

# NOTIFICATION OF INTENT TO DEVELOP

FOR A PROSPECTING RIGHT FOR COAL, PSEUDOCOAL,  
TORBANITE, CLAY AND AGGREGATE ON THE FARM FULENI  
RESERVE 14375 GU, MAGISTERIAL DISTRICT EMPANGENI,  
KWAZULU-NATAL PROVINCE.

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## Contents

|  |    |
|--|----|
| <b>1. Introduction</b> .....                                 | 4  |
| 2. Project Location .....                                    | 4  |
| <b>3. Project Details</b> .....                              | 5  |
| 3.1. Activities .....  | 6  |
| 3.2 Receiving Environment .....                              | 7  |
| 4. Legislative Framework .....                               | 9  |
| 4.1 Heritage Site Significance and Mitigation Measures ..... | 10 |
| 4.2. NHRA Section 38 Triggers .....                          | 11 |
| 5. Limitations and assumptions.....                          | 12 |
| 6. Heritage Resources .....                                  | 12 |
| 6.1. Paleontological resources .....                         | 13 |
| 6.2. Archaeological background.....                          | 14 |
| 6.2.1. Stone Age.....  | 14 |
| 6.2.2. Iron Age and historical period .....                  | 14 |
| 6.3. Identified / Known Heritage Resources.....              | 18 |
| 7. Potential Impact Assessment.....                          | 21 |
| 8. Recommendation .....                                      | 23 |
| 9. References .....  | 24 |

## Figures

|   |    |
|---|----|
| Figure 1. Locality map indicating the study area in red. ....   | 5  |
| Figure 2. Aerial image indicating the Project area and proposed drill sites. ....                                 | 7  |
| Figure 3. Undulating terrain.....   | 8  |
| Figure 4. General site conditions in the southern section.....  | 8  |
| Figure 5. Homesteads in the study area. ....  | 8  |
| Figure 6. General site conditions. ....   | 8  |
| Figure 7. General site conditions. ....   | 8  |
| Figure 8. General site conditions. ....   | 8  |
| Figure 9. The approximate study area (red polygon) as indicated on the SAHRA paleontological sensitivity map..... | 13 |
| Figure 10: Movement of Bantu speaking farmers (Huffman 2007).....   | 15 |
| Figure 11. Known sites in the region.....   | 19 |
| Figure 12. Known sites in prospecting area .....  | 20 |
| Figure 13. Drilling sites in relation to known sites.....   | 22 |

## Tables

|   |    |
|---|----|
| Table 1. Heritage Field ratings .....                 | 10 |
| Table 2. NHRA Triggers.....                           | 11 |
| Table 3. CRM studies consulted for this project. .... | 18 |
| Table 4. Heritage resources in the study area .....   | 21 |

## 1. Introduction

Beyond Heritage was requested by Imvukuzane Resources (Pty) Ltd to compile a heritage Notice of Intention to Develop (NID) that will be submitted by the EAP to AMAFA as part of the environmental authorization process for a prospecting right application. The prospecting will target coal, pseudo coal, torbanite, clay and aggregate on of the farm Fuleni Reserve 14375 GU, Magisterial District Empangeni, KwaZulu-Natal Province. The prospecting includes the following activities distributed over an area of approximately 14 717ha:

### Drill site establishment:

A drill site of approximately 400 m<sup>2</sup> will be established that will require:

- Clearing of vegetation for sumps and the drill entrance point;
- Earth sumps for water recycling;
- Laydown area for drill rods, fuel and chemical storage; and
- Chemical toilets.

### Drilling and removal of geological cores:

- Drilling a hole of approximately 110 mm in diameter and removing of rock core.
- Number of boreholes: approximately 55

### Casing of boreholes:

- 1m<sup>2</sup> per borehole. Number of boreholes limited to 55.

### Rehabilitation of drill sites.

The proposed project triggers listed activities in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended 2017) and therefore requires a basic assessment process to obtain environmental authorization.

## 2. Project Location

|  |                                      |
|--|--------------------------------------|
| <b>Province</b>                              | KwaZulu-Natal Province               |
| <b>District Municipality</b>                 | King Cetshwayo District Municipality |
| <b>Nearest Town</b>                          | Kwambonambi/ Mtubatuba               |
| <b>Property Name and Number</b>              | Portion 0 of Fuleni Reserve 14375 GU |
| <b>1:50 000 Map Sheet</b>                    | 2832AC; 2831BD; 2831 DB              |
| <b>GPS Co-ordinates</b>                      | -28.476632°                          |
| <b>(Relative center point of study area)</b> | 31.892753°                           |

The proposed prospecting footprint falls within a rural area partially altered through subsistence farming.

