

# HERITAGE SCOPING REPORT

**FOR THE PROPOSED NSELENI INDEPENDENT FLOATING POWER PLANT  
(NIFPP) AND ASSOCIATED INFRASTRUCTURE, PORT OF RICHARDS BAY,  
KWAZULU-NATAL**

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## **EXECUTIVE SUMMARY**

HCAC was appointed to conduct a Heritage Scoping Assessment for the proposed Nseleni Independent Floating Power Plant (NIFPP) that falls within the Port of Richards Bay (Remainder Farm 16230: N0GV00000001623000000; Portion 1 of Farm 6230: N0GV00000001623000001; and Portion 45 of Erf 5333: N0GV04210000533300045), while the associated land-based infrastructure will be located on Remainder Erf 5333 (N0GV04210000533300000), within the uMhlathuze Local Municipality and King Cetshwayo District Municipality. This assessment is based on a desktop study of available data regarding cultural heritage resources of the area.

Key Findings of this study include:

- Several heritage assessments have been conducted in the general study area (Table 1) and heritage sites dating from the Stone Age, Iron Age and grave sites are on record. Similar sites can be expected in the study area;
- A portion of the study area was covered by Anderson and Anderson in 2009 that recorded site RBP 03 within the project footprint. Another site, on record at the Pietermaritzburg Museum Archaeological Database (Bhizele Halt), also occurs in the project footprint. If impacted on these sites will require further mitigation and will be assessed during the impact assessment phase; and,
- The study area is of moderate paleontological sensitivity and an independent desk based paleontological study was conducted (Bamford 2020) and concluded that there would be no impact on the fossil heritage and the project can proceed without further work during the impact assessment phase.

From a heritage point of view the proposed project is considered to be viable and no fatal flaws are expected. This will be confirmed through a field-based Heritage Impact Assessment to be undertaken prior to development.

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**ABBREVIATIONS**

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BIA: Basic Impact Assessment
CRM: Cultural Resource Management
EAP: Environmental Assessment Practitioner
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EMP: Environmental Management Plan
ESA: Early Stone Age
GPS: Global Positioning System
HIA: Heritage Impact Assessment
LIA: Late Iron Age
LSA: Late Stone Age
MEC: Member of the Executive Council
MIA: Middle Iron Age
MPRDA: Mineral and Petroleum Resources Development Act
MSA: Middle Stone Age
NEMA: National Environmental Management Act
PRHA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency
SAHRIS: South African Heritage Resources Information System

*\*Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.*

**GLOSSARY**

Archaeological site (remains of human activity over 100 years old)

Early Stone Age (2 million to 300 000 years ago)

Middle Stone Age (300 000 to 30 000 years ago)

Late Stone Age (30 000 years ago until recent)

Historic (approximately AD 1840 to 1950)

Historic building (over 60 years old)

Lithics: Stone Age artefacts

**1. INTRODUCTION**

**HCAC** was requested by SE Solutions to submit a heritage scoping report to AMAFA as part of the environmental authorization process for the proposed NIFPP. The NIFPP falls within the Port of Richards Bay within the uMhlathuze Local Municipality and King Cetshwayo District Municipality (Figure 1 & 2). The heritage scoping report forms part of the Environmental Impact Assessment process for the project and will be followed by a Heritage Impact Assessment (HIA) report.

The aim of the scoping report is to conduct a desktop study to identify possible heritage resources within the project site to inform the HIA. The study furthermore aims to assess the impact of the proposed project on non - renewable heritage resources and to submit appropriate recommendations with regards to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve and develop them within the framework provided by Heritage legislation.

This report outlines the approach and methodology utilised for the scoping phase of the project. Possible impacts are identified and mitigation measures are proposed in the following report. It is important to note that no field work was conducted as part of the scoping phase but will be conducted as part of the HIA.





Figure 1. 1:250 000 Topographical map indicating the study area.

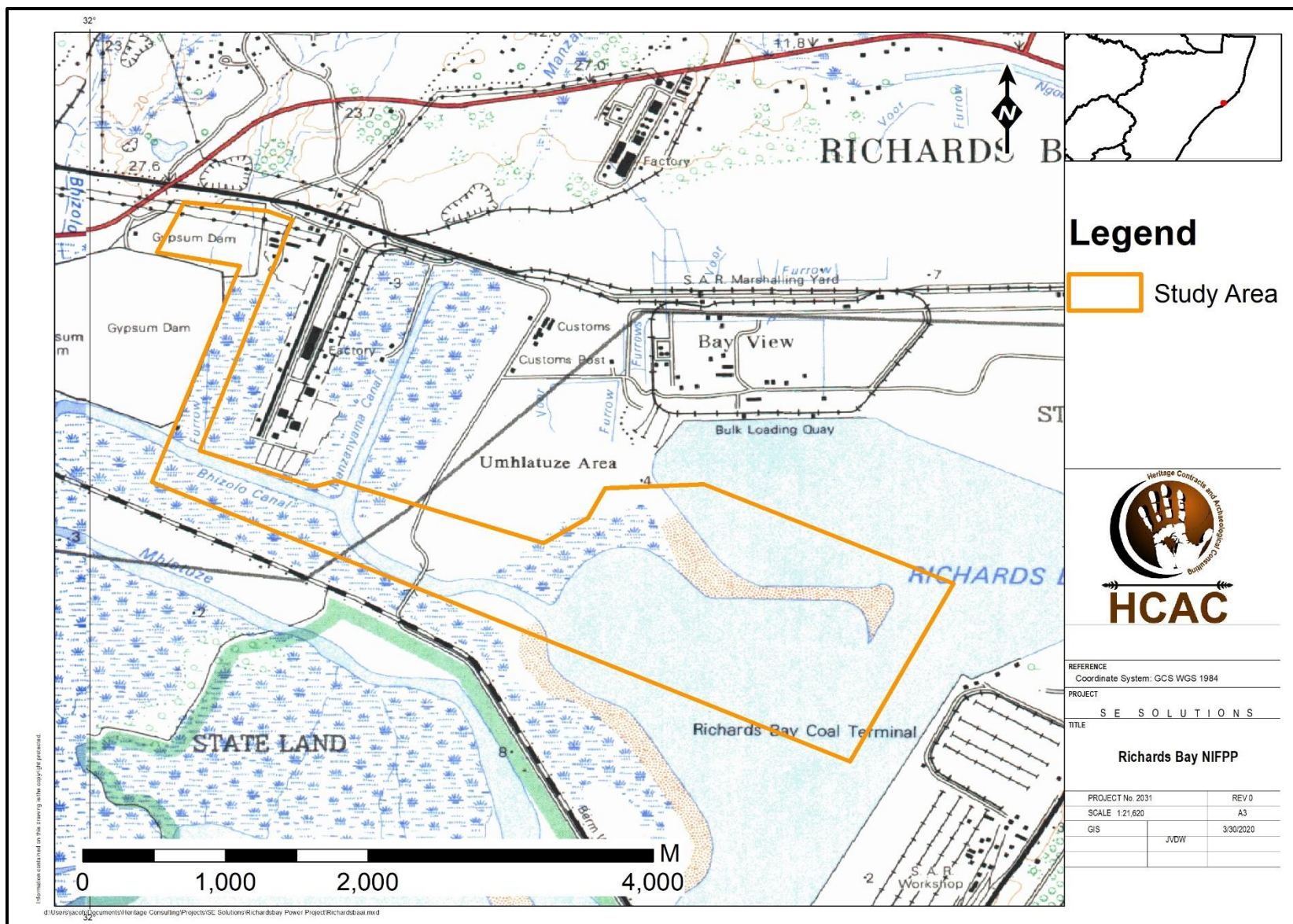


Figure 2. 1:50 000 Topographical map indicating the study area.

## **1.1 Terms of Reference**

The main aim of this scoping report is to determine if any known heritage resources occur within the project site. The objectives of the scoping report were to:

- » Conduct a desktop study:
  - \* Review available literature, previous heritage studies and other relevant information sources to obtain a thorough understanding of the archaeological and cultural heritage conditions of the area;
  - \* Identify known and recorded archaeological and cultural sites; and
  - \* Determine whether the area is renowned for any cultural and heritage resources, such as Stone Age sites, Iron Age sites, informal graveyards or historical homesteads.
- » Compile a specialist Heritage Scoping Report in line with the requirements of the EIA Regulations, 2014, as amended on 07 April 2017.

