

CULTURAL HERITAGE IMPACT ASSESSMENT OF THE PROPOSED BORDER ROAD, INCLUDING 20 BORROW PITS, SWAZILAND.



For: Royal Haskoning DHV

ACTIVE HERITAGE cc.

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Frans received his MA (Archaeology) from the University of Stellenbosch and is presently a PhD candidate on social anthropology at Rhodes University. His PhD research topic deals with indigenous San perceptions and interactions with the rock art heritage of the Drakensberg.

Frans was employed as a junior research associate at the then University of Transkei, Botany Department in 1988-1990. Although attached to a Botany Department he conducted a palaeoecological study on the Iron Age of northern Transkei - this study formed the basis for his MA thesis in Archaeology. Frans left the University of Transkei to accept a junior lecturing position at the University of Stellenbosch in 1990. He taught mostly undergraduate courses on World Archaeology and research methodology during this period.

From 1991 – 2001 Frans was appointed as the head of the department of Historical Anthropology at the Natal Museum, Pietermaritzburg. His tasks included academic research and publication, display conceptualization, and curating the African ethnology collections of the Museum. He developed various displays at the Natal Museum on topics ranging from Zulu material culture, traditional healing, and indigenous classificatory systems. During this period Frans also developed a close association with the Departments of Fine Art, Psychology, and Cultural and Media Studies at the then University of Natal. He assisted many post-graduate students with projects relating to the cultural heritage of South Africa. He also taught post-graduate courses on qualitative research methodology to honours students at the Psychology Department, University of Natal. During this period he served on the editorial boards of the *South African Journal of Field Archaeology* and *Natalia*

Frans left the Natal Museum in 2001 when approached by a Swiss funding agency to assist an international NGO (Working Group for Indigenous Minorities) with the conceptualization of a San or Bushman museum near Cape Town. During this period he consulted extensively with various San groupings in South Africa, Namibia and Botswana. During this period he also made major research and conceptual contributions to the Kamberg and Didima Rock Art Centres in the Ukhahlamba Drakensberg World Heritage Site.

Between 2003 and 2007 Frans was employed as the Cultural Resource Specialist for the Maloti Drakensberg Transfrontier Project – a bilateral conservation project funded through the World Bank. This project involved the facilitation with various stakeholders in order to produce a cultural heritage conservation and development strategy for the adjacent parts of Lesotho and South Africa. Frans was the facilitator for numerous heritage surveys and assessments during this project. This vast area included more than 2000 heritage sites. Many of these sites had to be assessed and heritage management plans designed for them. He had a major input in the drafting of the new Cultural Resource Management Plan for the Ukhahlamba Drakensberg World Heritage site in 2007/2008. A highpoint of his career was the inclusion of Drakensberg San indigenous knowledge systems, with San collaboration, into the management plans of various rock art sites in this world heritage site. He also liaised with the tourism specialist with the drafting of a tourism business plan for the area.

During April 2008 Frans accepted employment at the environmental agency called Strategic Environmental Focus (SEF). His main task was to set-up and run the cultural heritage unit of this national company. During this period he also became an accredited heritage impact assessor and he is rated by both Amafa and the South African Heritage Resources Agency (SAHRA). He completed almost 50 heritage impact assessment reports nation-wide during an 18th month period.

Frans left SEF and started his own heritage consultancy called “Active Heritage cc” in July 2009. Although mostly active along the eastern seaboard his clients also include international companies such as Royal Dutch Shell through Golder Associates, and UNESCO. He has now completed almost 1000 heritage conservation and management reports for various clients since the inception of “Active Heritage cc”. Amongst these was a heritage study of the controversial fracking gas exploration of the Karoo Basin and various proposed mining developments in South Africa and proposed developments adjacent to various World Heritage sites. Apart from heritage impact assessments (HIA's) Frans also assist the National Heritage Council (NHC) through Haley Sharpe Southern Africa', with heritage site data capturing and analysis for the proposed National Liberation Route World Heritage Site and the national intangible heritage audit. In addition, he is has done background research and conceptualization of the proposed Dinosaur Interpretative Centre at Golden Gate National Park and the proposed Khoi and San Interpretive Centre at Camdeboo, Eastern Cape Province. During 2009 he also produced the first draft dossier for the nomination of the Sehlabathebe National Park, Lesotho as a UNESCO inscribed World Heritage Site.

Frans was appointed as temporary lecturer in the department of Heritage and Tourism, UKZN in 2011. He is also a research affiliate at the School of Cultural and Media Studies in the same institution.

