

**THE PROPOSED CONSTRUCTION AND UPGRADE OF  
THE GREATER MNQUMENI WATER SUPPLY SCHEME  
IN HARRY GWALA DISTRICT MUNICIPALITY, KZN**

**FOR SIVEST (PTY) LTD**

**DATE: 10 MAY 2021**

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## TABLE OF CONTENT

INTRODUCTION .....	4
KWAZULU NATAL AMAFA AND RESEARCH INSTITUTE, ACT 05, 2018 .....	9
METHOD .....	11
Defining significance.....	12
RESULTS .....	15
DESKTOP STUDY .....	15
PALAEONTOLOGICAL SENSITIVITY .....	19
FIELD SURVEY.....	20
RECOMMENDATIONS .....	20
CONCLUSION.....	20
REFERENCES .....	20
<b>EXPERIENCE OF THE HERITAGE CONSULTANT .....</b>	<b>21</b>
<b>DECLARATION OF INDEPENDENCE.....</b>	<b>21</b>

## TABLE OF FIGURES

FIG. 1 GENERAL LOCATION OF THE PROPOSED DEVELOPMENT .....	5
FIG. 2: AERIAL OVERVIEW OF THE PROPOSED DEVELOPMENT .....	6
FIG. 3: TOPOGRAPHICAL MAP OF THE PROPOSED DEVELOPMENT (2002) .....	7
FIG. 4: SCENIC VIEW OF THE STUDY AREA .....	8
TABLE 1: SAHRA GRADINGS FOR HERITAGE SITES .....	14
FIG. 5: LOCATION OF KNOWN HERITAGE SITES IN THE GENERAL AREA .....	16
FIG. 6: LOCATION OF THE STUDY AREA IN 1937 .....	17
FIG. 7: LOCATION OF THE STUDY AREA IN 1968 .....	18
FIG. 8: PALAEONTOLOGICAL SENSITIVITY MAP .....	19

## 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 Harry Gwala District Municipality (formerly Sisonke District Municipality) undertook the Santombe Water Supply project in 2009. The project entailed the development of a water supply scheme for the villages of Masameni, Mqumeni, Ndlovini and Ehlanzeni in the Umzimkhulu Local Municipality. The scheme is supplied via a run of river abstraction on the Ibisi River and a 2Mℓ/day Water Treatment Works (WTW) located approximately 450m from the river abstraction site (GIBB, 2021).

Originally the Santombe WSS was developed to incorporate the villages in the area into a single centralise scheme as the existing independent schemes did not have a reliable water supply, as most of the villages were supplied either by public standpipes or yard taps supplied via borehole schemes, which dried up seasonally and experienced significant vandalism. Unfortunately due to a number of reasons the Santombe Water Supply System currently functions poorly, with most of the villages still without any reliable supply of water (GIBB, 2021).

Umlando was requested to undertake an assessment of the proposed development. Figures 1 – 3 show the location of the development.