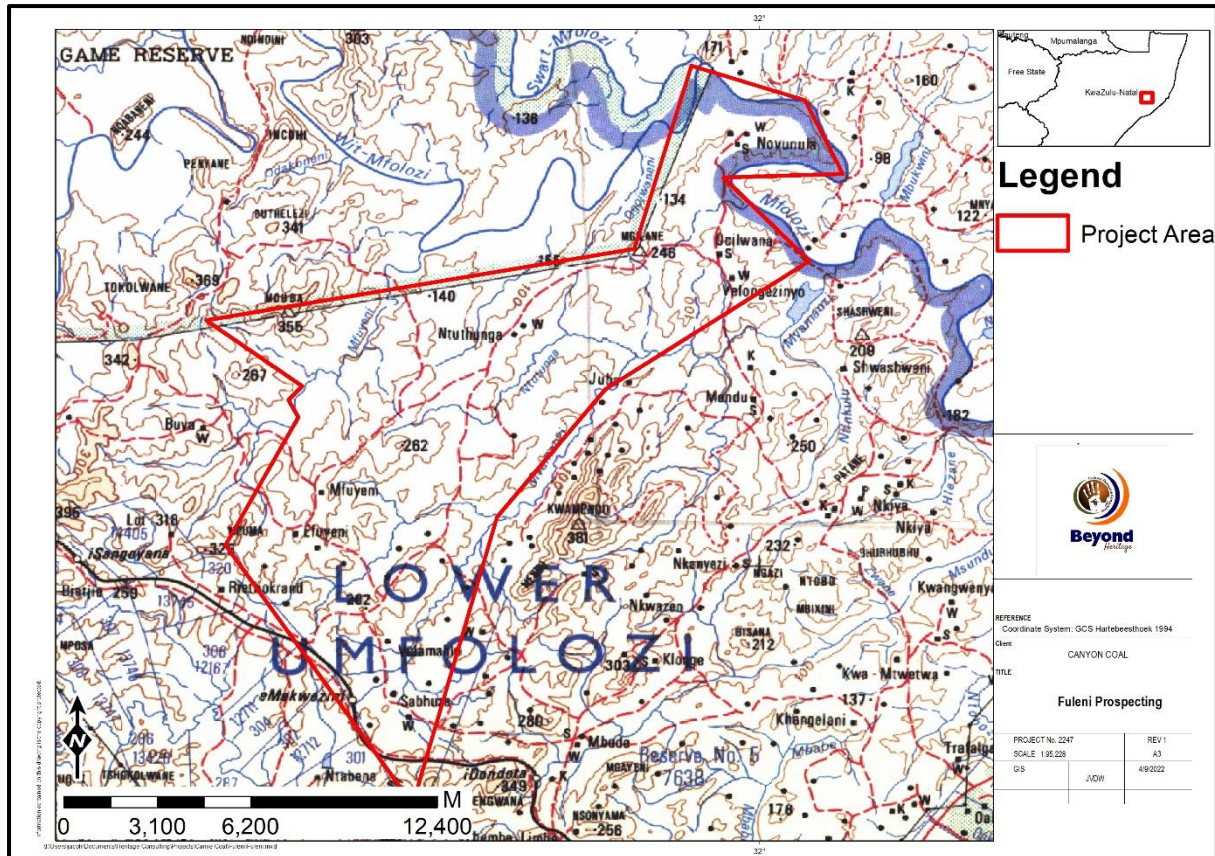


Figure 1. Locality map indicating the study area in red.

### 3. Project Details

The exact location where drilling will be carried out will be determined by the results of geophysical and geological work carried out in Phase 1 of the prospecting program. The initial holes will be drilled on the Prospecting area that forms part of this application. Approximately 55 holes will be drilled. All drill holes will be approved by the environmental manager prior to approval thereof. The environmental management plan related to this project will consider environmental sensitivities and advise on the location of drilling holes. There will be clearly defined targets that will warrant testing by diamond, reverse circulation or percussions drilling. It is envisaged that a combination of HQ (63.5 mm) and NQ (47.63 mm) drilling will be used to drill targets. The borehole depths are expected to vary between 25 m and 125 m with an average of approximately 70 m. The core will be logged, cut and sampled at a core yard to be located near the prospecting site. The samples will be crushed and milled and then analyzed at an accredited laboratory in for coal quality.

### **3.1. Activities**

The following invasive activities will take place during the lifespan of the proposed prospecting.

#### **Drill site establishment:**

A drill site of approximately 400 m<sup>2</sup> will be established that will require:

- Clearing of vegetation for sumps and the drill entrance point;
- Earth sumps for water recycling;
- Laydown area for drill rods, fuel and chemical storage; and
- Chemical toilets.

#### **Drilling and removal of geological cores:**

- Drilling a hole of approximately 110 mm in diameter and removing of rock core.
- Number of boreholes will be finalised once non-invasive prospecting is completed.

#### **Casing of boreholes:**

- 1m<sup>2</sup> per borehole..

#### **Rehabilitation of drill sites.**

The existing farm roads/tracks will be used as far as practically possible. No additional roads are foreseen to be constructed.