The reporting of the scoping component is based on the results and findings of a desktop study, wherein potential issues associated with the proposed project will be identified, and those issues requiring further investigation through the IA Phase highlighted. Reporting will aim to identify the anticipated impacts, as well as cumulative impacts, of the operational units of the proposed project activity on the identified heritage resources for all 3 development stages of the project, i.e. construction, operation and decommissioning. Reporting will also consider alternatives should any significant sites be impacted on by the proposed project.

During the Impact Assessment phase, the following terms apply:

### **Field study**

Conduct a field study to: (a) locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest; (b) record GPS points of sites/areas identified as significant areas; (c) determine the levels of significance of the various types of heritage resources affected by the proposed development

### **Reporting**

Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the identified heritage resources for all 3 phases of the project; i.e., construction, operation and decommissioning phases. Consider alternatives, should any significant sites be impacted adversely by the proposed project. Ensure that all studies and results comply with the relevant legislation, SAHRA minimum standards and the code of ethics and guidelines of ASAPA.

To assist the developer in managing the discovered heritage resources in a responsible manner, and to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act No 25 of 1999) and the Kwazulu-Natal Heritage Act, No. 4 of 2008.

## **1.2 Nature of the development**

The proposed Nseleni Independent Floating Power Plant (NIFPP) and associated infrastructure to be located (predominantly) within the Port of Richards Bay. The NIFPP will make use of Combined Cycle Gas Turbine (CCGT) technology fuelled by Liquid Natural Gas (LNG). The project would be made up of a series of individual floating power plants/ barges each of which would be capable of generating 1 350 MW. It is proposed to phase the project, gradually bringing in the power plants/ barges to create a combined generation capacity of 5 400 MW. Subsequent phases may take the combined power generation to 16 200 MW.

A substation and transmission switching yard is proposed to be located at the NIFPP CCGT Power Station Facility (located on the Power Barge Terminal/ Quay) housing the step-up transformer, circuit breaker arrangements, protection and control equipment (i.e. voltage and current transformers, relays and SCADA systems). The new on-land transmission substation (proposed to be located to the north-west of the Bayside site) would also feature voltage control/ power factor correction devices such as capacitors, reactors or static volt-ampere reactive compensators and equipment, such as phase shifting transformers to control power flow between the two adjoining power systems, as may be required, to convert the power generated at Medium Voltage (MV) at 22 kV for transmission to High Voltage (HV) at 440 kV/ 765 kV.

## **1.3 The receiving environment**

The project will be located in the port of Richards Bay on Remainder Farm 16230: NOGV0000000162300000; Portion 1 of Farm 6230: NOGV0000000162300001; and Portion 45 of Erf 5333: NOGV04210000533300045), while the associated land-based infrastructure will be located on Remainder Erf 5333 (NOGV04210000533300000). The Port of Richards Bay is managed by the Transnet National Ports Authority (TNPA); however, the “sea/estuarine” environment and bed/substrate is owned by the Minister of Environment, Forestry & Fisheries (DEFF). On land, Remainder Erf 5333 is largely vacant and owned by the uMhlatuze Local Municipality, while the adjacent land parcel (Lot 6363, Alton) to the east of the proposed powerline corridor is the Bayside Aluminium smelter, owned by South32 and to the west is the Gypsum Dump.

Two canals that were established to drain the area used for the Bayside Aluminium smelter exist on the eastern and southern boundaries of Bayside, the Manzamnyama and Bhizolo Canals respectively. The area to the south of the Port of Richards Bay (or Richards Bay Estuary) is known as the Richards Bay Sanctuary or uMhlatuze Estuary and includes the Richards Bay Game Reserve, a protected area.

The Port of Richards Bay, itself, contains a dry bulk terminal, a multi-purpose terminal and the privately-operated coal terminal. Other private operators within the Port include several wood chip export terminals and a bulk liquid terminal. The Port has extensive rail and conveyor belt systems servicing the berths from nearby factories and plants.

The prevailing vegetation type and landscape features of the area form part of the Maputuland Coastal Belt. It is described as a flat coastal plain with Quaternary sediments of marine origin characterised by low shrubs (Mucina & Rutherford, 2006).

## **2. APPROACH AND METHODOLOGY**

The assessment is to be undertaken in two phases, a desktop study (scoping phase) and a field-based assessment (Heritage Impact Assessment). This report concerns the scoping phase. The aim of the scoping phase is to cover available data regarding archaeological and cultural heritage to compile a background history of the study area in order to identify possible heritage issues or fatal flaws that could possibly be associated with the project and should be avoided during development.

This was accomplished by means of the following phases (the results are represented in section 4 of this report):

### **2.1 Literature review**

A review was conducted utilising data for information gathering from a range of sources on the archaeology and history of the area. The aim of this is to extract data and information on the area in question, looking at archaeological sites, historical sites and graves of the area.

### **2.2 Information collection**

The South African Heritage Resources Information System (SAHRIS) was consulted to further collect data from CRM practitioners who undertook work in the area to provide the most comprehensive account of the history of the area where possible.

### **2.3 Public consultation**

No public consultation was conducted during this phase by the author.

### **2.4 Google Earth and mapping survey**

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where archaeological sites might be located.

### **2.5 Genealogical Society of South Africa**

The database of the genealogical society was consulted to collect data on any known graves in the area.

## **3. LEGISLATION**

For this project, the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) and the Kwazulu-Natal Heritage Act, No. 4 of 2008 are of importance and the following sites and features are protected:

- a. Archaeological artefacts, structures and sites older than 100 years;
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography;
- c. Objects of decorative and visual arts;
- d. Military objects, structures and sites older than 75 years;
- e. Historical objects, structures and sites older than 60 years;
- f. Proclaimed heritage sites;
- g. Grave yards and graves older than 60 years;
- h. Meteorites and fossils; and
- i. Objects, structures and sites of scientific or technological value.

The national estate includes the following:

- a. Places, buildings, structures and equipment of cultural significance;

- b. Places to which oral traditions are attached or which are associated with living heritage;
- c. Historical settlements and townscapes;
- d. Landscapes and features of cultural significance;
- e. Geological sites of scientific or cultural importance;
- f. Archaeological and palaeontological importance;
- g. Graves and burial grounds;
- h. Sites of significance relating to the history of slavery; and
- i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.).

Section 34 of the NHRA and Section 33 of the KZN Heritage Act deal with structures that are older than 60 years. Section 35(4) of the NHRA deals with archaeology, palaeontology and meteorites as does Section 36 of the KZN Heritage Act. Section 36 of the NHRA and Section 34 and 35 of the KZN Heritage Act, deal with human remains older than 60 years. Unidentified/unknown graves are also handled as older than 60 years until proven otherwise.

### **3.1 Heritage Site Significance and Mitigation Measures**

The presence and distribution of heritage resources define a Heritage Landscape. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface.

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. National and Provincial Monuments are recognised for conservation purposes. The following interrelated criteria were used to establish site significance:

- » The unique nature of a site;
- » The integrity of the archaeological/cultural heritage deposit;
- » The wider historic, archaeological and geographic context of the site;
- » The location of the site in relation to other similar sites or features;
- » The depth of the archaeological deposit (when it can be determined or is known);
- » The preservation condition of the site; and
- » Potential to answer present research questions.

The criteria above will be used to place identified sites within the South African Heritage Resources Agency's (SAHRA's) (2006) system of grading of places and objects that form part of the national estate. This system is approved by the Association of South African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region. The recommendations for each site should be read in conjunction with Section 10 of this report.