FIG. 1 GENERAL LOCATION OF THE PROPOSED DEVELOPMENT

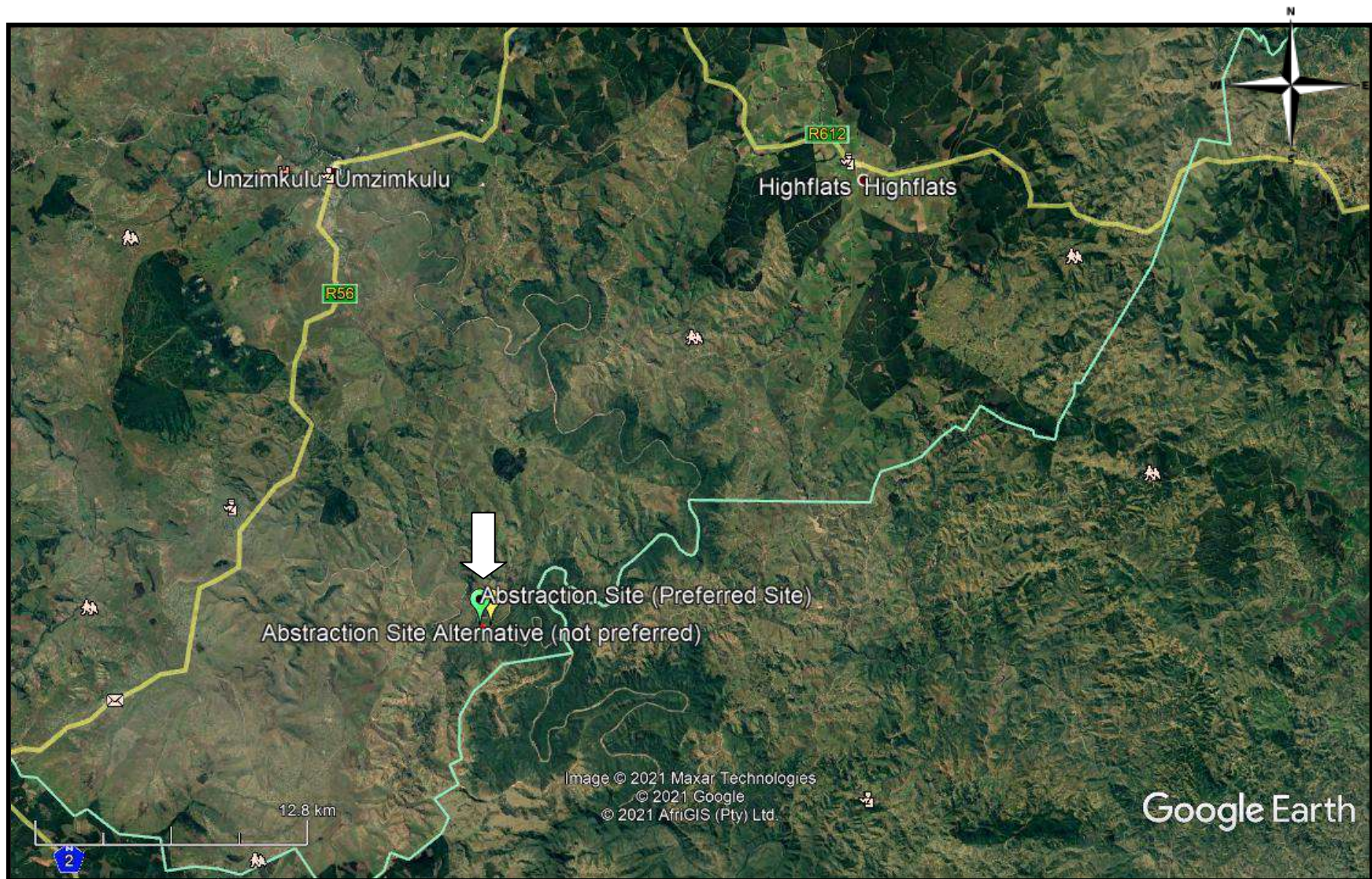




FIG. 2: AERIAL OVERVIEW OF THE