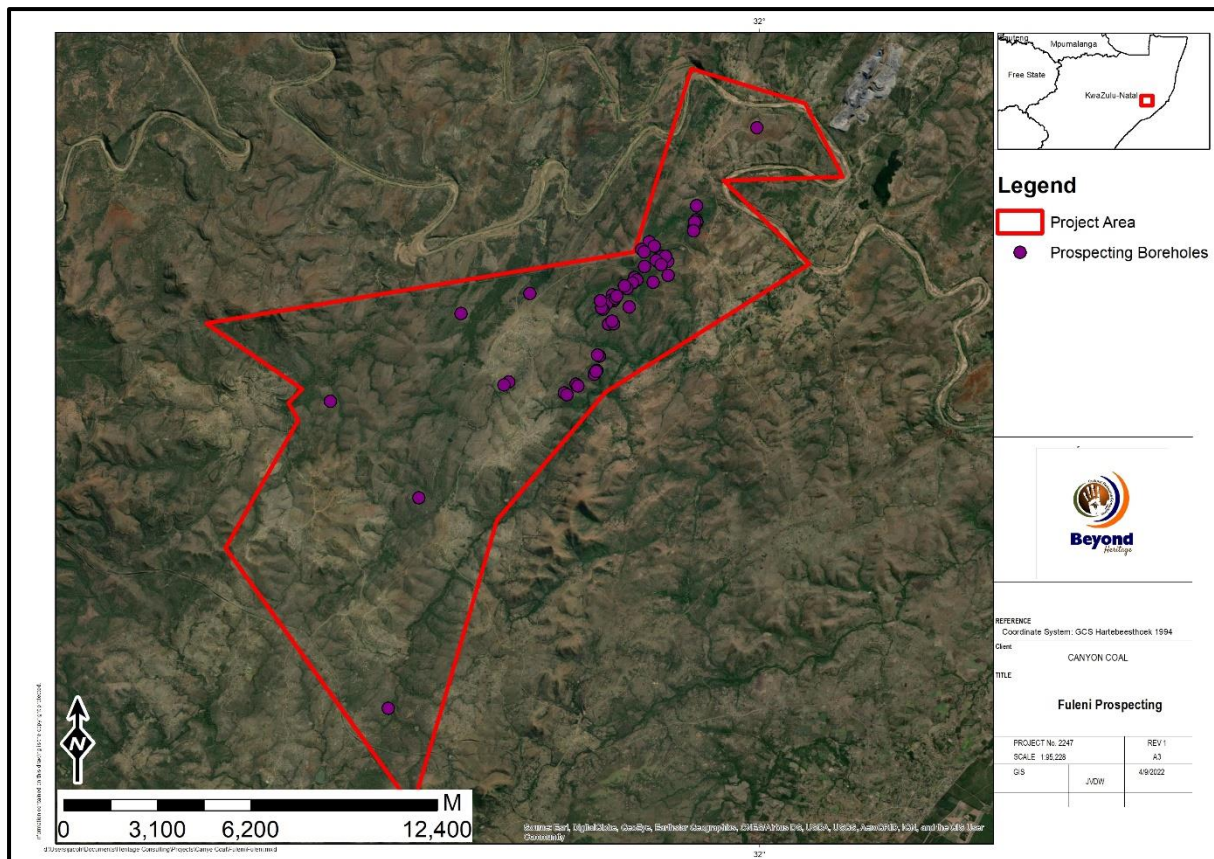


Figure 2. Aerial image indicating the Project area and proposed drill sites.

### 3.2 Receiving Environment

The project area is mostly undeveloped and rural with low-density dispersed settlements and associated subsistence agriculture. Dwellings are grouped as small family-sized homesteads located in undulating terrain. The foremost part of the prospecting area comprises of natural vegetated areas representative of the Zululand Lowveld, -Sourveld, and -Coastal Thornveld vegetation types.

The prospecting area falls within the Eastern Coal Basins that lie on the eastern margin of the Kaapvaal Craton. Several isolated coalfields including Kangwane, Maloma (Swaziland), Nongoma and Somkhele form the Eastern Coal Basins and lie within the Lebombo-Natal monocline. Stratigraphically, these eastern coalfields except for Somkhele occur within the sediments of the Ecca Group i.e., Pietermaritzburg, Vryheid (where coal beds are known to occur) and Volksrust Formations. The Somkhele coalfield consisting of Emakhwezini Formation has been classified into the Beaufort Group as supported by paleontological (fossil) evidence



Figure 3. Undulating terrain.



Figure 4. General site conditions in the southern section.



Figure 5. Homesteads in the study area.



Figure 6. General site conditions.



Figure 7. General site conditions.



Figure 8. General site conditions.



#### 4. Legislative Framework

For this project the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) and the KZN Act 5 of 2018 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
- 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
- i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

Section 34 of the NHRA and Section 37 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 40 of the KZN Heritage Act. Section 36 of the NHRA and Section 39 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.

The Notification of Intent to Develop (NID) is submitted to AMAFA in terms of Sections 38(1) and 38(8) of the NHRA and Section 41 (1) of the KZN Heritage Act. This NID is submitted to outline what (if any) heritage resources are likely to be affected, how the character of the site will change and what processes need to be followed.

#### 4.1 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.

**Table 1. Heritage Field ratings**

| <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                                  |

#### 4.2. NHRA Section 38 Triggers

The following aspects of Section 38 of the NHRA and Section 41 of the KZN Heritage Act may be triggered by the proposed project.