Frans's research interests include African Iron Age, paleoecology, rock art research, San ethnography, traditional healers in South Africa, and heritage conservation. Frans has produced more than forty publications on these topics in both popular and academic publications. He is frequently approached by local and international video and film productions in order to assist with research and conceptualization for programmes on African heritage and culture. He has also acted as presenter and specialist for local and international film productions on the rock art of southern Africa. Frans has a wide experience in the fields of museum and interpretive centre display and made a significant contribution to the conceptual planning of displays at the Natal Museum, Golden Horse Casino, Didima Rock Art Centre and !Khwa tu San Heritage Centre. Frans is also the co-founder and active member of "African Antiqua" a small tour company who conducts archaeological and cultural tours world-wide. He is a Thetha accredited cultural tour guide and he has conducted more than 50 tours to heritage sites since 1992.

Declaration of Consultants independence

Frans Prins is an independent consultant to Royal Haskoning DHV and has no business, financial, personal or other interest in the activity, application or appeal in respect of which he was appointed other than fair remuneration for work performed in connection with the activity, application or appeal. There are no circumstances whatsoever that compromise the objectivity of this specialist performing such work.



Frans Prins

EXECUTIVE SUMMARY

Active Heritage cc has been appointed by Royal Haskoning DHV, to undertake a First Phase Heritage Impact Assessment of the proposed Swaziland, Mozambique, South-Africa Border Road. This study also includes the assessment of twenty Borrow Pits in the project area.

The main aim of this study is to provide a synopsis of the heritage resources in this portion of southern Africa. Thirty heritage sites (including grave-sites) have been located adjacent to the proposed Border Road. These include Stone Age, Iron Age and more recent grave-sites. One living heritage site occurs in the north eastern section of the project area. No cultural landscapes have been identified. Three heritage sites have been located in association with the identified Borrow Pits. All the heritage sites identified have been rated and relevant mitigation measures have been suggested. Attention is drawn to the South African Heritage Resources Act, 1999 (Act No. 25 of 1999) and the KwaZulu-Natal Heritage Act (Act No. 4 of 2008), which requires that operations that expose archaeological or historical remains as well as graves and fossil material should cease immediately, pending evaluation by the provincial heritage agency

ACRONYMS AND ABBREVIATIONS

EIA	Early Iron Age
ESA	Early Stone Age
HISTORIC PERIOD	Since the arrival of the white settlers - c. AD 1770 in this part of the country
IRON AGE	Early Iron Age AD 200 - AD 1000 Late Iron Age AD 1000 - AD 1830
IIA	Intermediate Iron Age
LIA	Late Iron Age
LSA	Late Stone Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act, 1998 (Act 107 of 1998) and associated regulations.
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999) and associated regulations (2000)
RA	Rock Art
SAHRA	South African Heritage Resources Agency
STONE AGE	Early Stone Age 2 000 000 - 250 000 BP Middle Stone Age 250 000 - 25 000 BP Late Stone Age 30 000 - until c. AD 200

DEFINITIONS OF TERMINOLOGY

Archaeology: Remains resulting from human activities that are in a state of disuse and are in or on land which are older than 60 years, including artefacts, human and hominid remains, and artificial structures and features.

Early Stone Age: the archaeology of the Stone Age between 700 000 and 2500 000 years ago.

Heritage: That which is inherited and forms part of the National Estate (Historical places, objects, fossils as defined by the National Heritage Resources Act of 25 of 1999).

Holocene: the most recent geological period that commenced approximately 10 000 years ago.

Late Stone Age: The archaeology of the last 20 000 – 30 000 years associated with fully modern people.

Middle Stone Age: The archaeology of the Stone Age between 20 000 and 300 000 years ago associated with early modern people.

Iron Age: The archaeology of the last 2000 years associated with Bantu-speaking agro-pastoralists.

National Estate: the collective heritage assets of the nation.

SAHRA: The South African Heritage Resources Agency – the compliance agency that protects national heritage.

Structure (historic): Any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith. Protected structures are those which are over 60 years old.

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1.0 BRIEF OVERVIEW OF THE PROPOSED PROJECT

This Report is prepared within the framework of the Scope of Work as set out in the Tender Document.

The objective of this report is to provide a study of the heritage resources that occurs along the proposed Border Patrol Road between Swaziland, Mozambique and the Republic of South Africa. This area covers a distance of 520km and includes relevant access roads and borrow pits (Figs 1, 2 & 3). The contextual information relating to the 20 Borrow Pits in the project area is given in Table 1.