Table 1. Field Rating of heritage sites

<b>FIELD RATING</b>	<b>GRADE</b>	<b>SIGNIFICANCE</b>	<b>RECOMMENDED MITIGATION</b>
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP.A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

## 4. REGIONAL OVERVIEW

### 4.1 General Information

#### 4.1.1. Database search

Several CRM assessments have been conducted in the area, the following reports (Table 2) have been consulted in this report

Table 2. CRM reports consulted for this study:

<b>Author</b>	<b>Year</b>	<b>Project</b>	<b>Findings</b>
Anderson, G. & Anderson, L.	2008	Archaeological Survey of The Proposed Alton Sewer Pipe Upgrade.	No sites were recorded.
Anderson, G.	2008	Archaeological Survey of The Proposed New Infrastructure at The Arrival Yard at The Richards Bay Coal Terminal	No sites were recorded.
Anderson, G. & Anderson, L.	2009	Heritage Survey of The Proposed Expansion to The Transnet National Ports Authority, Richards Bay	A total of nine sites were recorded during the course of the survey. These sites date from the Cretaceous to the Late Iron Age.
Anderson, G. & Anderson, L.	2010	Heritage Survey of The Proposed Richards Bay Central Industrial Area for Coastal & Environmental Services.	No sites were recorded.
Van Schalkwyk, L. & Wahl, E.	2013	Baseline Heritage Study: Proposed Richards Bay Port Expansion, uMhlatuze Local Municipality, uThungulu District, KwaZulu-Natal	Grave sites were recorded.
Van Schalkwyk, L. & Wahl, E.	2014	Application for Exemption from a Phase 1 Heritage Impact Assessment of Proposed Decommissioning of the Legacy Landfills at	No sites were recorded.

		The Bayside Aluminium Smelter, Richards Bay, KwaZulu-Natal, South Africa	
Galimberti, M.	2015	Proposed gas to power plant within Zone F in the IDZ of Richardsbay, KZN.	No sites were recorded.
Van der Walt, J.	2016	Proposed Hillside Desalination Plant to be established at the Hillside Aluminium smelter site, Richards Bay, KwaZulu-Natal	No sites were recorded.
Van Schalkwyk, L.	2018	Application for HIA Exemption RBCT Repeater Mast Port of Richards Bay, Umhlathuze LM, King Cetshwayo DM, KwaZulu-Natal	No sites were recorded.
Lavin, J and Van Schalkwyk, L.	2019	Proposed development of an edible oil pipeline and Wilmar SA (Pty) Ltd from berth 706/707/708 to RB IDZ Phase 1 A, Richardsbay, KZN.	No sites were recorded (although sites in the surrounding area are indicated in the report).

**4.1.2. Public consultation**

No public consultation was conducted by the heritage consultant during the scoping phase.

**4.1.3. Google Earth and mapping survey**

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where archaeological sites might be located. From a heritage point of view the environment can provide information as to where heritage features can be expected. Environmental criteria such as elevation, landcover, slope and digital elevation models (DEM) in relation to known heritage sites (Figure 3 – 6) provide valuable insight into where sites can be expected within the study area. The study area is located in an area that slopes very gently from the sea to the land and that was mainly covered by marshes in areas with lower elevation complemented by higher laying areas on land.

**4.1.4. Genealogical Society of South Africa**

No grave sites are on record for the study area.



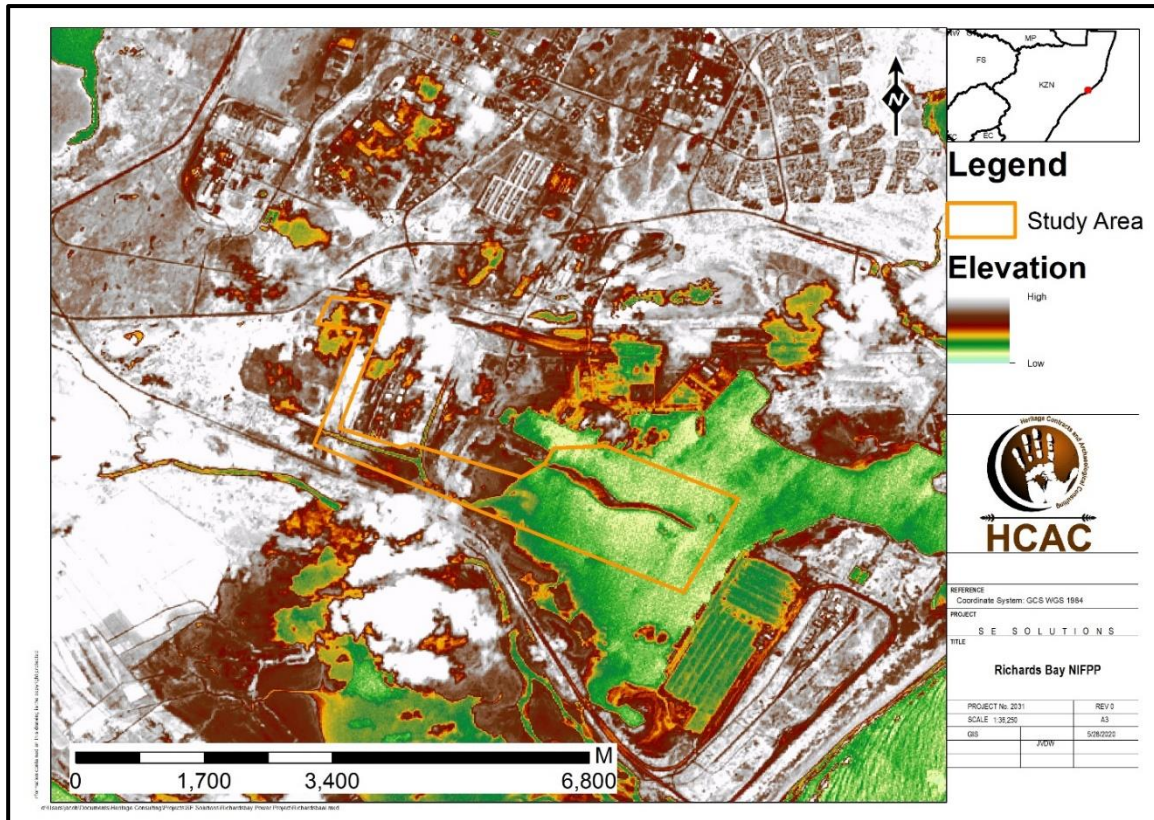


Figure 3. Elevation Map of the study area.

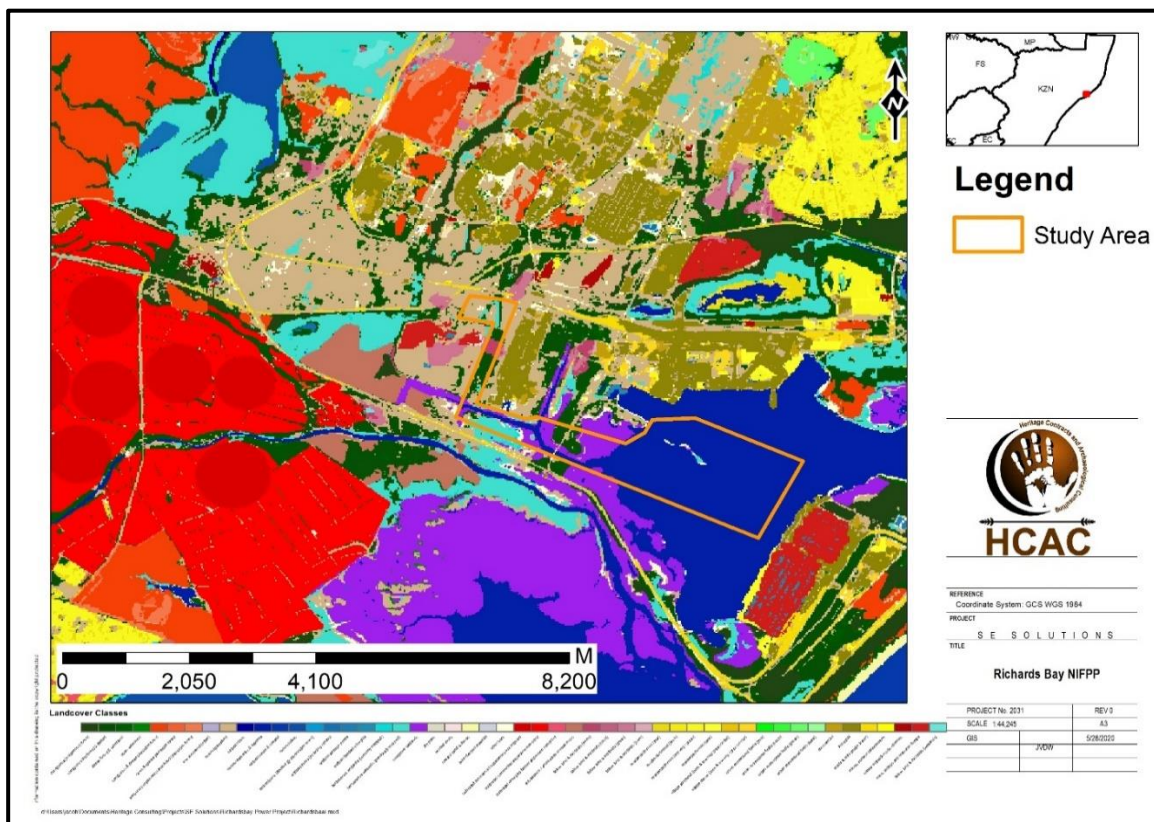


Figure 4. Landcover in the study area and surrounds highlighting small pockets of areas where sites can be expected that is not waterlogged or previously disturbed.