**Table 2. NHRA Triggers**

|          |     | <b>NHRA Section 38 (1) Activities / Triggers</b>   | <b>Summary description<br/>(e.g. 500 m road, etc.)</b>  |
|----------|-----|--|---|
|          | A   | Any linear development or barrier >300 m   | The existing farm roads/tracks will be used as far as practically possible. No additional roads   |
|          | b   | Any bridge or similar structure >50 m  | No bridges will be constructed – not applicable   |
| <b>X</b> | c   | Any development or activity that will change the character of a site:                                  | A drill site of approximately 400 m <sup>2</sup> will be established for 55 drill points resulting in a marginal temporary change to the study site |
|          | i   | ≥5 000m <sup>2</sup> in extent   | No. Each drill site will measure approximately 400 m <sup>2</sup>   |
|          | ii  | Involving ≥3 existing erven/<br>Subdivisions   | Not applicable  |
|          | iii | Involving ≥3 or more erven/<br>divisions consolidated within past 5 years.                             | Not applicable  |
|          | d   | Rezoning of a site ≥10 000m <sup>2</sup> in extent.  | No rezoning will take place as part of the prospecting right application – not applicable   |
| <b>X</b> | e   | Other triggers, e.g.: in terms of other legislation, (i.e.: National Environment Management Act, etc.) | NEMA, NWA, MPRDA  |

### **5. Limitations and assumptions**

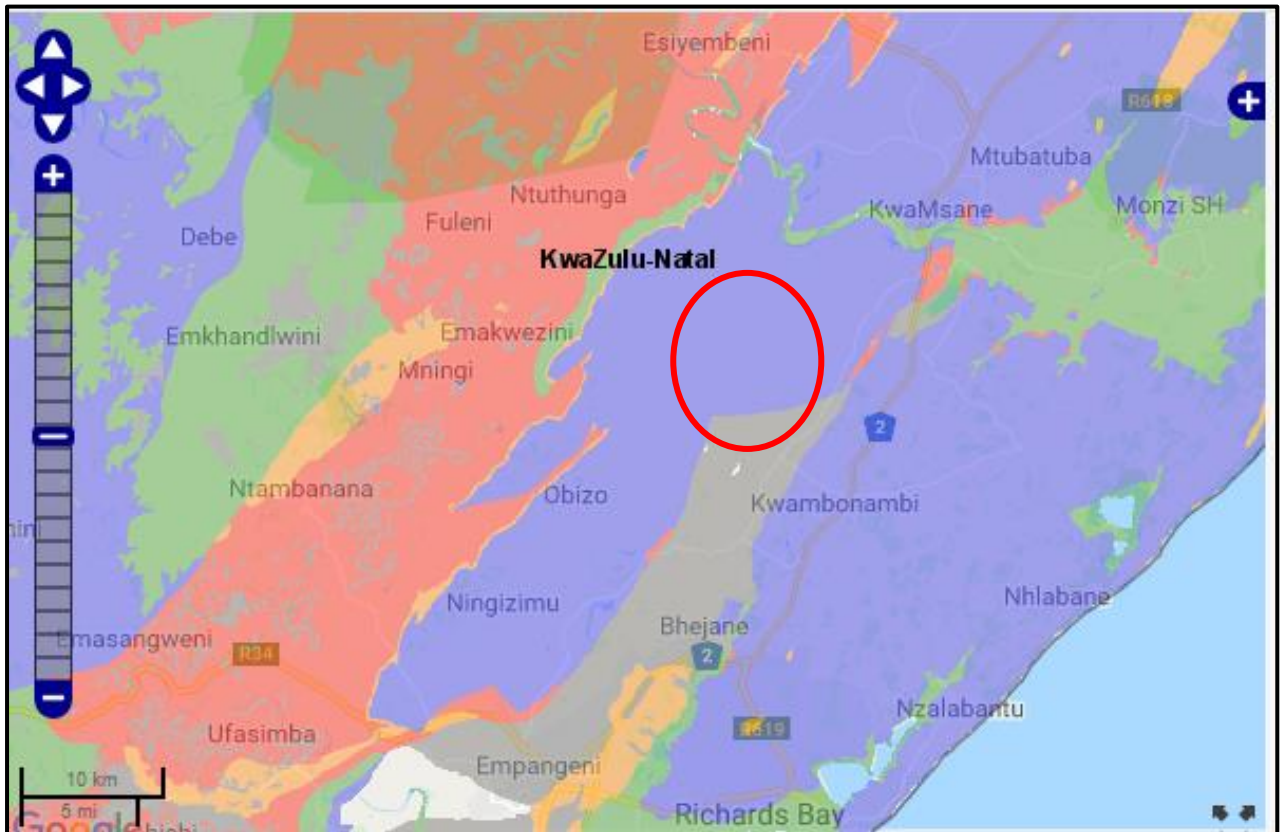
The study area was not subjected to a field survey at this stage in the process. It is assumed that information obtained for the wider area is applicable to the study area. Additional information could become available in future that could change the results of this report.

### **6. Heritage Resources**

Heritage resources are defined in Section 2 of the NHRA as “any place or object of cultural significance”, where cultural significance can be understood as meaning “aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance”. Heritage resources together constitute the National Estate, as defined in Section 3 of the NHRA, and each resource is recognized and protected under the Act.

A variety of heritage resources contribute to the heritage character of the area, and these are briefly dealt with below. Categories of potential heritage resources expected was assessed to derive the heritage character of the area. This was done by consultation of heritage reports captured into SAHRIS as well as other archaeological databases.

### 6.1. Paleontological resources



| 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 (red polygon) as indicated on the SAHRA paleontological sensitivity map.

## **6.2. Archaeological background**

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

### **6.2.1. 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 et al 2012). 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 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).