PROPOSED DEVELOPMENT

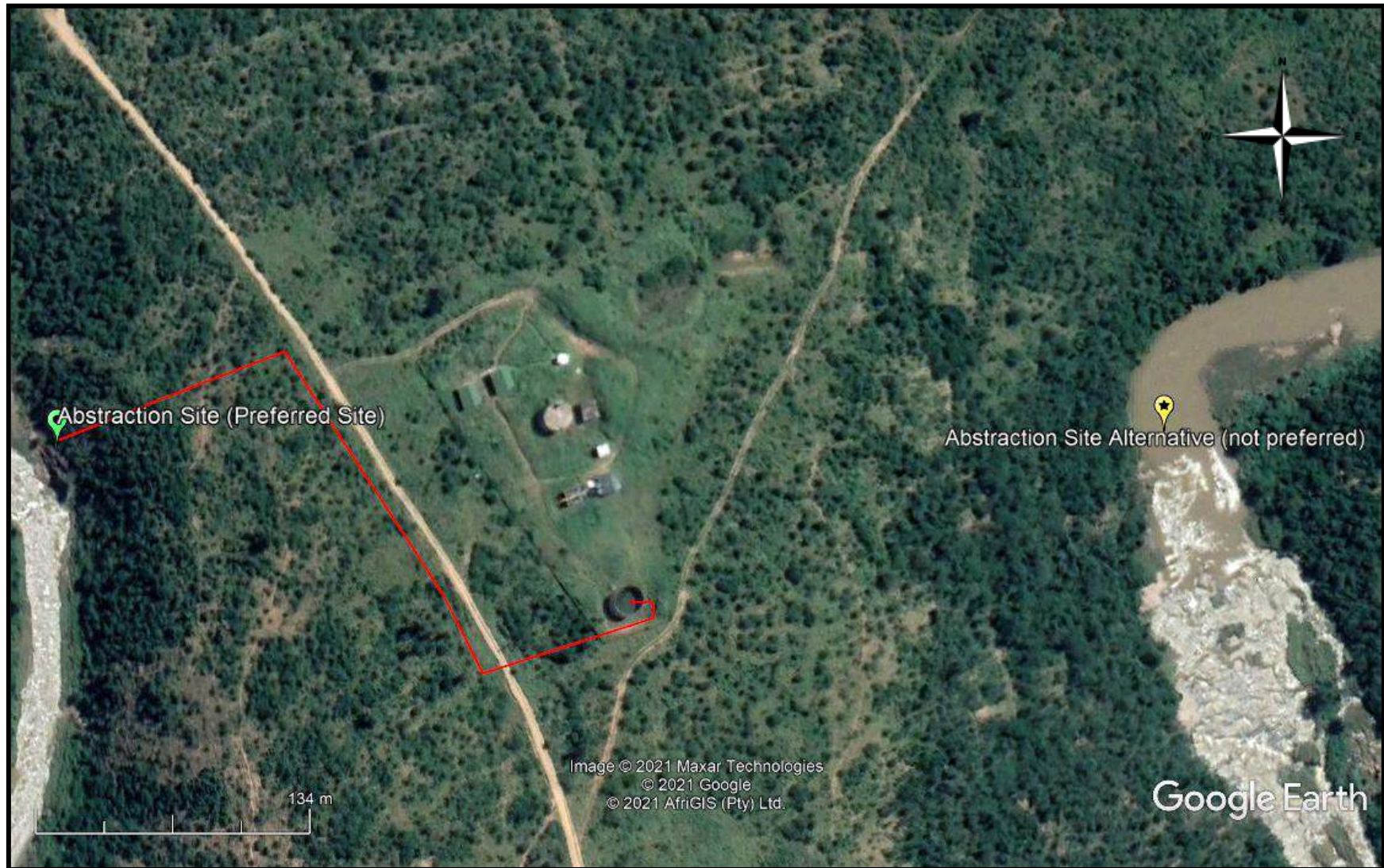




FIG. 3: TOPOGRAPHICAL MAP OF THE PROPOSED DEVELOPMENT (2002)

