but is very rare. Significant Palaeontological Material is unlikely to be found on this site. In further mitigation this site is likely to be weathered, reducing the chance of valuable palaeontological material being found. Although it is unlikely that Significant Palaeontological Material will be found a “Chance Find” Protocol has been incorporated into this report and MUST be incorporated into the EMP| (Appendix A).

**FIG. 9: PALAEONTOLOGICAL SENSITIVITY MAP**



## FIELD SURVEY RESULTS

The survey was undertaken on 2 December 2019. Much of the area south of the road is already developed or very disturbed. The area to the north was the important area due to the potential 1940s settlements. Two sites were noted during the survey of which both require some form of mitigation (fig. 10).

FIG. 9: LOCATION OF RECORDED SITES



### **DCUT01**

The site is located in the northerwestern part of the proposed development (27°47'32.43"S; 30° 3'38.31"E). The site is located in the same location as the settlement on the 1944 topographical map. The site post-dates 1935, as it does not occur on the aerial map. The site consists of the foundations of a house floor, remnants of another house floor, and a single stone cairn that appears to be a juvenile grave (fig. 11). The cairn is oval in shape, in an east-west orientation and mostly sunken. The cairn is a grave and needs to be treated as such until proven otherwise. No structures were noted at the second settlement from the 1944 map.

**Significance:** The grave is of high significance.

**Mitigation:** The grave will need to be either left undisturbed with a 20m buffer of no development and be fenced off, or the developer can apply for the contents to be removed. This is discussed below under management plan. I would recommend that latter. I suggest the human remains are removed and reburied.

**SAHRA Rating:** 3A

### **DCUT02**

The site is located in the middle of the development (27°47'52.57"S; 30° 3'54.88"E). The site consists of a Shembe Temple that is currently in use (fig. 12).

**Significance:** The Shembe Temple is a place of worship and thus of high significance.

**Mitigation:** The Temple may be moved, but consultation with the community using it needs to occur.

**SAHRA Rating:** 3A

FIG. 11: HOUSE FOUNDATIONS AND GRAVE AT DCUT01





**FIG. 12: SHEMBE TEMPLE AT DCUT02**



### **MANAGEMENT PLAN**

Three heritage issues need to be mitigated: palaeontology, Shembe Temple, and the human grave.

It is highly unlikely that palaeontological remains will occur within the upper 2m of deposit, due to the weathered deposits. If any fossil materials are noted, then it needs to be reported to the relevant heritage authorities.

The Shembe Temple may be moved. Discussions with the local community using the temple will need to occur, and an agreement reached.

I suggest the developer follows the below steps in dealing with the grave. The grave is older than 60 years and will require an archaeologist qualified in grave

removals to assist the undertaker. Umlando does not undertake grave removals for graves younger than 100 years.

In summary the steps are as follows:

1. A qualified and registered undertaker must be approached to undertake the grave removal process.
2. This will require a Public Participation Process that could take as long as 6 months. This process is to locate anyone who would claim the ancestral remains.
3. The client may approach KZN Amafa and Research Institute (Amafa) for an emergency permit where the remains/soil may be removed while the PPP is being undertaken. This is not always given.
4. Once the PPP has been completed, the results need to be given to Amafa, who will then issue a permit allowing the human remains/soil sample to be removed.
5. The remains need to be reburied at an agreed upon area. I would suggest an existing cemetery.

The entire process is given in Appendix B.

I suggest the developer begins the above as soon as possible, so as to start the process. Permits from the Kwazulu Natal Amafa and Research Institute are a legal requirement to test the grave and to undertake any grave removal.

## **CONCLUSION**

A heritage survey was undertaken for the proposed Drycut Housing Project and related infrastructures. Much of the area will occur on existing plots, while roads will be upgraded, and new pipelines will be installed. The area north of the P483, or Madadeni Rd, is less disturbed.

Two settlements were noted on the 1944 topographical map and these were surveyed during the field visit. The remains of one settlement with a human grave was noted. This grave will need to be mitigated in the form of a public participation process, and then through social consultation. This will need to be approved by Kwazulu Natal Amafa and Research Institute who will also issue the permits to remove the grave. The grave will have a medium impact on the development; however it can be mitigated and thus the extent is low.