### **6.2.2. 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.

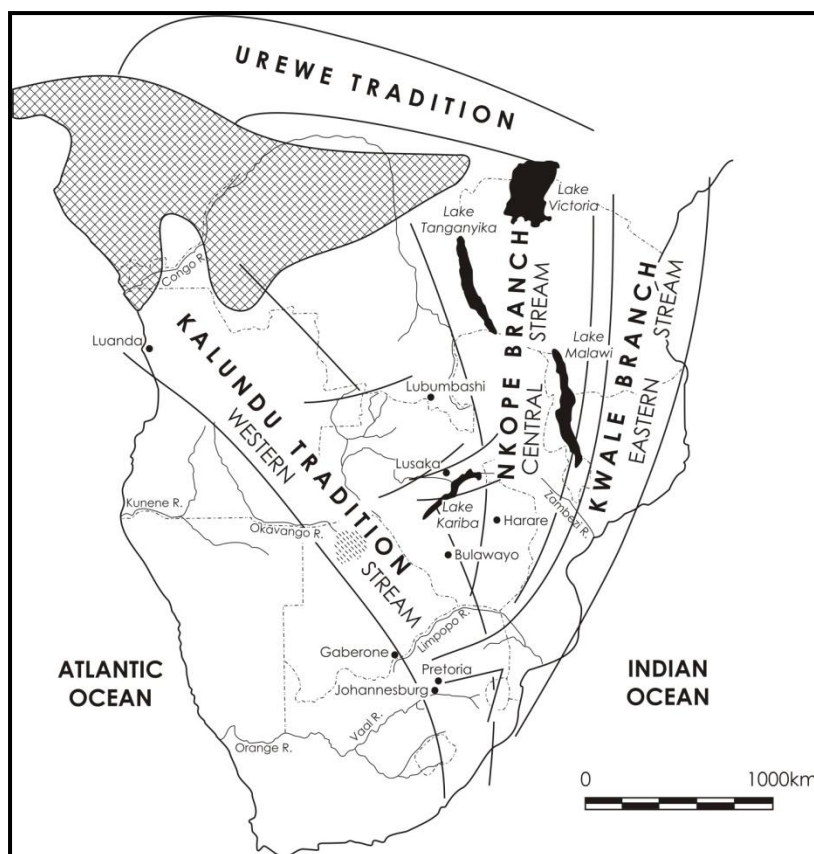


Figure 10: Movement of Bantu speaking farmers (Huffman 2007).

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.

Closer to the study area two areas are of significance as discussed below:

### **Hluhluwe-iMfolozi Park**

Hluhluwe-iMfolozi Park is the oldest proclaimed natural park in Africa and lies west of the project area. It consists of 96 000 ha of hilly topography located 280 km north of Durban in central Zululand, KwaZulu-Natal and is known for its rich wildlife and conservation efforts. The park is the only state-run conservation area in KwaZulu-Natal where all the big five game animals occur. Due to conservation efforts, the park now has the largest population of white rhino in the world. Hluhluwe-iMfolozi was originally three separate reserves that joined under its current title in 1989. Throughout the park there are many signs of Stone Age archaeological sites. The area was originally a royal hunting ground for the Zulu kingdom, but was established as a park in 1895. The Umfolozi and Hluhluwe reserves were established primarily to protect the white rhinoceros, then on the endangered species list. The park is of high heritage significance (Van Schalkwyk 2013).



### **Mfolozi River**

The Mfolozi River lies adjacent to the project area and is formed by the confluence of the Black (*Imfolozi emnyama*) and White Mfolozi (*Imfolozi emhlope*) Rivers near the south eastern boundary of the Hluhluwe-iMfolozi Park<sup>3</sup>. The isiZulu name *imFolozi* is generally considered to describe the zigzag course followed by both tributaries, though other explanations have been given.

The river flows in an easterly direction to the Indian Ocean at Maphelana, a coastal resort just south of the St Lucia River mouth. It originally meandered over the Monzi Flats, where it split into numerous slow-flowing channels before entering the St. Lucia Estuary at Honeymoon Bend. The slow-moving water and reed beds in channels operated as a natural filtering system that removed silt from the Mfolozi floodwaters and created a rich habitat for numerous species. During the 1950s, the Umfolozi Landowners Association contained and artificially channelled the river through the Monzi Flats to develop sugarcane farms. The new Mfolozi canal resulted in the unfiltered water depositing its silt load after entering the slower moving St. Lucia Estuary. This caused the estuary mouth to rapidly silt up. There had only been one record of this occurring until that time, during the sustained drought during the 1930s (Van Schalkwyk 2013).

### 6.3. Identified / Known Heritage Resources

Few CRM studies have been conducted in the area, the following reports have been consulted in this report:

**Table 3. CRM studies consulted for this project.**

| Author            | Year | Project   | Findings   |
|-------------------|------|---|--|
| Van Schalkwyk, L. | 2013 | Heritage Scoping Assessment Report: Proposed Fuleni Anthracite Coal Mine, uMhlatuze Local Municipality, uThungulu District, KwaZulu-Natal             | Places associated with oral traditions and living heritage; Landscapes and natural features; Traditional burial places; and Archaeological sites |
| Pelser, A.J.      | 2013 | Report On A Heritage Survey On The Farm Koningskroon 447, Emakhosini Opathe Heritage Park Area, Near Ulundi, KZN.                                     | Numerous Iron Age and Historic sites, A fort and also grave sites.   |
| Anderson, G.      | 1998 | Archaeological Survey of the Proposed Route for the Pongola-Vergenoeg Transmission Line, Pietermaritzburg: Institute for Cultural Resource Management | 7 Iron Age sites   |

Information obtained from several archaeological databases show a high occurrence of heritage sites in the area (Figure 11) with several known sites located inside the study area (Figure 12). According to SAHRIS the study area itself has not been subjected to a HIA and it is expected that a high frequency of similar sites to finds in the greater area can be found in the Project area, including heritage resources such as:

- Middle and Late Stone Age sites;
- Rock art sites;
- Iron Age stone walled sites related to the rich Zulu heritage of the area;
- Cultural landscapes and also natural heritage of the area;
- Places associated with oral traditions and living heritage;
- Numerous Grave sites.