Table 1: Context of Borrow Pits in the Project Area

Original Borrow Name	Pit	Orig. Borrow Pit Co-ordinate		Alt / Borrow Name	New Pit	New Borrow Pit Co-ordinate		Likely Borrow Material	Relocation Description
		Lat	Long			Lat	Long		
NBP3 Potassic Granite)	Pr2 (26°31'5.49"S	30°46'34.40"E	New NBP3 Potassic Granite)		26°31'1.19"S	30°46'44.19"E	Weathered Granite	~300m east north east of orig co-ord
EBP14 Potential Borrow	Pr2	26°28'1.45"S	30°48'10.28"E	No Change				Weathered Granite	
EBP15	Pr2	26°25'57.31"S	30°48'13.20"E	New EBP15	Pr2	26°25'43.30"S	30°47'33.32"E	Weathered Granite	Relocate ~1.2km north west along access road away from river as requested
NBP5 (Potassic Granite)	Pr2	26°23'44.56"S	30°48'53.68"E	NBP5 (existing granite borrow)	Alt	26°23'1.07"S	30°48'1.52"E	Weathered Granite	Orig site very remote, relocate ~2km north west of orig site along prominent access road
Potential Borrow (CH380.200)		26°14'36.92"S	30°58'10.91"E	No Change				Weathered Granite	Area in general should be assessed
Potential Borrow (CH385.000)		26°12'0.10"S	30°59'0.96"E	New Potential Borrow (CH 385000)		26°12'9.58"S	30°59'16.22"E	Weathered Granite	Relocated some 500m south east although general area should be assessed
Potential Borrow (CH389.350)		26°10'0.19"S	31° 0'17.13"E	No Change				Weathered granite	Area in general should be assessed

Original Borrow Name	Pit	Orig. Borrow Pit Co-ordinate		Alt / Borrow Name	New Pit	New Borrow Pit Co-ordinate		Likely Borrow Material	Relocation Description
		Lat	Long			Lat	Long		
Potential Borrow (CH451.600)		25°43'46.11"S	31°21'29.97"E	No Change					Area in general should be assessed
Potential Borrow (CH456.500)		25°42'59.64"S	31°24'21.28"E	No Change					Area in general should be assessed
NPB 10 Pr1		25°45'3.44"S	31°28'51.41"E	NPB 10 Pr1 Alt (existing granite BP)		25°44'58.15"S	31°28'22.66"E	Weathered Granite	
NPB 26 Pr1		25°47'10.52"S	31°32'32.25"E	NPB 26 Pr1 Alt 1 (existing granite BP)		25°45'50.37"S	31°33'53.51"E	Weathered Granite	Orig. site still feasible however very remote, new site located ~3.3km to north east along main access road
				NPB 26 Pr1 Alt 2 (existing granite BP)		25°46'34.23"S	31°34'36.95"E	Weathered Granite	Orig. site still feasible however very remote, new site located ~3.6km to east along main access road
				NPB 26 Pr1 Alt 3 (existing granite BP)		25°47'14.73"S	31°37'53.21"E	Weathered Granite	Orig. site still feasible however very remote, new site located along main access road
NPB 25 Pr1		25°53'16.92"S	31°42'6.72"E	NPB 25 Pr1 Alt		25°52'36.13"S	31°45'29.46"E	Weathered Granite	Relocated ~5.8km east of orig position
Not originally identified				Potential New Borrow (CH508.000)		25°58'8.37"S	31°50'24.80"E	Weathered Basalt	Located on southern outskirts of Mananga town
NPB 7 Pr1		25°58'12.48"S	31°54'49.82"E	NPB7 Pr1 Alt 1		25°57'22.78"S	31°54'46.65"E	Weathered Ryolite	Relocated 1.5km north north east of original position, area in general should be assessed as ryolite is highly variable and may need to be

Original Borrow Name	Pit	Orig. Borrow Pit Co-ordinate		Alt Borrow Name	/	New Pit	New Borrow Pit Co-ordinate		Likely Borrow Material	Relocation Description
		Lat	Long				Lat	Long		
										repositioned slightly after detailed assessment
				NPB7 Pr1 Alt 2			25°57'47.45"S	31°53'6.05"E	Weathered basalt	Relocated 3km north west of original position on lower lying area likely underlain by basalt
Not originally identified				EBP (CH523.150)			25°57'25.19"S	31°57'52.63"E	Weathered ryolite	Assess area in general due to variability of ryolite material