A Shembe Temple was also noted and discussion with the affected community will be required if the temple is to be moved. The Shembe Temple will have a low impact on the development and the extent will be low.

The PIA desktop noted that while the underlying formations are very rich in fossil remains, they are highly weathered. It is thus unlikely that fossil remains will be found in the upper formations. A 'Chance Find Protocol' notes that any fossil material needs to be reported to Kwazulu Natal Amafa and Research Institute.

## REFERENCES

2930CC Osizwini 1944, 1996

107\_17\_38247

107\_17\_38248

107\_17\_38302

107\_17\_38303

GV246/11

### **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

**APPENDIX A  
DESKTOP PIA**

**DRYCUT HOUSING PROJECT, MADADENI  
AMAJUBA DISTRICT: DESK-TOP  
PALAEOLOGICAL IMPACT ASSESSMENT**

**FOR**

**UMLANDO: Archaeological Surveys & Heritage Management**

**by**

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**December 2019**

## EXECUTIVE SUMMARY

The Volksrust Formation (upper Ecca Group) and possibly Karoo Dolerite is present on this site. Dolerite is not fossiliferous. The Volksrust Formation can contain trace fossils, which are common and of little palaeontological significance. The bivalve *Megadesmus* has been recorded from the Volksrust Formation but is very rare. Significant Palaeontological Material is unlikely to be found on this site. In further mitigation this site is likely to be weathered, reducing the chance of valuable palaeontological material being found. Although it is unlikely that Significant Palaeontological Material will be found a “Chance Find” Protocol has been incorporated into this report and MUST be incorporated into the EMP.

## 1. BACKGROUND AND PROPOSED PROJECT

The Amajuba District Municipality in collaboration with the KZN Department of Human Settlements proposed to formalize the Drycut settlement near Madadeni, within the Amajuba District (Fig. 1). In all about 1000 residential units are envisaged to be constructed. It is expected that houses will be constructed on the compounds of qualifying beneficiary. This will also include the upgrade of internal roads and also pipelines for water reticulation.