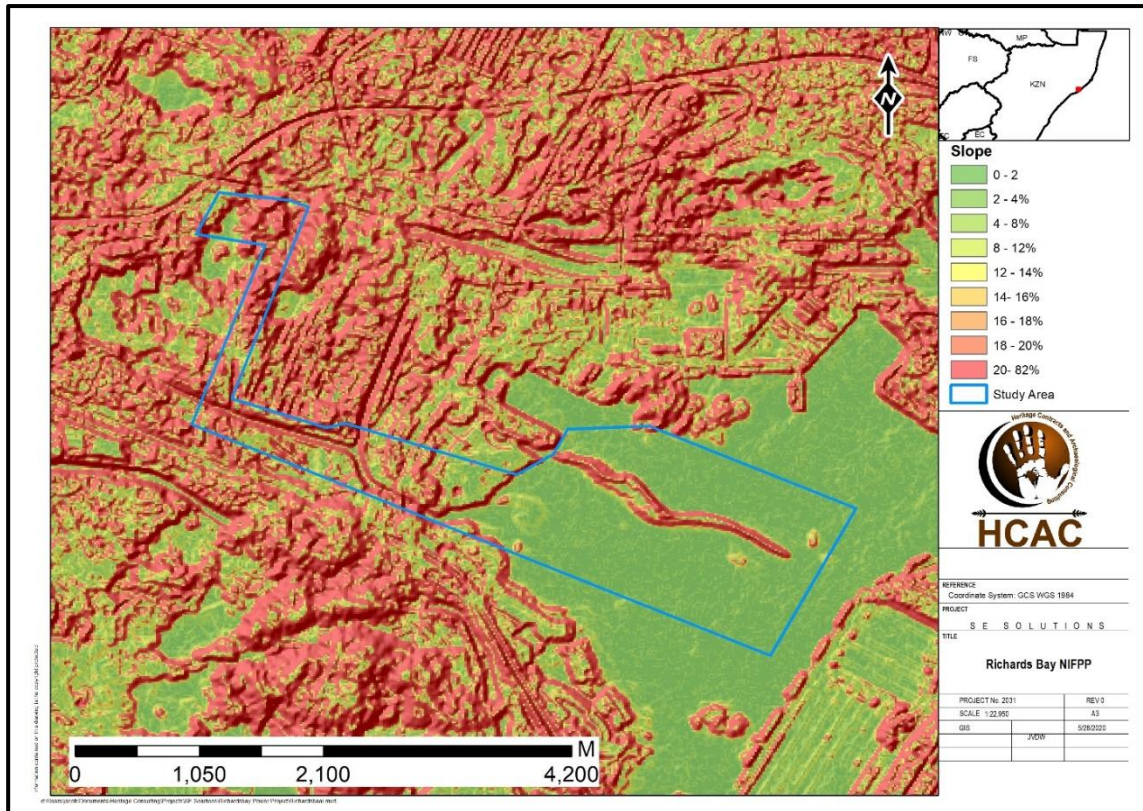


Figure 5: Slope grid of the study area and surrounds. Slopes are lower than 20 percent, suitable for containing heritage sites.

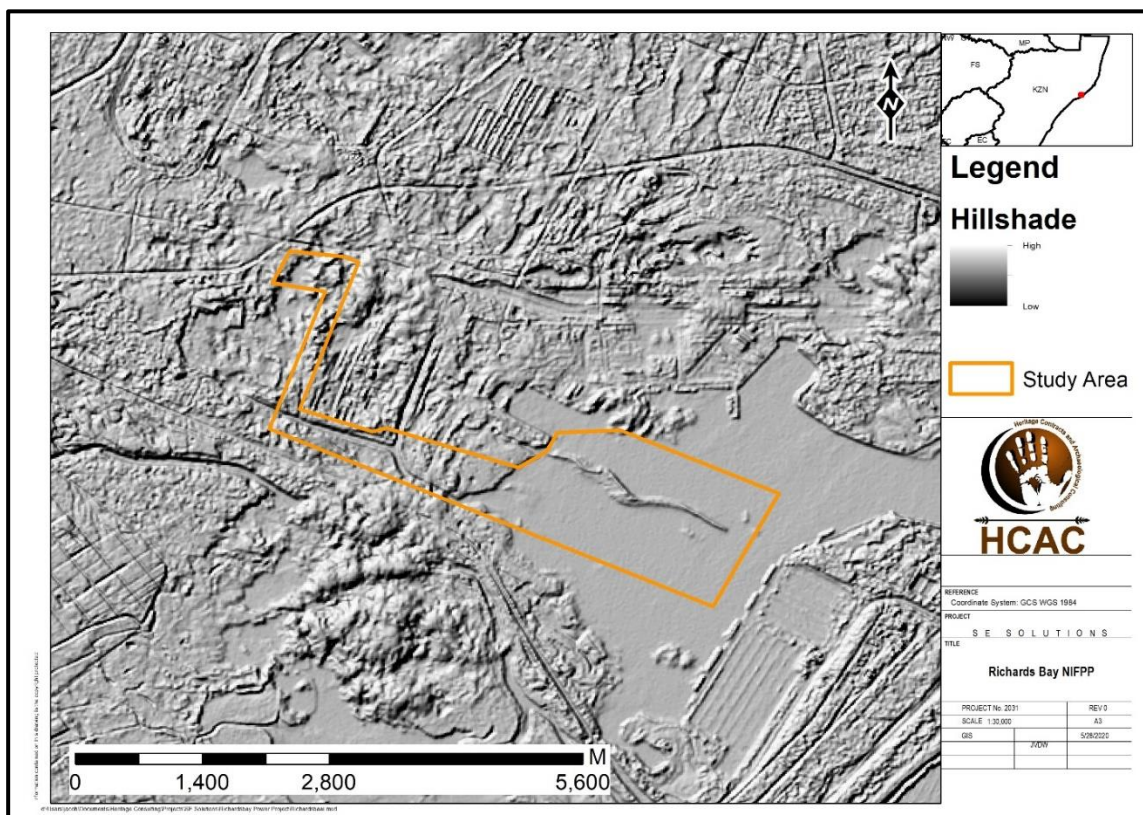


Figure 6. DEM and Hillshade of the study area and surrounds. Canals and disturbed/developed areas are clearly visible.

**5. ARCHAEOLOGICAL AND HISTORICAL INFORMATION AVAILABLE ON THE STUDY AREA****5.1 Stone Age**

The archaeology of KwaZulu-Natal can be divided in three main periods namely the Stone Age, Iron Age and Historical period.

**5.1.1. Stone Age**

South Africa has a long and complex Stone Age sequence of more than 2 million years. The broad sequence includes the Later Stone Age, the Middle Stone Age and the Earlier Stone Age. Each of these phases contains sub-phases or industrial complexes, and within these we can expect regional variation regarding characteristics and time ranges. For Cultural Resources Management (CRM) purposes it is often only expected/ possible to identify the presence of the three main phases.