On the South African side of the border, the study area covers the following provincial and local government administrative areas (Fig 3)

Kwazulu-Natal Province

- Umkhanyakude District Municipality
- Umhlabyalingana Local Municipality
- Jozini Local Municipality
- Zululand District Municipality
- uPhongolo Local Municipality

Mpumalanga Province

- Gert Sibande District Municipality
- Mkhondo Local Municipality
- Msugligwa Local Municipality
- Albert Luthuli Local Municipality
- Ehlazeni District Municipality
- Umjindi Local Municipality

The current land use of the area includes (Fig 2a):

- Tribal or communal land with small-scale subsistence farming
- Small towns or settlements – usually in the immediate environs of Border Posts
- Commercial forest plantations
- Commercial farms
- Protected areas and nature reserves

The newly declared Barberton-Mkhonjwa Mountains National Heritage Site and UNESCO inscribed World Heritage Site occurs on the extreme north western border of Swaziland with South Africa. As such it borders onto the proposed Border Patrol Road (Fig 2 b). This World Heritage Site was declared in September 2018 and comprises 40% of the Barberton Greenstone Belt. The Barberton Makhonjwa Mountains represents the best-preserved succession of volcanic and sedimentary rock dating back 3.6 to 3.25 billion years, when the first continents were starting to form on the primitive Earth. It features meteor-impact fallback breccias resulting from the impact of meteorites formed just after the Great Bombardment (4.6 to 3.8 billion years ago), which are particularly well preserved. Although the Mkhonjwa Mountains stretch into Swaziland as well the declared World Heritage Site only includes the section of the mountains located in South Africa.

2.0 OBJECTIVES AND AIMS OF THIS STUDY

This HIA is required as an exercise to identify heritage resources which may be impacted during the construction, operation, and decommissioning phases of the proposed project. The conclusions reached are based on a desktop survey followed by a ground survey of the actual project area. The project seeks to assess the value and significance of the known heritage resources found within the study area as well as ensure their protection and conservation. The view is promoted that development should take place in harmony with the sustainable use of heritage resources.

2.1. Legislation

This review is undertaken in terms of the National Heritage Resources Act 1999 (Act No. 25 of 1999) (NHRA) which prescribes the manner in which heritage resources are assessed and managed. Section 3 (2) of this act defines South Africa's heritage resources to include:

- “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 natural features of cultural significance;*
- e. geological sites of scientific or cultural importance;*
- f. archaeological and palaeontological sites;*
- g. graves and burial grounds, including-*
 - i. ancestral graves;*
 - ii. royal graves and graves of traditional leaders;*
 - iii. graves of victims of conflict;*
 - iv. graves of individuals designated by the Minister by notice in the Gazette;*
 - v. historical graves and cemeteries; and*
 - vi. other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);*
- h. sites of significance relating to the history of slavery in South Africa;*
- i. movable objects, including-*
 - i. objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;*
 - ii. objects to which oral traditions are attached or which are associated with living heritage;*
 - iii. ethnographic art and objects;*
 - iv. military objects;*
 - v. objects of decorative or fine art;*
 - vi. objects of scientific or technological interest; and*
 - vii. books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).”*

The National Heritage Resources Act, (Act No. 25 1999) also stipulates in Section 3 (3) that a place or object is to be considered part of the national estate if it has cultural significance or other special value because of:

- “a. its importance in the community, or pattern of South Africa's history;*
- b. its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;*
- c. its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;*
- d. its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;*
- e. its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;*
- f. its importance in demonstrating a high degree of creative or technical achievement at a particular period;*
- g. its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;*
- h. its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and*
- i. sites of significance relating to the history of slavery in South Africa.”*

The National Heritage Resources Act also protects intangible heritage such as traditional activities, oral histories and places where significant events happened.

Most developers think that heritage impact assessment (HIA) applies only to graves, but according to the NHRA roads, power lines, cables, or pipelines, require prior HIA's. The need for an HIA may also arise during development, if historic, prehistoric or paleontological scientific resources, like structures or fossils, are discovered, as part of an environmental impact assessment (EIA).

3.0 STUDY APPROACH / METHODOLOGY

3.0.1 Background and terms of reference

Taking into consideration the extent of the study area, a desktop heritage study has been undertaken by an Amafa and SAHRA accredited heritage consultant as a Phase One Heritage Impact Assessment (Prins 2016). The desktop study was followed by a ground survey of the project area.