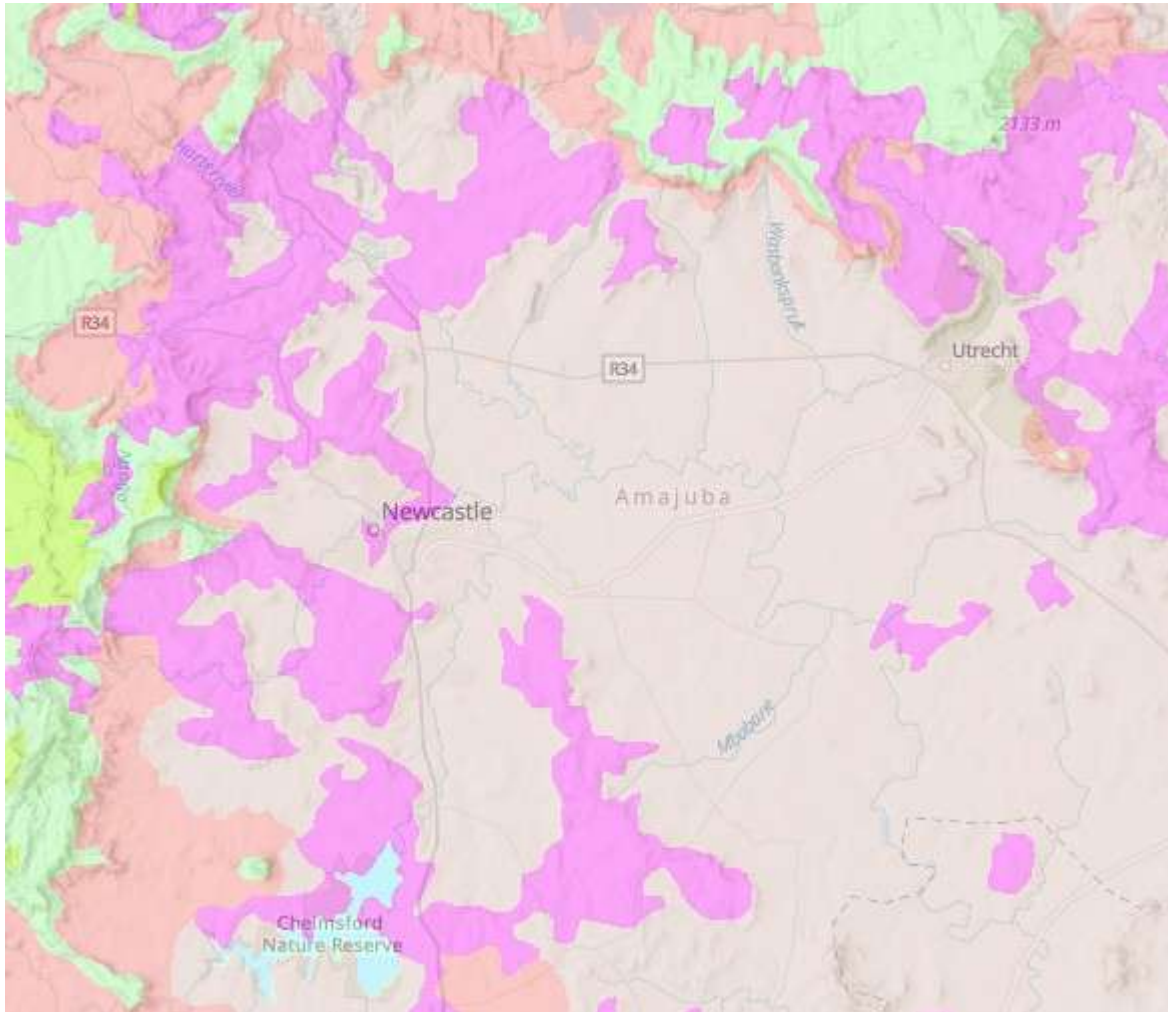


*Figure 1: Location Map showing the proposed development area (arrowed). Image source GoogleEarth).*

## 2. GEOLOGY

The geology of this proposed development site comprises the Volksrust Formation and possibly Karoo Dolerite intrusions (Fig. 2).





**Figure 2: Extract from the Arcgis 1: 1000 000 Geological Map. Grey colour around Amajuba represents the Volksrust Formation, red is Karoo dolerite.**

The Volksrust Formation is Late Permian in age (Cairncross et al. 2005). Typically it comprises a blue-black shale (Fig. 3). This unit was deposited in generally non-marine conditions (Cataneneau et al., 1998), but pockets of marine conditions were present (Cairncross et al., 2005). If Karoo Dolerite intrusions are present, these are 184 million years (Ma) old and represent the onset of the break-up of the Gondwana Supercontinent (Hastie et al (2014). According to Watkeys (2006), Gondwana rifting commenced between 155 and 135 Ma. Quaternary sediments comprise alluvium (river deposits) and colluvium (hill slope deposits).



**Figure 3: Example of the Volksrust Formation. This lithology is typically a blue shale and very weathered.**

### 3. PALAEOLOGY

#### 3.1 Trace fossils

Evidence of trace fossil bioturbation is common within the Volksrust Formation siltstones and mudstones, however the various trace fossil (ichnofossil) types are not always identifiable. These are common and of little Palaeontological Significance.

#### 3.2 Body fossils

The bivalve *Megadesmus* has been recoded from the upper part of the Volksrust Formation (Cairncross et al., 2005). This fossil is large, 9 cm dorsally and 8.4 cm laterally (Fig. 4). *Megadesmus* is known from other parts of the Gondwana Supercontinent (Australia, India, Siberia, South America and Tasmania). Its presence indicates exclusively marine conditions. The implication for the northeastern Karoo Basin during the Late Permian is that a marine enclave still existed in this geographic area and that terrestrial conditions did not yet prevail as in the southern basin region (Cairncross et al, 2005).

Palaeontological Material could be found in the Quaternary sediments, but is unlikely.