Yet sometimes the recognition of cultural groups, affinities or trends in technology and/or subsistence practices, as represented by the sub-phases or industrial complexes, is achievable (Lombard 2011). The three main phases can be divided as follows;

- » Later Stone Age; associated with Khoi and San societies and their immediate predecessors. - Recently to ~30 thousand years ago.
- » Middle Stone Age; associated with Homo sapiens and archaic modern human - . 30-300 thousand years ago.
- » Earlier Stone Age; associated with early Homo groups such as Homo habilis and Homo erectus. - 400 000-> 2 million years ago.

The LSA is well represented in KwaZulu-Natal with an abundance of rock art, like the rock paintings at Giants Castle and Kamberg in the Drakensburg Mountains (Vinnicombe, 1976). Rock art sites have been also been documented in the areas around Estcourt, Mooi River and Dundee. Several caves in KZN contain significant archaeological deposits like the well-known MSA site of Sibudu Cave on the coast of KwaZulu-Natal, which shows evidence for early forms of cognitive human behavioural patterns (Wadley, 2005). Another well-known cave site called Border Cave is situated some 40 kilometres to the north east of the study area at the Ingodini Border Cave Museum Complex. The site was first investigated by Raymond Dart in 1934; here excavations exposed a thick deposit of archaeological material dating from the Iron Age overlaying MSA artefacts. Later excavations, by Beaumont in the early 1970's, revealed a complete MSA sequence succeeded by Early and Later Iron Age deposits (Klein 1977).

**5.1.2. Iron Age and historical period**

Bantu-speaking people moved into Eastern and Southern Africa about 2,000 years ago (Mitchell, 2002). These people cultivated sorghum and millets, herded cattle and small stock and manufactured iron tools and copper ornaments. Because metalworking represents a new technology, archaeologists call this period the Iron Age. Characteristic ceramic styles help archaeologists to separate the sites into different groups and time periods. The Iron Age as a whole represents the spread of Bantu speaking people and includes both the Pre-Historic and Historic periods. It can be divided into three distinct periods:

- » The Early Iron Age: Most of the first millennium AD.
- » The Middle Iron Age: 10th to 13th centuries AD.
- » The Late Iron Age: 14th century to colonial period.

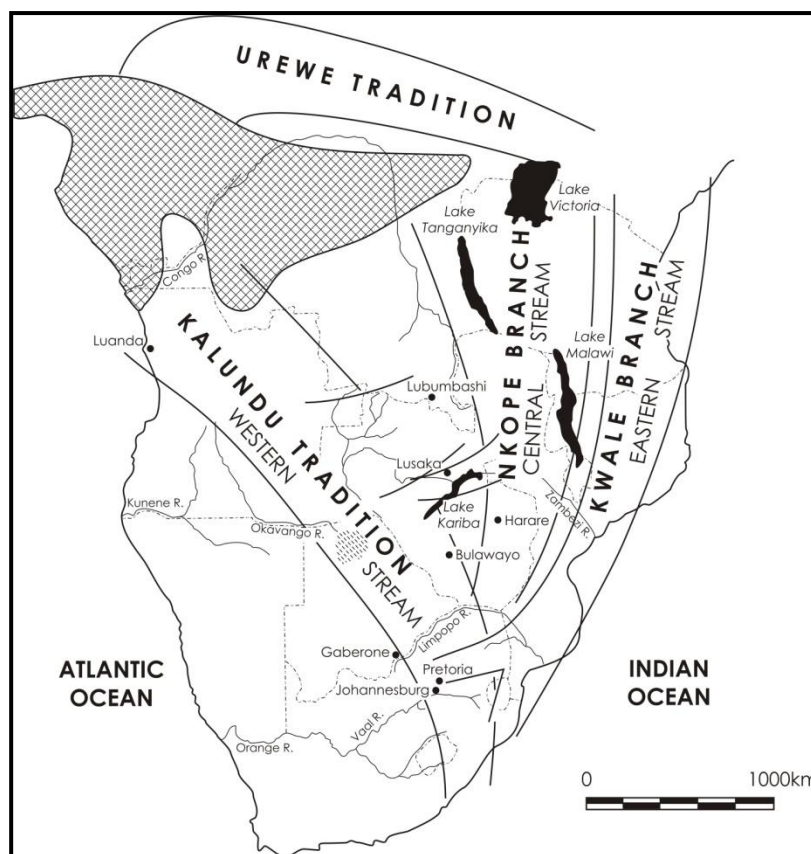


Figure 7: Movement of Bantu speaking farmers (Huffman 2007).

The first 1,000 years is called the Early Iron Age. Early Iron Age people made a living by mixed farming. They had the technology to work metals like iron. Existing evidence dates the Iron Age in southern Africa to the first millennium AD (Huffman, 2007). The site of Mzonjani, 15 km from Durban, is the oldest known Iron Age site in KwaZulu-Natal, dating to the 3rd Millennium AD (Huffman, 2007).

The area that was occupied by the Nguni speaking group of the Eastern Bantu language stream is characterised by settlement patterns defined as the Central Cattle Pattern (CCP) (Huffman, 2007). The Nguni ceramic sequence consists of the *Blackburn* (AD 1050-1500), *Moor Park* (AD 1350-1700) and, *Nqabeni* (AD 1700-1850), although excavated pottery is seldom decorated and therefore complicates archaeological interpretation (Huffman 2007: 441, 443).

*Blackburn* pottery is on record along the north and south coasts of KwaZulu-Natal, often in shell middens (Huffman 2007: 443). The available radiocarbon dates place *Blackburn* between about AD 1100 and perhaps 1500.

The earliest known type of stonewalling that characterises this settlement pattern (CCP) in the region is the Moor Park site, which dates from the 14th to 16th Centuries AD (Huffman, 2007). This type of stonewalling can be found in defensive positions on hilltops in the Midlands of KZN (Huffman, 2007). Archaeologists have concluded that the function of these structures was to serve mainly as defensive purposes (Huffman, 2007). Archaeologically, the Natal area was occupied by the Zulu people by AD 1050 (Huffman, 2007).

In the late 1400's, a Nguni group under the leadership of Dlamini settled in the Delagoa Bay area. By the late 1700's, the Dlamini clan moved into land settling on the banks of the Pongola River where it cuts through the Lebombo Mountains. An attempt was also made to occupy the area between the Pongola River and Magudu Hills (at that stage the area was under Ndwandwe rule), but they had to retreat back across the Pongola River (Bonner 2002; Fourie 2013).

Serious rivalry between the Ndwandwe under Zwide and the Ngwane (Swazi) under Sobhuza created a period of unrest and confrontation in the early 1800's. An attempt from Zwide to annex the grain fields on the south side of the Pongola River almost destroyed the Ngwane. These successive Ndwandwe attacks lead to the fleeing of the Ngwane to the far north (Bonner, 2002).

The Late Iron Age economy was based on agriculture and livestock. Both components were inextricably linked to cultural practices and even contributed to the evolution of other institutions. In the Nguni groups, economic activities were divided along gender lines; men were closely associated with cattle and women with farming. It is believed that maize was introduced to northern KwaZulu-Natal via the Delagoa Bay trade network and the crop soon became widely cultivated. According to oral tradition, the Mthethwa first produced maize in the late 18th century (Huffman 2007: 453, 457).

Along with cattle and trade beads, (both used as currency for bride wealth); metal objects also became markers of wealth, status and power. Iron and copper ornaments (bangles, neck-and earrings) were worn to indicate social position and were also used in trade (Wylie 2006: 58, 59). Other metal artefacts which may appear in the archaeological record are iron spear points and hoes used for agriculture (very few have been found in context). It is interesting that the deliberate burial of numerous metal objects (mostly spearheads and hoes) seems to have been a common practice in Late Iron Age KwaZulu-Natal (Maggs 1991). This phenomenon is probably connected to the period of instability leading up to the Mfecane.

The Difaqane (Sotho), or Mfekane/Imfecane ("the crushing" in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820's until the late 1830's (Berg 1999: 109-115). It came about in response to heightened competition for land and trade, and caused population groups like gun-carrying Griquas and Shaka's Zulus to attack other tribes (Berg 1999: 14; 116-119). In KwaZulu-Natal, this commenced in the early 1800's when the amaZulu were still under Senzangakona (Omer-Cooper, 1993).