The specific terms of reference for the heritage assessment are as follows:

- Identify, map and describe heritage resources (including archaeology, palaeontology and cultural heritage) in the exploration right area, based on available literature, existing databases and any fine scale plans for the region;
- Determine the sensitivity and conservation significance of any sites of archaeological, palaeontology or cultural heritage significance affected by the proposed project;
- Develop a sensitivity plan (low, medium and high significance) based on the findings of the desktop review and describe any potential heritage constraints relating to identified sensitive areas;
- Determine the need to undertake initial archaeological surveys (i.e. fieldwork) of specific and selected sites to confirm sensitivity plan;
- Determine exclusion criteria that should be applied when identifying and assessing sites for physical exploration during the detailed site assessment;
- Identify other practicable mitigation measures to reduce any potential negative impacts and indicate how these could be implemented and managed during exploration; and
- Provide guidance for the requirement of any heritage permits or licences.

This heritage assessment is based on a desktop study followed by a ground survey.

3.1 Desktop

3.1.1 Literature Survey

A survey of the literature pertinent to the region, including archaeological, anthropological, historical and paleontological sources was conducted to assess the potential of heritage resources within the area. Past heritage impact assessment survey reports conducted within the general project provided useful data as well. Unfortunately these only covered a few selected parts of the project area , especially in the southern and eastern parts of the project area, and many gaps remain.

3.1.2 Databases

The SAHRA web portal for gazetted sites, objects and shipwrecks was consulted. The Heritage Register List of SAHRA was also used to shed light about heritage resources present in the area. The archaeological databases of the KwaZulu-Natal Museum provided the most information relating to archaeological resources in the study area. The SARADA database of rock art in Africa was consulted as some rock art sites also occur close to the study area. The Amafa database for

historical sites, cemeteries, and battle-sites was also consulted. This data base includes those held by provincial museums and other institutions in the country. Whereas official cemeteries are well recorded the same cannot be said for individual graves and graveyards located in rural and tribal areas.

3.2 Ground Survey

Ground surveys following standard and accepted archaeological methods was conducted on the 20-23 September 2017 and on the 17-20 October 2017. A buffer of 50m was surveyed around the relevant roads and borrow pits. Particular attention was paid to potential 'hotspot areas' identified in the desktop study that preceded the ground survey. The footprint was walked by foot. Particular care was taken to identify graves and associated structures. Local community members, when present, was also questioned regarding the location of potential graves and other heritage sites.

3.3 Restrictions and assumptions

- The available databases are incomplete. Large areas of the study area have never been surveyed from a heritage perspective. These include the northern and western section of the project area. The GPS coordinates are not available for all the listed sites.
- Given the abundance of archaeological sites within 10km from the northern and western sections of the study area, it can be expected that such will also occur within the near vicinity of the proposed Border Road.
- The existing data bases are biased in terms of prehistoric archaeological sites. Historical period sites and cemeteries have not been recorded and do not appear on any existing data base. Sites belonging to African on African conflict as well as 'living heritage sites' needs to be researched and added to available data bases.
- The project area has never been systematically surveyed for other categories of cultural heritage. It is expected that such systematic surveys will produce more sites especially in the categories of struggle-era and 'living heritage' sites.
- Large sections of the project are is flanked by mountains and hilly terrain that may yield shelters with rock art and Stone Age deposits. However, the survey was limited to distances of no more than 50 m beyond existing roads and borrow pits. Given this survey methodology promising areas that may have contained rock art and later Stone Age sites were not covered.

4.0 STUDY RESULTS / BASELINE DESCRIPTION OF THE STUDY AREA

4.1 Ground Survey

4.1.1. Pre-colonial Archaeology

Archaeological sites occur throughout the project area along the border with Swaziland. The majority of these occur adjacent to the southern, eastern and northern section of the proposed Border Road. These include five Early Stone Age, eight Middle Stone Age, five Later Stone Age, two Later Iron Age, one Rock Art, and four Later Iron Age/historical period sites (Table 2) the locality and distribution of these heritage sites are indicated in Table 2 and Figs 4 - 8. These have all been afforded a medium to high heritage rating. The highest heritage rating for all these sites in the study area is National and applies to the newly declared Barberton Mkhonjwa Mountains National Heritage Site and UNESCO inscribed World Heritage Site (Table 4). This National and World Heritage Site has been given global significance based on the unique geological features and age of the Mountains. The Border Cave, a globally significant archaeological site, is located near the meeting point of all three international borders in the eastern section of the study area (Table 5) (Figs 9 & 10) it has been given provincial heritage rating by the provincial heritage agency in KwaZulu-Natal. The remainder have grading listings of between Grade 11 and Grade 111. All these sites are therefore protected by heritage legislation and mitigation is necessary before any alteration may be considered by the relevant provincial heritage agency.