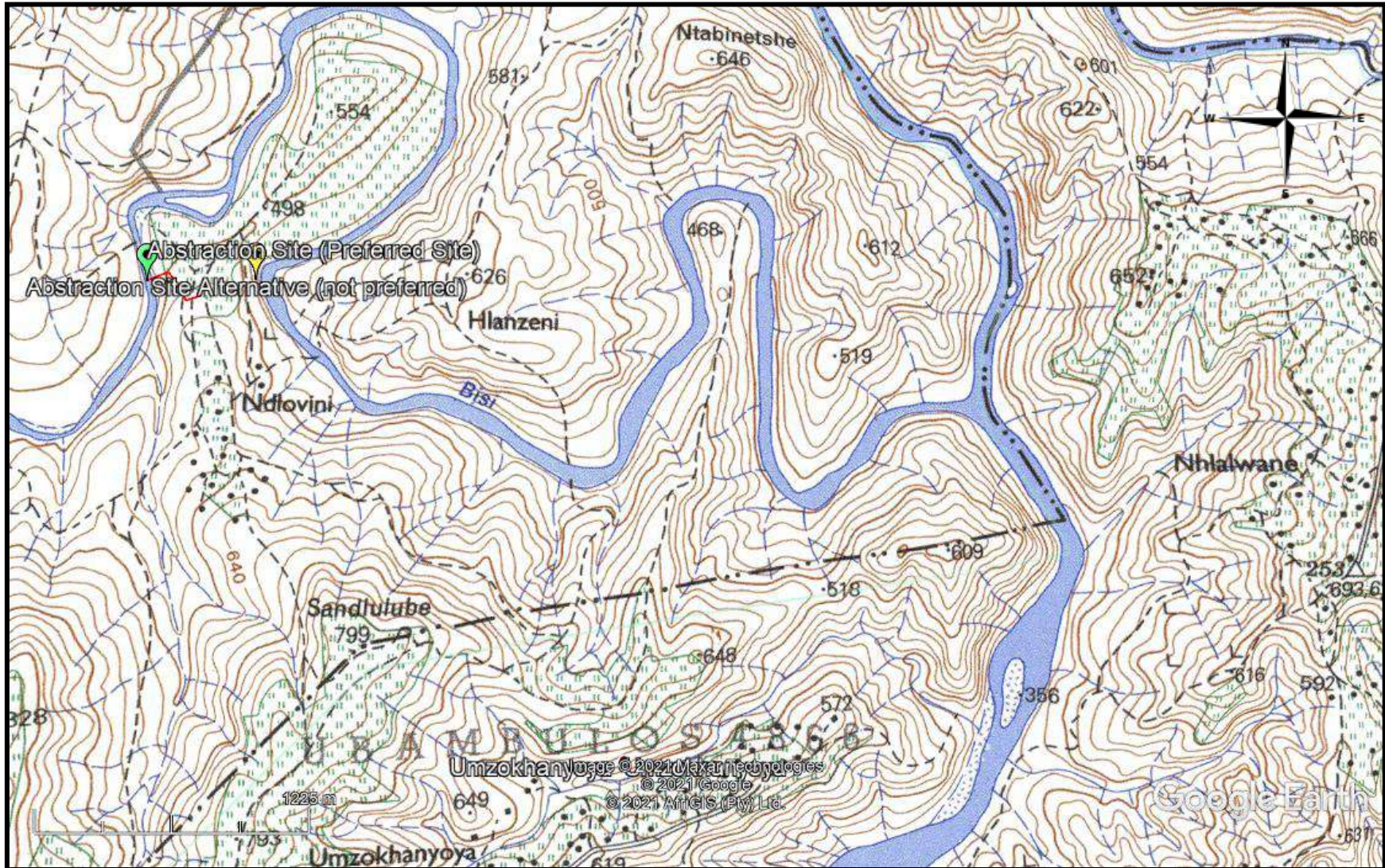




FIG. 4: SCENIC VIEW OF THE STUDY AREA





**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. Table 1 lists the grading system.

**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 / destruction
Low Significance	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. Very few archaeological sites occur in the general area. The archaeological sites tend to be open Stone Age scatters of low significance, Overhangs with Rock Paintings, Late Iron Age walling, and Historical Period structures (fig. 5). The area has few recorded archaeological sites as a result of little research being undertaken in the past.

The 1937 aerial photograph indicates that the area to the north of the pipeline has been use for agricultural purposes for many decades (fig. 7). No built structures are noted in the study area

The 1968 map indicates that the area has been under extensive agricultural activity, including the study area (fig. 7). No built structures are noted in the study area.