The Mthethwa confederacy also arose in the 18th century as a consolidation of clans that formed part of the greater northern Nguni-speaking cultural group in southern Africa. Their ruling lineage (the Nyambose) originally settled between the Mfolozi and Mhlatuse rivers (Wylie 2006: 49).

Indian Ocean trade contributed to changes in the socio-political structures of many groups, including that of the Mthethwa: imported beads became part of bride-wealth/lobola currency, increased demand for meat and grain from east coast ships necessitated more control of agricultural labour, cattle-raids etc., and even influenced the evolution of the amabutho (age-set regiments) system. Ivory, hides, slaves, grain, and metal hoes were exchanged for incoming commodities such as beads and cloth (Mitchell & Whitelaw 2005: 228; Huffman 2007: 77-80). It was amid the ensuing power struggles between politically complex chiefdoms that the Mthethwa, Ndwandwe in the north and the Qwabe in the south emerged as prominent role-players.

## **5.2. Voortrekker Zulu War and Anglo-Boer War Sites**

No battles are indicated for the study area.

## **5.3. Cultural Landscape**

The greater study area around the Richards Bay Port was covered by extensive Phragmites swamplands, mangrove and swamp forests associated with the Mhlatuze estuary. This would not have been a focal point for occupation in antiquity (Lavin and Van Schalkwyk 2019).

The area still includes some mangrove plantations and the red mangrove, *Rhizophora mucronata* is restricted to a small stand northeast of the coal terminal in an area that was proclaimed a Natural Heritage Site, located at -28.804974, 32.068036 (Figure 8). The natural heritage site is located approximately 1,4 km away from the project under investigation. It should be noted that the greater area is part of a registered land claim by the Mandlazini Community Trust.



Figure 8. Google image (2020) of the known Natural Heritage site in the Richards Bay Harbour in relation to the project footprint.

**5.4. Historical Information**

An underwater HIA was conducted in the Port of Richards Bay (Maitland 2017) that covers a part of the study area. This study indicated that numerous shipwrecks have been lost along the Natal Coast and the following known shipwrecks occur in the area of the Richards Bay Harbour (Table 3). These are all, however, located outside of the impact area.

Table 3. Known shipwrecks in the area (adapted from Maitland 2017)

Name	Nationality	Date	Description
<i>São Jeronymo</i>	Portuguese	1552	This galleon departed Cochin for Lisbon in company with the <i>São João</i> on 3 February 1552. The two vessels came in sight of the African coast in mid-April and as they neared the Cape a month later, they encountered a savage west-north-west gale. The <i>São Jeronymo</i> wrecked to the north of the Mhlathuze River and there were no survivors. Most of the databases record this wreck north of Richards Bay.
<i>Penguin</i>	British	1904	This vessel sailed from Durban on 13 August 1904. She met with gales off the Mhlathuze River and sank 13 km off the coast. Eleven men died in the wreck, but survivors reached the coast by boats after 40 hours.
<i>S.S. Newark Castle</i>	British	1908	This iron, Union Castle Line extra steamer, 5 093 tons which was built by Barclay Corle, Glasgow in 1902. On a voyage from London to Mauritius she was grounded and then abandoned and three people lost their lives. After being abandoned, she drifted for 11 km before finally coming to rest in the mouth of the Mhlathuze River. The wreck was found in the Richards Bay channel in the 1970s, during construction of the harbour.

**5.5. Graves and Burial Sites**

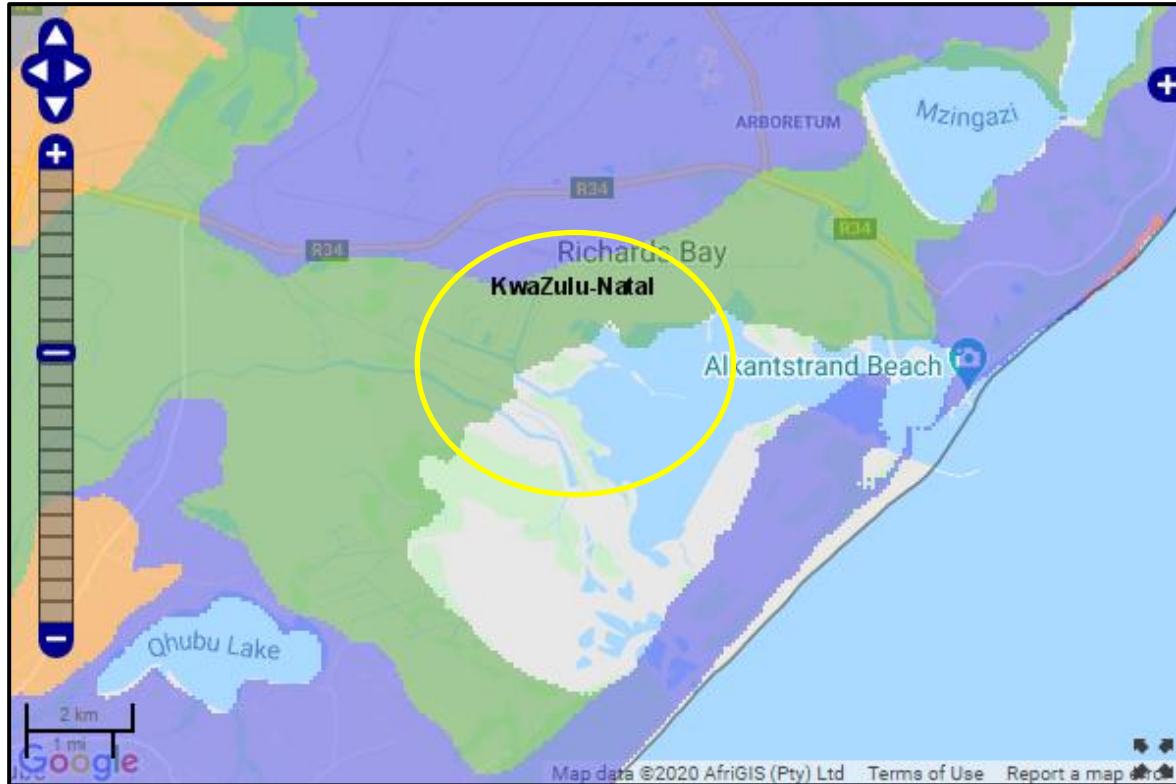
Graves and cemeteries are widely distributed across the landscape and can be expected anywhere.

**5.6. Known Battles in relation to the study area**

No battles took place in the study area.

**5.7. Paleontological Significance**

Paleontological sensitivity of the study area based on the SAHRA Paleontological map (Figure 9).



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

Figure 9. The approximate study area as indicated on the SAHRA paleontological sensitivity map.

Due to the moderate palaeontological sensitivity of the area, an independent desktop assessment was conducted (Bamford 2020). The study concluded that it is extremely unlikely that any fossils would be preserved in the Holocene aged Sibayi Formation sands. The sands are wind and water transported so the particles have been very well sorted and, even if fossils fragments have been incorporated into the sands, they would not be recognizable and concluded that there is no chance that fossils may occur in the dune sands of the estuary.

## 6. PROBABILITY OF OCCURRENCE OF SITES

Numerous archaeological and palaeontological sites have been previously recorded in the greater study area both inland and along the coast (Anderson and Anderson 2009) and coastal dune systems are very sensitive in terms of archaeological sites as evidenced by surveys for Richardsbay Minerals to the north of the study area. These sites date to the Iron Age with several Stone Age sites outside of the dune cordon (Anderson and Anderson 2009) and are discussed further in Section 8 of this report.

Based on the available desktop information, it is possible to determine the probability of finding archaeological and cultural heritage sites within the study area to a certain degree. For the purposes of this section of the report the following terms are used – low, medium and high probability. Low probability indicates that no known occurrences of sites have been found previously in the general study area. Medium probability indicates some known occurrences in the general study area are documented and can therefore be expected in the study area. A high probability indicates that occurrences have been documented close to or in the study area and that the environment of the study area has a high degree of probability for the occurrence of sites.