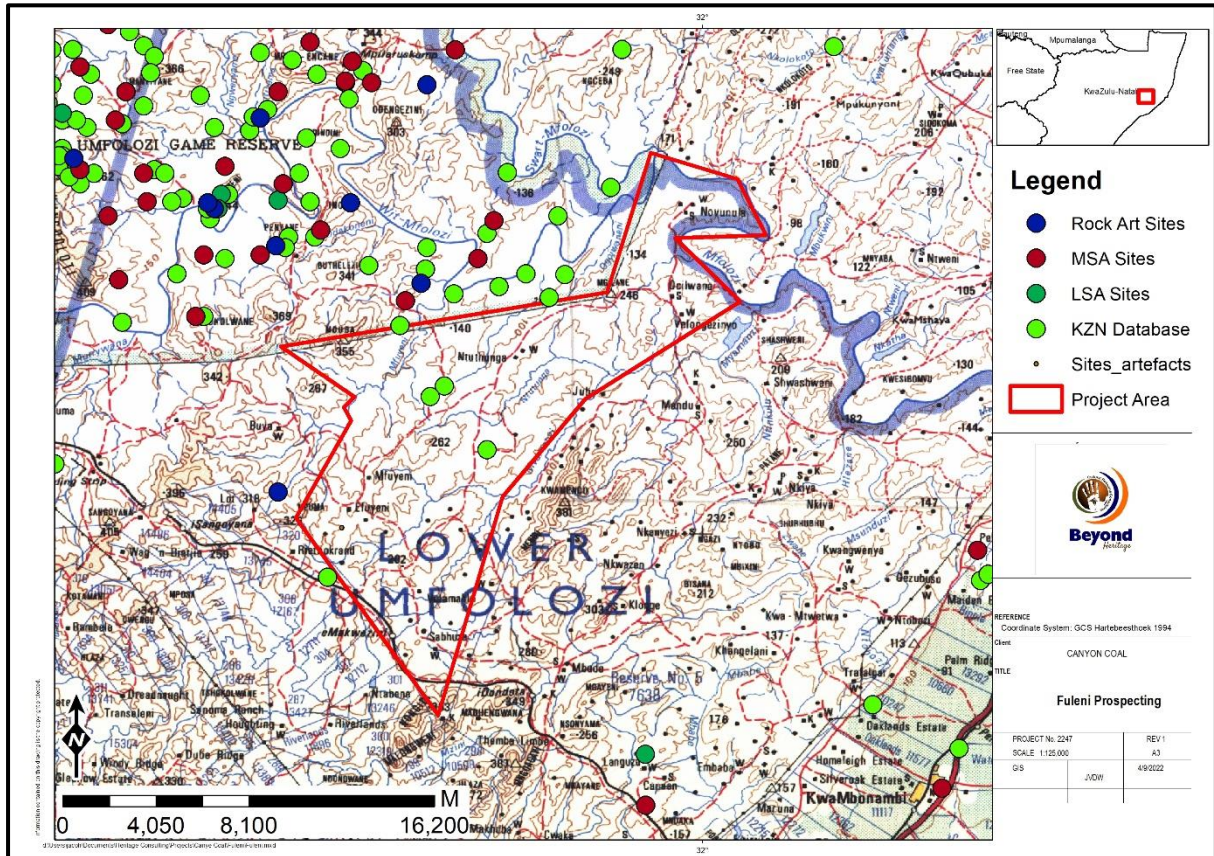


Figure 11. Known sites in the region.