The desktop study indicated that many areas within the project area have never been systematically surveyed for any heritage sites. These include the far western and northern sections of the study area that borders onto Mpumalanga. However, given the extraordinary rich heritage of the Mpumalanga Province (Delius 2007; Kros 2007) and the fact that significant Rock Art (Smith & Zubita 2007) and Later Iron Age sites are known to occur within 15 km or so from the proposed Border Road (Delius 2007; Huffman 2007) it was expected that these categories of sites may also be found in the near environs of the footprint. However, the ground survey did not locate any Iron Age and Rock Art sites in the northern and western sections of the project area. These areas did, however, produce open air Stone Age occurrences.

4.1.2. Historical period: archaeology and built environment

No historical period sites relating to the period of European settlement are reflected on any of the existing data bases as occurring closer than 50m to the footprint (Fig 15). However, it is highly unlikely that no historical period sites occur in the near environs of the proposed Border Road. The various Border Posts along the road has been operating as entrances to and from Swaziland and Mozambique for many decades. It is highly likely that some of the earlier buildings and structures associated with these Border Posts are older than 60 years and they will therefore have heritage value (Fig 16). In addition, the historical towns of Barberton and Pilgrims Rest are situated relatively close to western and northern border of Swaziland (Van Wyk-Rowe 1997). It was expected that some of the historical mining and transport riding activities associated with the colonial history of these towns also extended towards Swaziland near the proposed Border Road. However, the ground survey did not locate any historical buildings or structures within 50m from the proposed Border Road and associated Borrow Pits. Indigenous African homesteads that appears to belong to the historical period do, however, occur in the deep southern and eastern sections of the project area (Figs 1-7).

4.1.3. Graves

No graves or cemeteries are indicated on existing data bases. However, large sections of the proposed Border Road pass through communal or tribal areas. It is expected that some of the existing homesteads of these areas do contain associated grave sites. Nine grave sites have been located in the immediate environs of the proposed Border Road (Table 2). These include two cemeteries and three graveyards. Although the cemeteries contain modern graves (i.e. younger than 60 years old) it also had older graves that are protected by National Heritage legislation.

Table 2: List of grave sites identified in the project area.

Site Name	Site Type	Grading	Longitude	Latitude	Mitigation
Grave Site 1	Unmarked graves. Appears to be older than 60 years (Fig 6). Situated approximately 400m from Border Road	Grade 111C	S 25 57' 18.96"	E 31 50' 40.52"	Maintain a buffer zone of at least 10m around this site.
Grave Site 2	Modern graveyard with marked graves. Some are older than 60 years (Fig 8).	Grade 111C	S 25 57' 18.96"	E 31 50' 40.52"	Maintain a buffer zone of at least

Site Name	Site Type	Grading	Longitude	Latitude	Mitigation
	Situated approximately 360m from the proposed Border Road.				30m around this site
Grave Site 3	Modern rural cemetery with marked graves. Some are older than 60 years. Situated approximately 410m from proposed Border Road (Figs 9 & 23).	Grade 111C	S 25 52' 23.04"	E 31 41' 47.63"	Maintain a buffer zone of at least 30m around this site
Grave Site 4	Unmarked graves. Appear to be older than 60 years. Situated approximately 290m from proposed Border Road (Fig 11).	Grade 111C	S 26 9' 48.13"	E 31 0' 14.30"	Maintain a buffer zone of at least 10m around this site.
Grave Site 5	Unmarked grave indicated by stone heap. Appears to be older than 60 years. This grave is situated approximately 100m from Borrow Pit 10 and 200m from the proposed Border Road (Fig 11).	Grade 111C	S 26 11' 37.52"	E 30 58' 35.44"	Maintain a buffer zone of at least 10m around this site
Grave Site 6	Unmarked grave indicated by stone heap. Appears to be younger than 60 years (Fig 12). Situated approximately 420m from Border Road	Grade 11C	S 26 25' 42.65"	E 30 47' 34.46"	Maintain a buffer of at least 30m around this site
Grave Site 7	Marked singular grave. Indicated by headstone with marking. Younger than 60 years old. Situated approximately 680m from proposed Border Road (Fig 13)	Grade 11C	S 26 52' 58.54"	E 30 55' 48.91"	Maintain a buffer of 10m around this grave.
Grave Site 8	Family Cemetery (Du Pisanie family). Old and new graves – well marked with headstones. Situated approximately 590m from proposed Border Road (Figs 13 & 24).	Grade 111C	S 26 52' 58.54"	E 30 55' 48.91"	Maintain a buffer of 30m around this cemetery.
Grave Site 9.	Family graveyard. Old and new graves with clearly marked headstones. Situated approximately 700m from proposed Border Road (Fig 13).	Grade 111C	S 26 53' 40.41"	E 30 56' 54.72"	Maintain a buffer of 30m around this graveyard.