### » Archaeological and Cultural Heritage Landscape

NOTE: *Archaeology is the study of human material and remains (by definition) and is not restricted in any formal way as being below the ground surface.*

*Archaeological remains dating to the following periods can be expected within the study areas:*

#### » Stone Age finds

*ESA: Low Probability*

*MSA: Medium to high Probability*

*LSA: Medium to high Probability*

*LSA –Herder: Low Probability*

*Shell Middens – Medium Probability.*

#### » Iron Age finds

*EIA: Low Probability*

*MIA: Medium to high Probability*

*LIA: Medium - Probability*

#### » Historical finds

*Historical period: Low Probability*

*Historical dumps: Low Probability*

*Structural remains: Low Probability*

#### » Living Heritage

*For example, rainmaking sites: Low Probability*

#### » Burial/Cemeteries

*Burials over 100 years: Medium Probability*

*Burials younger than 60 years: Medium Probability*

*Subsurface excavations including ground levelling, landscaping, and foundation preparation can expose any number of these resources.*



## **7. ASSUMPTIONS AND LIMITATIONS**

This study did not assess the impact on intangible resources. Based on available data and resources as outlined in the report additional information that becomes available at a later stage might change the outcome of the assessment. It is assumed that the information obtained from the Digital Elevation Model is accurate. The study area was not subjected to a field survey at this stage in the environmental process, this will be done during the Impact Assessment phase. It is assumed that information obtained for the wider area is applicable to the study area. Additional information could become available in future that could change the results of this report.

## **8. FINDINGS**

A Portion of the current area under investigation was assessed as part of a 2009 study conducted by Anderson and Anderson. The survey recorded nine sites dating from the Cretaceous (paleontological) to the Late Iron Age as well as Stone Age scatters. One of these sites fall within the current study area – RBP 03 and another site is on record at the Pietermaritzburg Museum Archaeological Database (Bhizele Halt) also located within the study area with a grading of 3 B (High significance) (Table 4). Based on an analysis of the site locations (Figure 10) in relation to the physical landscape (Figure 3 -6) the north western parts of the study area are considered to be potentially of higher significance where the project is on higher laying natural grassland and natural wooded areas (Figure 11).

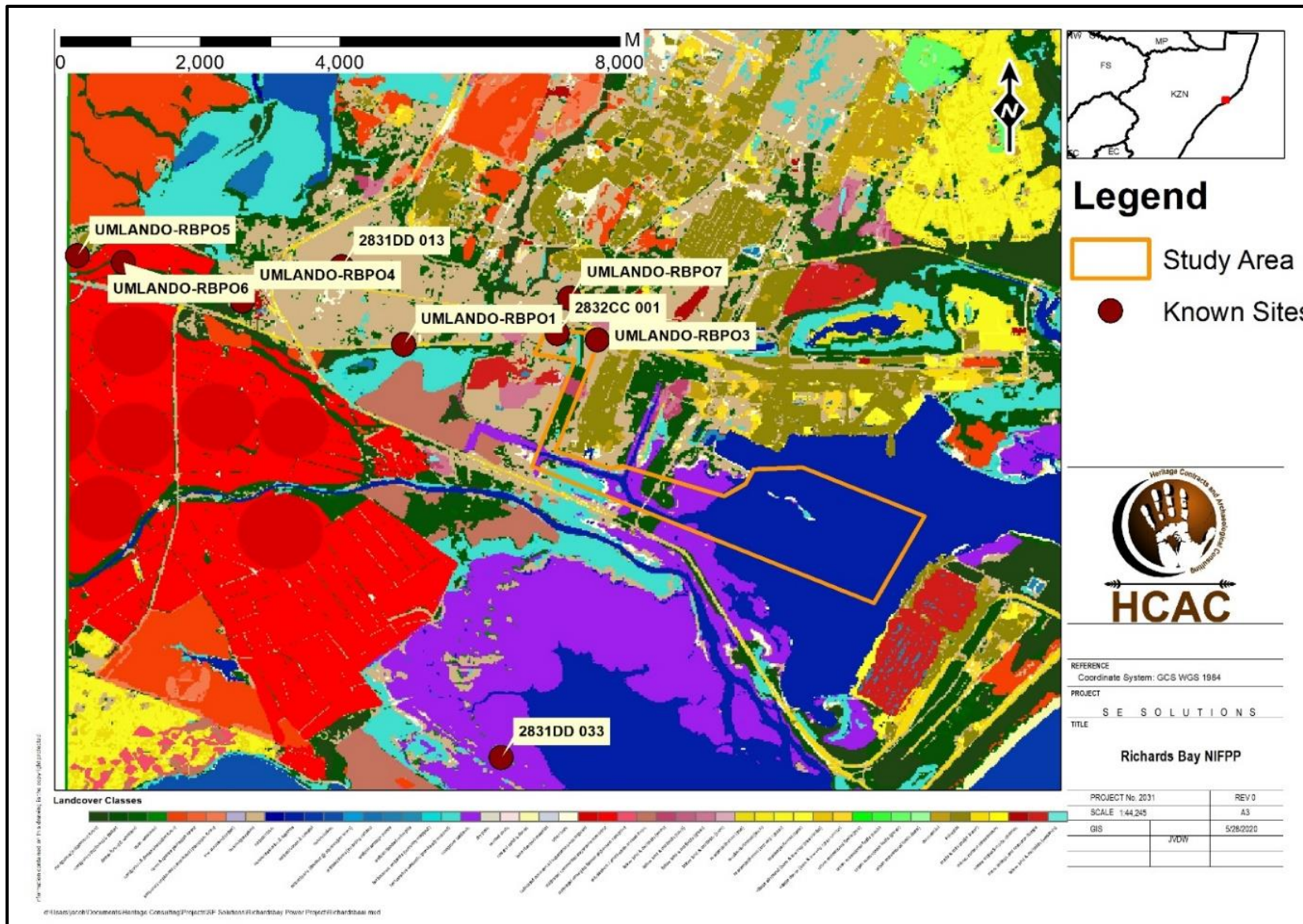


Figure 10. Known sites in the study area in relation to landcover of the area.