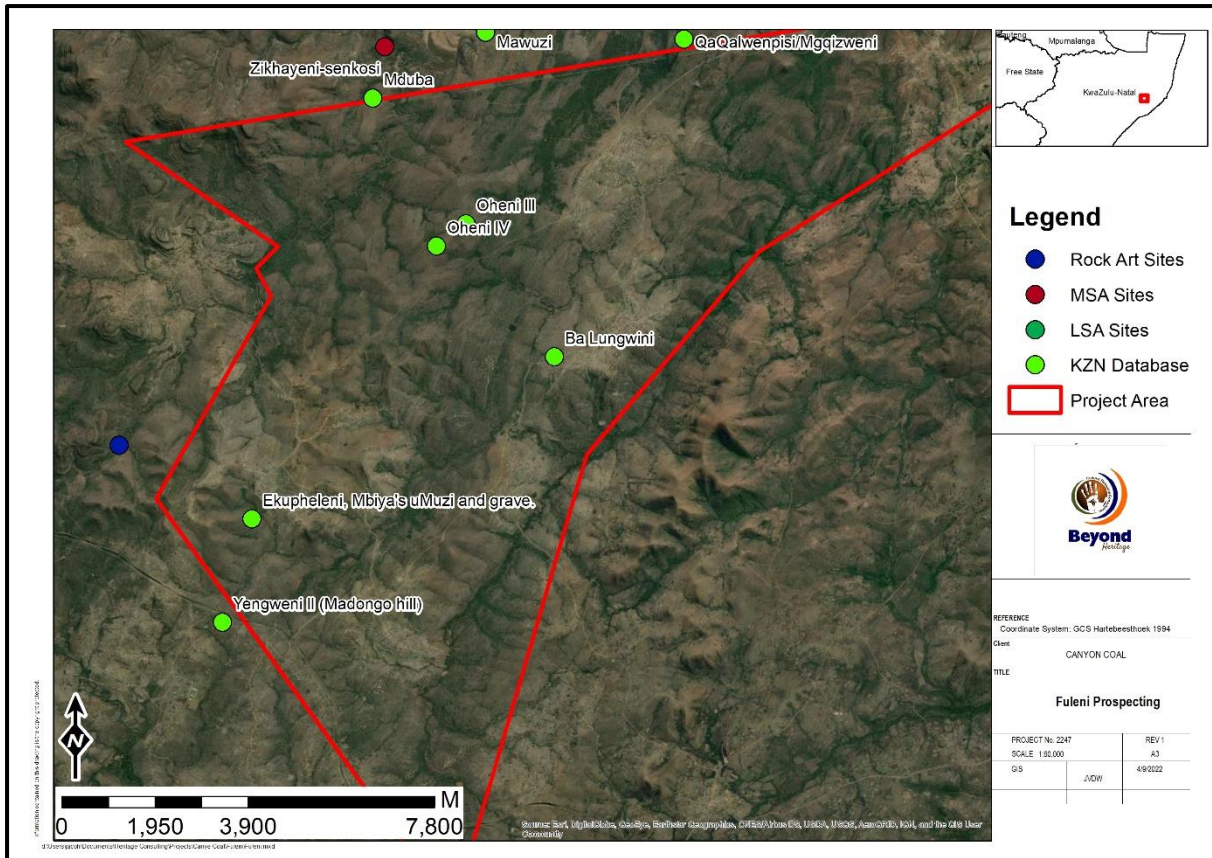


Figure 12. Known sites in prospecting area.

## 7. Potential Impact Assessment

The following categories of heritage resources as defined in Section 3 of the NHRA are protected by the Act and are expected to occur within the study area. Although all heritage resources are relevant to the Heritage Landscape and are non-renewable, it is anticipated that few sites in the study area could have conservation value. These sites should be avoided. As the presence and location of resources in the impact areas still need to be confirmed by a physical survey, at this level, the potential impacts will be assessed based on a worst-case scenario without mitigation measures in place to avoid direct impacts to heritage resources as outlined in Table 4.

**Table 4. Heritage resources in the study area**

|   |                |  |
|---|----------------|--|
|   |                | <b>Places, buildings, structures and equipment of cultural significance</b>  |
|   | <b>3(2)(a)</b> | Description of resource: Religious sites and intangible sites related to specific places on the landscape                            |
|   |                | Potential impact: Accidental impact to these features  |
| X |                | <b>Places to which oral traditions are attached or which are associated with living heritage</b>                                     |
|   | <b>3(2)(b)</b> | Description of resource: The area is known to include places associated with oral history and living heritage (Van Schalkwyk 2013)   |
|   |                | Potential impact: Degradation of indigenous knowledge systems, intrinsic cultural significance and alteration to the sense-of-place. |
| X |                | <b>Historical settlements and townscapes</b>   |
|   | <b>3(2)(c)</b> | Description of resource: Zulu background and settlements   |
|   |                | Potential impact: Alteration to the cultural landscape and sense-of-place  |
| X |                | <b>Landscapes and natural features of cultural significance</b>  |
|   | <b>3(2)(d)</b> | Description of resource: As per van Schalkwyk (2013) landscapes and natural features can be impacted on by development in the area.  |
|   |                | Potential impact: Degradation of indigenous knowledge systems, intrinsic cultural significance and alteration to the sense-of-place. |
|   |                | <b>Geological resources of scientific or cultural importance</b>   |
|   | <b>3(2)(e)</b> | Description of resource: The area is of low paleontological significance.  |
|   |                | Potential impact: None   |
| X |                | <b>Archaeology and/or paleontology (Including archaeological sites and material, fossils, rock art, battlefields &amp; wrecks)</b>   |
|   | <b>3(2)(f)</b> | Description of resource: Numerous sites are indicated on the KZN Database and on SAHRIS including Stone age sites and rock art.      |
|   |                | Potential impact: Damage to and/or destruction of non-renewable archaeological resources.  |
| X |                | <b>Graves and burial grounds (e.g.: ancestral graves, graves of victims of conflict, historical graves &amp; cemeteries)</b>         |
|   | <b>3(2)(g)</b> | Description of resource: Burial sites are indicated on the KZN database for the study area.  |

|   |         |   |
|---|---------|---|
|   |         | Potential impact: Damage to and/or destruction of burial grounds.               |
| X | 3(2)(a) | <b>Other human remains</b>  |
|   |         | Description of resource: Unmarked graves.                                       |
|   |         | Potential impact: Unmarked graves can be accidentally exposed                   |
|   | 3(2)(h) | <b>Sites of significance relating to the history of slavery in South Africa</b> |
|   |         | Description of resource: None   |
|   |         | Potential impact: None  |
|   | 3(2)(i) | <b>Movable objects</b>  |
|   |         | Description of resource: None   |
|   |         | Potential impact: None  |