*Fig. 4: Megadesmus bivalve. This image was obtained from Cairncross et al. (2005).*

## **4. CHANCE FIND PROTOCOL**

As this site includes areas flagged red on the SAHRIS PalaeoSensitivity Map (Fig. 4), a “Chance Find Protocol” is Recommended. This Protocol is based on that of Groenevald (2017).

In the case of any unusual finds, a Palaeontologist must be notified immediately by the ECO and/or EAP and a site visit must be arranged at the earliest possible time with the Palaeontologist.

In the case of the ECO or the Site Manager becoming aware of suspicious looking palaeo-material:

- The construction must be halted in that specific area and the Palaeontologist must be given enough time to reach the site and remove the material before excavation continues.
- Mitigation will involve the attempt to capture all rare fossils and systematic collection of all fossils discovered. This will take place in conjunction with descriptive, diagrammatic and photographic recording of exposures, also involving sediment samples and samples of both representative and unusual sedimentary or biogenic features. The fossils and contextual samples will be

processed (sorted, sub-sampled, labeled, boxed) and documentation consolidated, to create an archive collection from the excavated sites for future researchers.

### **Functional responsibilities of the Developer**

1. At full cost to the project, and guided by the appointed Palaeontological Specialist, ensure that a representative archive of palaeontological samples and other records is assembled to characterise the palaeontological occurrences affected by the excavation operation.
2. Provide field aid, if necessary, in the supply of materials, labour and machinery to excavate, load and transport sampled material from the excavation areas to the sorting areas, removal of overburden if necessary, and the return of discarded material to the disposal areas.
3. Facilitate systematic recording of the stratigraphic and palaeo-environmental features in exposures in the fossil-bearing excavations, by described and measured geological sections, and by providing aid in the surveying of positions where significant fossils are found.
4. Provide safe storage for fossil material found routinely during excavation operations by construction personnel. In this context, isolated fossil finds in disturbed material qualify as “normal” fossil finds.
5. Provide covered, dry storage for samples and facilities for a work area for sorting, labeling and boxing/bagging samples.
6. Costs of basic curation and storage in the sample archive at the Museum in Pietermaritzburg (labels, boxes, shelving and, if necessary, specifically-tasked temporary employees) as specified by or agreed with AMAFA. Documentary record of palaeontological occurrences must be done.
7. The contractor will, in collaboration with the Palaeontologist, make the excavation plan available to the appointed specialist, in which appropriate information regarding plans for excavations and work schedules must be indicated on the plan of the excavation sites. This must be done in conjunction with the appointed specialist.
8. Initially, all known specific palaeontological information will be indicated on the plan. This will be updated throughout the excavation period.
9. Locations of samples and measured sections are to be pegged, and routinely and accurately surveyed. Sample locations, measured sections, etc., must be recorded three-dimensionally if any “significant fossils” are recorded during the time of excavation.

### **Functional responsibilities of the appointed palaeontologist**

1. Establishment of a representative collection of fossils and a contextual archive of appropriately documented and sampled palaeoenvironmental and sedimentological geodata at the Museum in Pietermaritzburg.
2. Undertake an initial evaluation of potentially affected areas and of available exposures in excavations.
3. On the basis of the above, and evaluation during the early stages of excavation development, in collaboration with the contractor management team, devise more detailed, practical strategies to deal with the fossils encountered routinely during excavation, as well as the strategies for major finds.
4. Informal on-site training in responses applicable to “normal” fossil finds must be provided for the ECO and environmental staff by the appointed specialist.
5. Respond to significant finds and undertake appropriate mitigation.
6. Initially, for the first three months of operation, at least two weekly visits to “touch base” with the monitoring progress, process and document interim Page 10 of 14 GBDBWSS Development Harry Gwala District Municipality 06/01/2017 “normal” finds and to undertake an inspection and documentation of new excavation faces. A strategy for further visits during the life of the excavation must then be determined.
7. Transport of material from the site to the Museum in Pietermaritzburg.
8. Reporting on the significance of discoveries, as far as can be preliminarily ascertained. This report is in the public domain and copies of the report must be deposited at ESI, AMAFA, and the South African Heritage Resources Authority (SAHRA). It must fulfill the reporting standards and data requirements of these bodies.
9. Reasonable participation in publicity and public involvement associated with palaeontological discoveries.