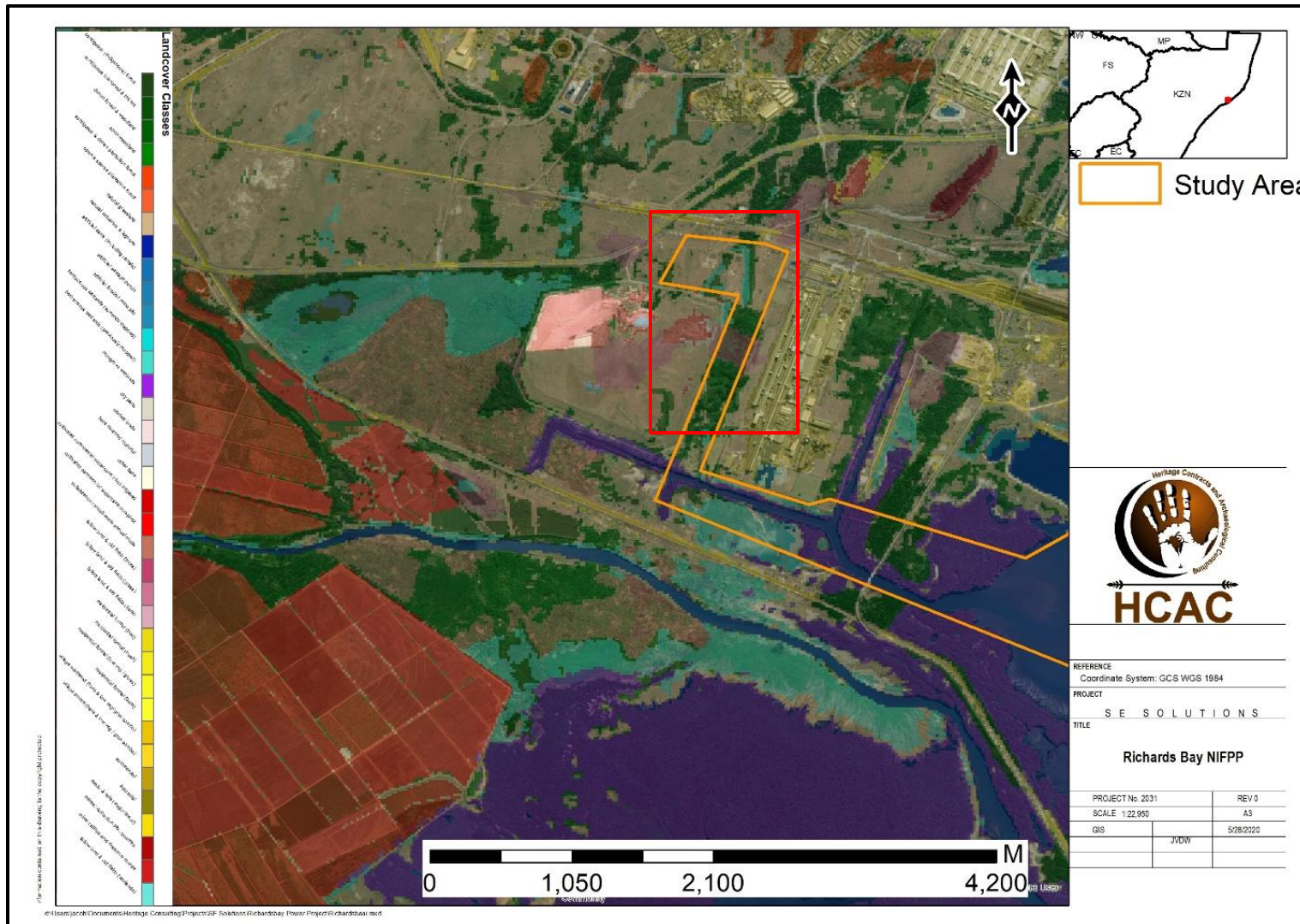


Figure 11: Areas considered to have higher expectation of finding heritage features marked by a red polygon.

Table 4. Known sites recorded within the study area.

Site	Source	Description	Significance
Umlando RBP03	Anderson & Anderson 2009	Weathered MSA and LSA stone tools	Low Significance
2832CC 001 Bhizele Halt	Pietermaritzburg Museum Database	Artefacts	Indicated as of high significance

**8.1. Potential Impact on heritage resources**

It is expected that the on-land infrastructure of the project can have a low to medium impact on known and unknown heritage resources (Table 5).

Table 5. Possible impact of the project on heritage resources

<b>Impact on Heritage resources</b>			
The construction of the proposed project could directly impact on graves, archaeological sites and historical sites.			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Disturbance and destruction of archaeological sites, historical sites and graves.	Construction activities could cause irreversible damage or destroy heritage resources and depletion of the archaeological record of the area.	Low to Medium on a local scale.	TBC after field work
<b>Description of expected significance of impact</b>			
Significance of sites, mitigation and significance of possible impact can only be determined after the field work has been conducted but based to the extent of industrial developments in the study area the impact on precolonial heritage is considered low.			
<b>Gaps in knowledge &amp; recommendations for further study</b>			
The study area has not been subjected to a heritage resource survey and it is assumed that information obtained for the wider region is applicable to the study area. To address these gaps, it is recommended that a field study should be conducted to confirm the presence of heritage resources after which mitigation measures will be recommended (if needed).			

**9. POTENTIAL SIGNIFICANCE OF HERITAGE RESOURCES**

Based on the current information obtained for the area at a desktop level it is anticipated that any sites that occur within the proposed development area will have a Generally Protected B (GP. B) or lower field rating and all sites should be mitigatable. No red flags have been identified.

## **10. CONCLUSIONS AND RECOMMENDATIONS**

This brief background study indicates that the general area under investigation is known to contain heritage sites and a cultural layering dating to the following periods:

- Stone Age sites;
- Iron Age Sites;
- Historical sites and;
- Graves can be expected anywhere on the landscape.

A Portion of the current area under investigation was assessed as part of a 2009 study conducted by Anderson and Anderson. The survey recorded nine sites dating from the Cretaceous (paleontological) to the Late Iron Age as well as Stone Age scatters. One of these sites fall within the current study area – RBP 03 and another site is on record at the Pietermaritzburg Museum Archaeological Database (Bhizele Halt) also located within the study area. Based on an analysis of the site locations in relation to the physical landscape the north western parts of the study area are considered to be potentially of higher significance where the project is on higher laying natural grassland and natural wooded areas. Every site is relevant to the Heritage Landscape, but it is anticipated that few sites in the study area could have conservation value. Therefore, the following conclusions are applicable:

» Archaeological and Palaeontological sites

The two known archaeological sites will require mitigation if impacted on and the presence of additional heritage resources will have to be verified during a field-based study. If any additional sites of significance are found these sites could be mitigated either in the form of conservation of the sites within the development or by a Phase 2 study where the sites will be recorded and sampled before the client can apply for a destruction permit for these sites prior to development.

The study area is of moderate paleontological sensitivity and an independent desk based paleontological study was conducted as part of the scoping phase. The study concluded that the proposed site lies on the Holocene aged sand dunes of the Sibayi Formation, Maputaland Group, that form a coastal barrier dune cordon that has been flattened by the river flowing into the estuary. These sands are very young and have been transported by wind and water action so would not contain any fossils, only sand-sized fragments that are unrecognizable and indistinguishable from modern fragments. There would be no impact on the fossil heritage so as far as the paleontology is concerned the project can proceed (Bamford 2020).

» Historical finds and Cultural landscape

Based on aerial photographs no structures occur in the development footprint, and no further mitigation is expected in terms of Section 34 of the NHRA. Known shipwrecks occur well away from the proposed development footprint.

» Burials and cemeteries

Formal and informal cemeteries as well as pre-colonial graves occur widely across Southern Africa. It is generally recommended that these sites are preserved *in situ* and within a development. These sites can however be relocated if conservation is not possible, but this option must be seen as a last resort and is not advisable. The presence of any grave sites must be confirmed during the field survey and the public consultation process.

» General

From a heritage viewpoint, the proposed project is considered to be viable. This will, however, be confirmed through the Heritage Impact Assessment to be undertaken.

## **11. PLAN OF STUDY**

With cognisance of the recorded archaeological sites in the wider area and in order to comply with the National Heritage Resources Act (Act No. 25 of 1999) and the Kwazulu-Natal Heritage Act (Act No. 4 of 2008) it is recommended that a field-based assessment should be conducted. During this study sites of archaeological, historical or places of cultural interest must be located, identified, recorded, photographed and described. During this study, the levels of significance of recorded heritage resources must be determined and mitigation proposed should any significant sites be impacted upon, ensuring that all the requirements of the SAHRA and AMAFA are met.

### **11.1 Reasoned Opinion**

If the above recommendations are adhered to, HCAC is of the opinion that the impact of the development on heritage resources can be mitigated. This will be confirmed through the Heritage Impact Assessment to be undertaken.

If during the pre-construction phase or during construction, any archaeological finds are made (e.g. graves, stone tools, and skeletal material), the operations must be stopped, and the archaeologist must be contacted for an assessment of the finds. Due to the subsurface nature of archaeological material and graves the possibility of the occurrence of unmarked or informal graves and subsurface finds cannot be excluded.

## **12. LIST OF PREPARERS**

Jaco van der Walt (Archaeologist and project manager).

## **13. STATEMENT OF COMPETENCY**

The author of the report is a member of the Association of Southern African Professional Archaeologists and is also accredited in the following fields of the Cultural Resource Management (CRM) Section, member number 159: Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation. Jaco is also an accredited CRM Archaeologist with SAHRA and AMAFA.

Jaco has been involved in research and contract work in South Africa, Botswana, Mozambique, Zimbabwe, Tanzania and the DRC and conducted well over 300 AIAs since he started his career in CRM in 2000. This involved several mining operations, Eskom transmission and distribution projects and infrastructure developments. The results of several of these projects were presented at international and local conferences.

**14. STATEMENT OF INDEPENDENCE**

I, Jaco van der Walt as duly authorised representative of Heritage Contracts and Archaeological Consulting CC, hereby confirm my independence as a specialist and declare that neither I nor the Heritage Contracts and Archaeological Consulting CC have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which the client was appointed as Environmental Assessment practitioner, other than fair remuneration for work performed on this project.



**SIGNATURE:**

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