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

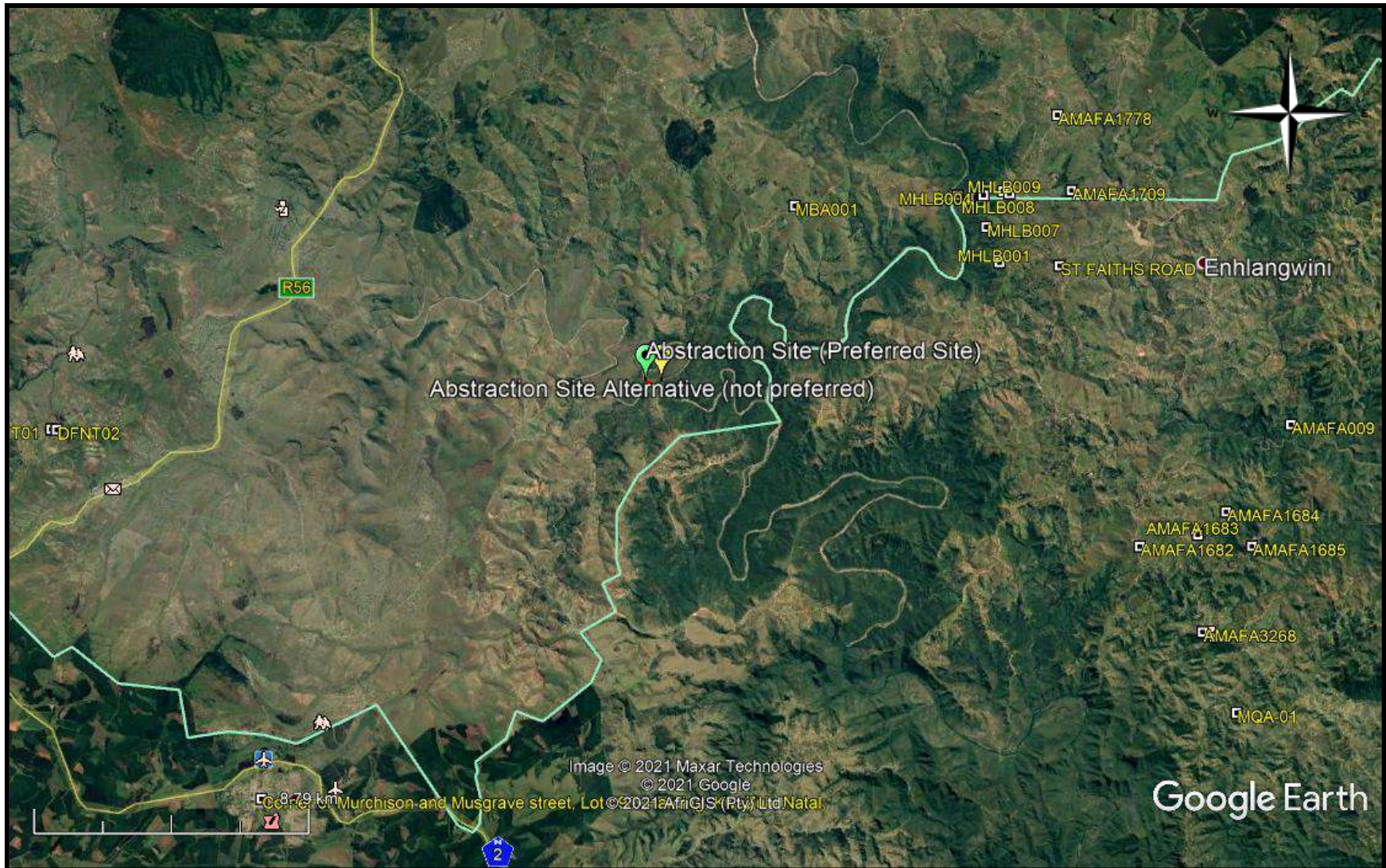