#### **Exposure of palaeontological material**

In the event of construction exposing new palaeontological material, not regarded as normative/routine as outlined in the initial investigation, such as a major fossil plant find, the following procedure must be adhered to:

1. The appointed specialist or alternates (AMAFA, SAHRA; ESI WITS University) must be notified by the responsible officer (e.g. the ECO or contractor manager) of major or unusual discoveries during excavation found by the Contractor Staff.
2. Should a major in situ occurrence be exposed, excavation will immediately cease in that area so that the discovery is not disturbed or altered in any way until the appointed specialist or scientists, or its designated representatives at AMAFA, have had reasonable opportunity to investigate the find. Such work will be at the expense of the Developer.

## 5. CONCLUSIONS

The Volksrust Formation is not known for its Palaeontological Content, however the fossil *Megadesmus* has been recorded. This fossil is very rare. Overall Palaeontological Material is unlikely to be encountered, but a “Chance Find” Protocol has been incorporated into this report and this MUST be incorporated into the EMP.

## 6. REFERENCES

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## 7. APPENDIX 1: DETAILS OF SPECIALIST

### Dr Alan Smith

Private Consultant: *Alan Smith Consulting, 29 Brown's Grove, Sherwood, Durban, 4091*

&

Honorary Research Fellow: *Discipline of Geology, School of Agriculture, Earth and Environmental Sciences, University of KwaZulu-Natal, Durban.*

**Role:** Specialist Palaeontological Report production

#### **Expertise of the specialist:**

- PhD in Geology (University of KwaZulu-Natal), Pr. Sc. Nat., I.A.H.S.
- Expert in Vryheid Formation (Ecca Group) in northern KZN, this having been the subject of PhD.
- Scientific Research experience includes: Fluvial geomorphology, palaeoflood hydrology, Cretaceous deposits.
- Experience includes understanding Earth Surface Processes in both fluvial and coastal environments (modern & ancient).
- Alan has published in both national and international, peer-reviewed journals. He has published more than 50 journal articles with 360 citations (detailed CV available on request).
- Attended and presented scientific papers and posters at numerous international and local conferences (UK, Canada, South Africa) and is actively involved in research.

Selected recent palaeo-related work includes:

- Desktop PIA: Proposed middle income housing units on Portion 23 of Farm Lot H Weston 13026, Bruntville, Mpofana Local Municipality. Client: UMLANDO.
- Desktop PIA: Proposed ByPass Pipeline for Ulundi bulk water pipeline upgrade. Client: UMLANDO.
- Fieldwork PIA: Bhekuzulu Epangweni KZN water reticulation project, Cathkin Park. Client: Mike Webster, HSG Attorneys.
- Desktop PIA: Zuka valley, Ballito. Client: Mike Webster, HSG Attorneys.
- Mevamhlope proposed quarry palaeontology report. Client: Enviropro.
- Desktop PIA: Proposed Lovu Desalination site. Client: eThembeni Cultural Heritage.
- Desktop PIA: Tinley Manor phase 2 North & South banks: eThembeni Cultural Heritage
- Desktop PIA: Tongaat. Client: eThembeni Cultural Heritage.
- Palaeontological Assessment Reports (3) to Scatec Solar SA (Pty) Ltd on an Appraisal of Inferred Palaeontological Sensitivity for a Potential Photo Voltaic Park at (1) Farm Rooilyf near Groblershoop, N Cape; (2) Farm Riet Fountain No.



Portions 1 and 6, 18km SE of De Aar, N Cape; and (3) Dreunberg, near Burgersdorp, Eastern Cape. Client: Sustainable Development Projects.

**APPENDIX B**  
**GRAVE REMOVAL PROCESS**

The developer must follow the guidelines mentioned below otherwise the project may be brought to halt.

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 follows<sup>1</sup>:

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. Human remains younger than 60 years should be handled only by a registered undertaker 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 small site management plan indicating who will be responsible for

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

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:
  - 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. This may be done by the archaeologist, who can explain the process, but for large or sensitive sites, a social consultant should be employed. Archaeologists often work with undertakers, who rebury the human remains.
  - If as a result 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.