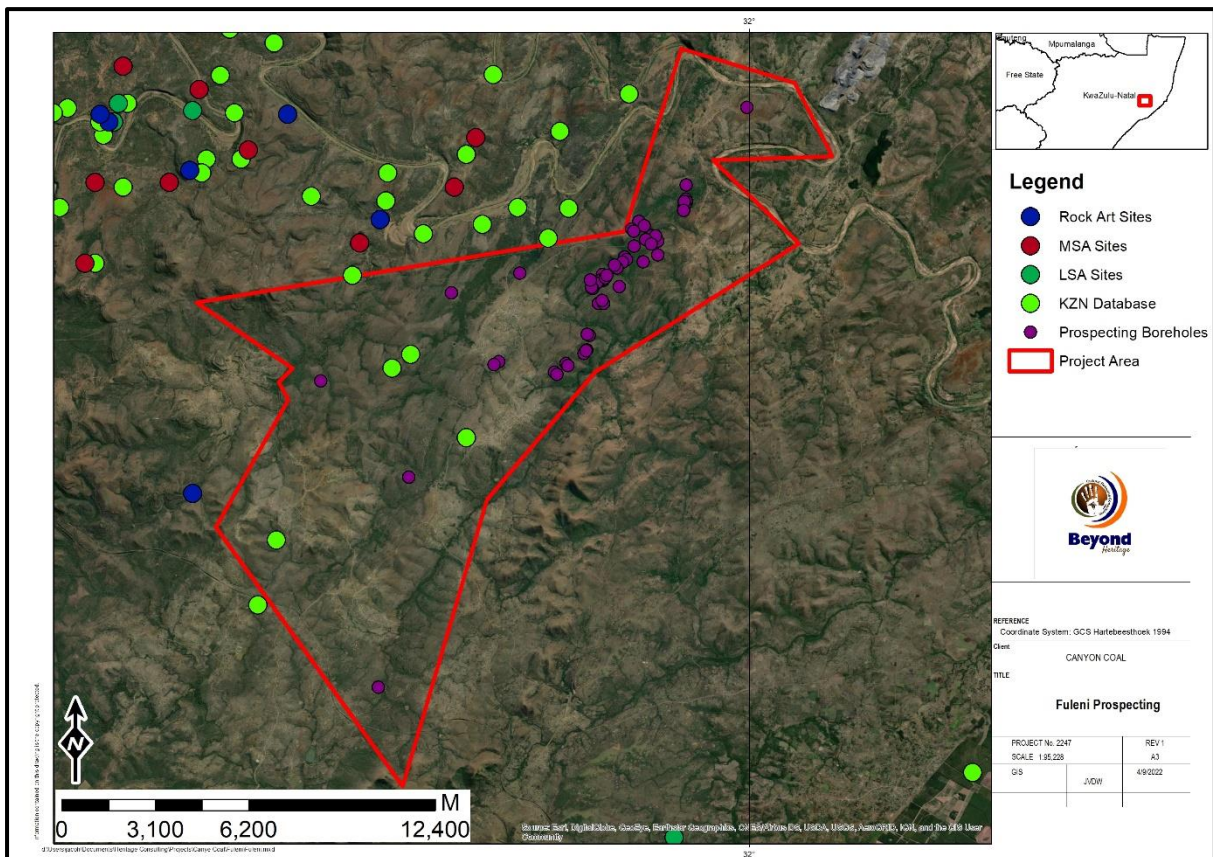


Figure 13. Drilling sites in relation to known sites.

## 8. Recommendation

This NID notes that the greater study area is rich in heritage resources and although the area of impact relating to drill sites has not been subjected to a HIA, similar resources can be expected in the drilling areas. Although the impact of the drill sites is small, without management action in place these activities could have a negative impact on non-renewable heritage resources.

Due to the size of the prospecting area, limited access, and the extended timeline of the prospecting plan it is not feasible to conduct an HIA. In order to mitigate against accidental damage and destruction of sites it is recommended that the following management actions should be included in the EMPR of the project as a condition of authorization.

- During Public Participation, stakeholders will be engaged where the local community indicate graves as well as places of social and spiritual significance;
- Each drill site must be physically inspected by the ECO for archaeological or burial sites prior to drilling;
- Existing roads must be used;
- A Chance find procedure should be implemented for the duration of the prospecting;
- A heritage management plan should be compiled that indicates buffer zones and management actions for known heritage sites and sites of social importance in the prospecting area.

The developer indicated that the following mitigation measures will be employed to minimize the potential impact on burial sites:

- All associated residential areas will have a buffer zone of 500m;
- Each drill site will be inspected, prior to drilling; and
- Drilling will include a maximum of 55 holes

With the implementation of the mitigation measures proposed in this report as a condition of authorisation in the EMPR it is recommended that the Project can commence without a full HIA subject to approval from AMAFA.

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