FIG. 6: LOCATION OF THE STUDY AREA IN 1937

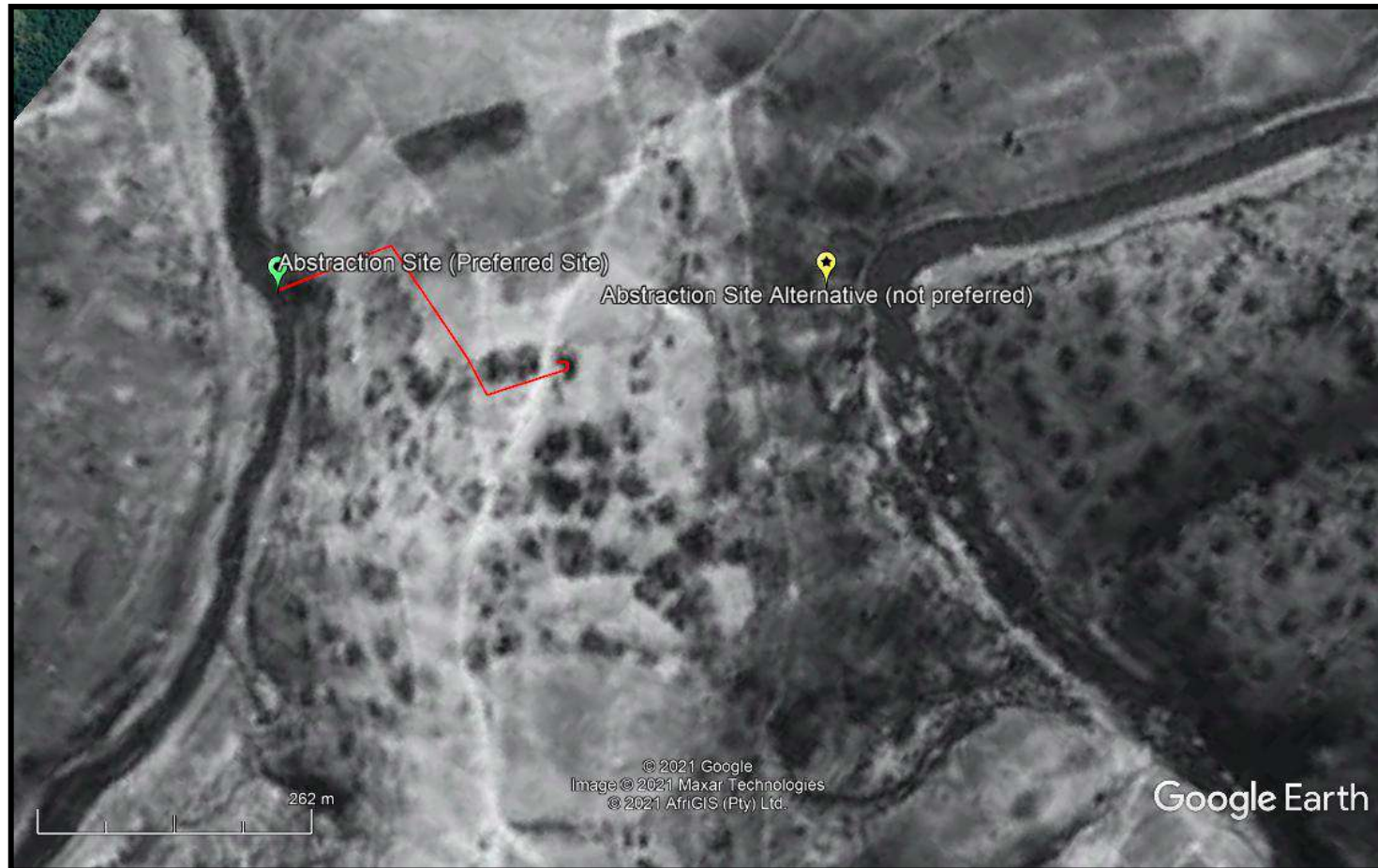
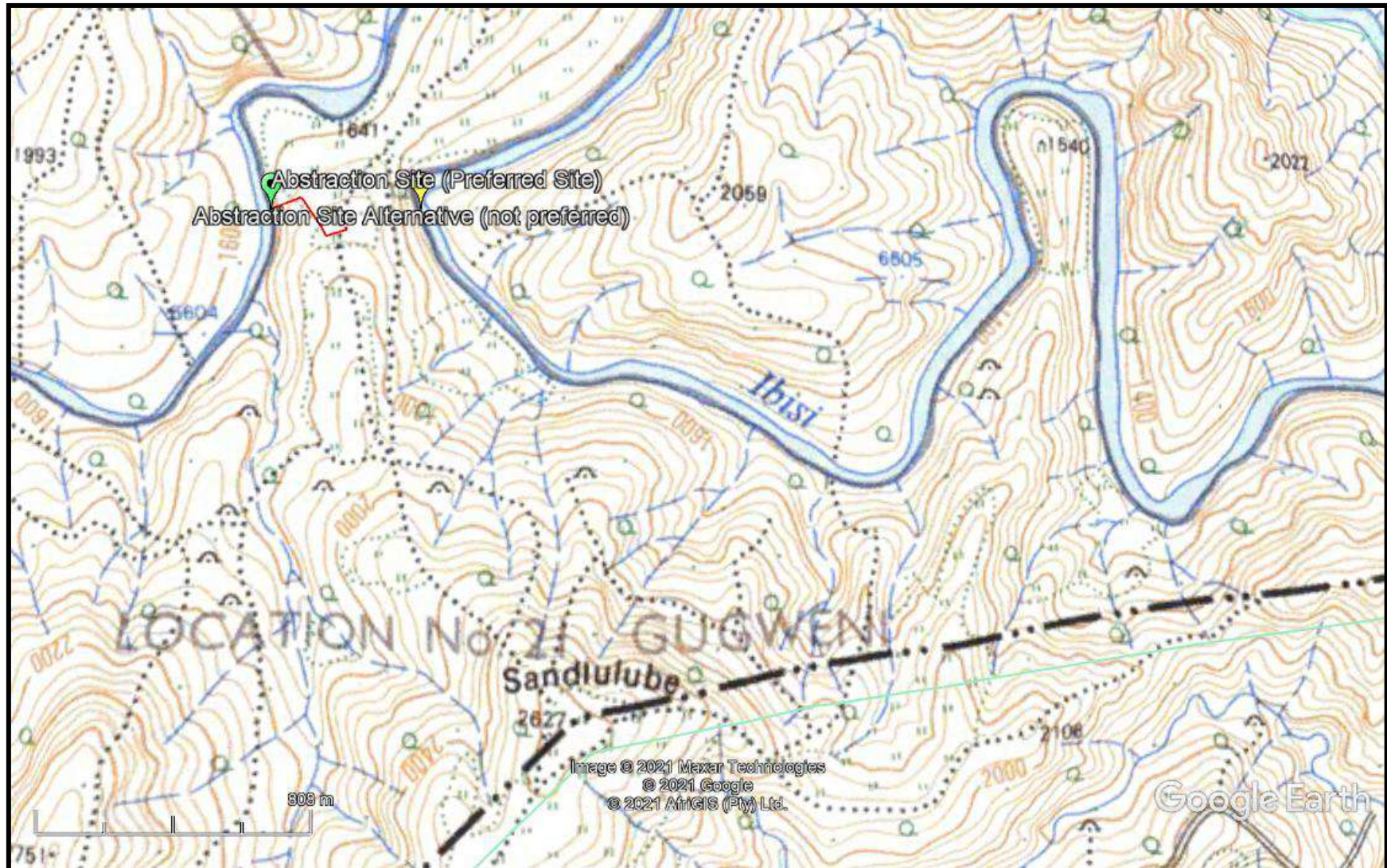