Table 3: List of archaeological sites in the project area.

	Site Name	Distance from Border Road	Site Type	Grading	Longitude	Latitude	Mitigation
1	MSA & RA (Shelter)(Fig 6)	1601m	Prehistoric	Grade 111A	S 26° 52' ' 27.72"	E 32° 11' 34.43"	Maintain a buffer zone of at least 50m around this site.
2	MSA (open air site)(Fig 6)	900m	Prehistoric	Grade 11A	S 26° 50' 57.71"	E 32° 8' 4.94"	Maintain a buffer zone of at least 10m around this site
3	ESA, MSA, LSA, RA (Border Cave) (Cave Site)(Figs 6 & 18)	1400m	Prehistoric	Provincial	S 26° 48' 1.08"	E 32° 0' 12.24"	Maintain a buffer zone of at least 50m around this site
4	MSA (open air site) (Fig 6)	771m	Prehistoric	Grade 111A	S 27° 1' 13.66"	E 31° 59' 35.51"	Maintain a buffer zone of at least 10m around this site.
5	MSA (open air site) (Fig 6)	300m	Prehistoric	Grade 11A	S 27° 8' 27.40"	E 31° 59' 11.29"	Maintain a buffer zone of at least 10m around this site
6	LSA (open air) (Fig 6)	1000m	Prehistoric	Grade 111A	S 27° 8' 27.40"	E 31° 58' 39.99"	Maintain a buffer of at least 30m around this site)
7	LSA (open air) (Fig 6)	767m	Prehistoric	Grade 111A	S 27 17' 53.33"	E 31 58' 51.06"	Maintain a buffer of at least 10m around this site.
9	MSA, HIS (open air and stone	2000m	Prehistoric and	Grade 111A	S 27 40' 28.30"	E 31 21' 45.90"	Maintain a buffer zone of at least

	Site Name	Distance from Border Road	Site Type	Grading	Longitude	Latitude	Mitigation
	structures) (Fig 6)		indigenous historical				30m around this site.
10	LIA, HIS (stone-walled structures) and open air (Figs 7 & 22)	1900m	Prehistoric and indigenous historical	Grade 111A	S 27 17' 16.06"	E 31 21' 2.08"	Maintain a buffer zone of at least 30m around this site.
11	LIA, HIS (stone-walled structures) and open air (Fig 7)	1500m	Prehistoric and indigenous historical	Grade 11A	S 27 16' 55.60"	E 31 21' 0.26"	Maintain a buffer zone of at least 30m around this site.
12	HIS (Fig 7).	2800m	Indigenous Historical	Grade 11A	S 27 15' 42.43"	E 31 15' 28.36"	Maintain a buffer zone of at least 30m around this site.
13	LSA (open air). Few stone flakes situated approximately 15m from Borrow Pit 4 (Fig 8)	500m	Prehistoric	Grade 11A	S 25 58' 8.79"	E 31 50' 25.28"	Maintain a buffer of at least 10m around this site. Should this not be possible then the developers can motivate for a phase two HIA with an option of making a surface collection of the artefacts prior to development.
14	ESA (open air) (Figs 8 & 19)	4300m	Prehistoric	Grade 11A	S 25 56' 16.73"	E 31 48' 44.24"	Maintain a buffer zone of 10m around this site