FIG. 7: LOCATION OF THE STUDY AREA IN 1968



## PALAEONTOLOGICAL SENSITIVITY

The area is in an area of unknown palaeontological sensitivity (fig. 8). However, the pipeline will not be deeper than 2m and will not affect unweathered deposits. The PIA Letter of Exemption was provided by Dr Alan Smith (Appendix A). The areas lies on exposed granite, and thus no palaeontological remains will be found.

**FIG. 8: PALAEONTOLOGICAL SENSITIVITY 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.



## FIELD SURVEY

The field survey was undertaken on 29 March 2021. Ground visibility was average, with dense grass in areas. However, the main track to the abstraction buildings, and various cattle paths allowed for an accurate survey.

No archaeological sites, nor artefacts, were observed along the pipelines.

There are several old *Euphorbia ingens* in the area. These could be indicative of old graves. The pipeline line does not occur near the *E. ingens*.

No further mitigation is required.

## RECOMMENDATIONS

The proposed project will not affect any heritage sites. No further mitigation is required.

## CONCLUSION

A desktop heritage survey was undertaken for the proposed groynes on the Mkhonozana River. No heritage sites are known to occur in the study area. The project should be exempt from further heritage mitigation.

## REFERENCES

3030AC 1968, 1993 Highflats  
117A\_019\_40010  
KZN Museum database  
SARHIS 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 'Anderson', with a horizontal line underneath.

Gavin Anderson  
Archaeologist/Heritage Impact Assessor

Appendix a  
PIA Letter of Exemption

**Dr Alan Smith**  
**Alan Smith Consulting**  
**29 Browns Grove**  
**Sherwood**  
**Durban**  
**4091**

**UMLANDO: Archaeological Surveys & Heritage Management**  
**PO Box 102532, Meerensee, KwaZulu-Natal 3901**

**Re: Refurbishment of River Water Abstraction Sites**

**To whom it may concern**

It is proposed to refurbish water abstraction points along a river course and create a new water pipeline to the pumpstation.

The area in question, where these abstraction points are/ are proposed, is marked white on the Sahrís Palaeosensitivity map. This colour indicates that no form of Palaeontological Impact Assessment investigation is required.

The reason for this is as follows. At this point the river flows through a gorge. During the rivers history it has eroded down into granitic rocks of the 1.1 Ga (eleven hundred million years old) Natal Mobile Belt. These rocks are granitic and not fossiliferous.

No palaeontological work is required.

**Dr Alan Smith.**  
**Alan Smith Consulting**

**May 9, 2021**