	Site Name	Distance from Border Road	Site Type	Grading	Longitude	Latitude	Mitigation
15	LSA (open air) (Figs 8 & 21)	2100m	Prehistoric	Grade 11A	S 25 55' 58.49"	E 31 48' 20.97"	Maintain a buffer zone of 10m around this site
16	MSA (open air) (Fig 8s & 20)	1900m	Prehistoric	Grade 11A	S 25 56' 23.53"	E 31 48' 9.75"	Maintain a buffer zone of 10m around this site
17	ESA (open air) (Fig 8)	3700m	Prehistoric	Grade 11A	S 25 54' 54.25"	E 31 47' 40.80"	Maintain a buffer zone of 10m around this site
18	LSA (open air). Few stone flakes on surface situated approximately 12m from the Borrow Pit 5 (Fig 9).	4100m	Prehistoric	Grade 11A	S 25 52' 36.80"	E 31 45' 31.29"	Maintain a buffer zone of 10m around this site. Should this not be possible then the developers can motivate for a phase two HIA with an option of making a surface collection of the artefacts prior to development.
19	MSA (open air) (Fig 9).	1950m	Prehistoric	Grade 11A	S 25 52' 35.81"	E 31 45' 29.18"	Maintain a buffer zone of 10m around this site
20	MSA (open air) (Fig 9)	4000m	Prehistoric	Grade 11A	S 25 49' 56.32"	E 31 41' 7.29"	Maintain a buffer zone of 10m around this site
21	ESA (open air) (Fig 10)	6050m (situated within the Barberton Mkhonjwa	Prehistoric	Grade 11A	S 25 45' 10.20"	E 31 15' 53.15"	Maintain a buffer zone of 10m around this site

	Site Name	Distance from Border Road	Site Type	Grading	Longitude	Latitude	Mitigation
		Mountains World Heritage Site)					
22	ESA (open air) (Fig 10)	7050m (situated within the Barberton Mkhonjwa Mountains World Heritage Site)	Prehistoric	Grade 11A	S 25 47' 10.23"	E 31 12' 16.75"	Maintain a buffer zone of 10m around this site

4.1.3. Cultural landscapes and sense of place

The cultural landscape is an aspect of heritage not defined in the NHRA but nevertheless listed as part of the National Estate. A cultural landscape is “a set of ideas and practices embedded in a place” (Julian Smith and Associates Contentworks Inc., 2004) and serves to “map our relationship with the land over time” (The Cultural Landscape Foundation, 2015). While the cultural landscape is itself a heritage resource, it also unites the physical cultural resources of an area (tangible heritage) and its associated memories, perceptions, stories, practices and experiences (living heritage) in order to give a particular place or region its meaning. Because heritage sites are embedded in, and interwoven with, their landscape settings, the cultural landscape also gives these resources their sense of place and belonging through the provision of physical and metaphysical context (Müller & Gibbs, 2011). The concept of cultural landscape is thus very broad. Like the warp threads of a tapestry, the cultural landscape is the setting which holds together all the other aspects of heritage discussed in this chapter (Orton et al 2016). However, despite initial expectations the consultant could not find evidence for any known cultural landscapes along the proposed Border Road. It can be argued that the areas around exiting Border Patrol Stations could be classified as cultural landscapes, however, the existing evidence is not convincing. It is nevertheless proposed that the

developers initiate a Phase Two Heritage Impact Assessment, by a built heritage specialist, before any development takes place in the immediate environs of existing Border Post Stations.

4.1.4 Living Heritage

Living (or intangible) heritage encompasses all those ideas, traditions, customs and memories that are passed from generation to generation. It includes things such as language, folklore, traditional medicine and healing, music, songs, dances and recipes. Skills and practices related to the local economy, such as shepherding, animal husbandry and transhumance between summer and winter grazing areas, are also important because without them early African and colonial settlers and even modern day small-scale subsistence farmers would never have survived. These are all things that contribute to the identity of a group (Orton et al 2016). The Department of Arts and Culture (2009:5) defines living heritage as “cultural expressions and practices that form a body of knowledge and provide for continuity, dynamism, and meaning of social life to generations of people as individuals, social groups, and communities.” Part of the importance of living heritage is that it helps to create a new national identity and promotes heritage that was repressed by missionaries, colonists and the apartheid regime (Department of Arts and Culture, 2009).

The living heritage of the project area has not been researched and is not represented in any data base. However, it was felt that systematic ethnographic surveys of the project area may produce natural and man-made features with living heritage values. One natural site, i.e. Lake KuZilonde, is used for the harvesting of indigenous rushes and reeds by the local community (Table 4) and it therefore also has ‘living heritage’ values. In addition, it is important to refer to indigenous perceptions relating to the ‘symbolic water complex’. This complex of beliefs occur amongst all indigenous groups (African and Khoisan descendants) along the eastern seaboard and further afield (Bernard 2010). It has also been documented amongst Zulu, Swazi, and Thonga groups (ibid) and is therefore relevant to the project area. It is also almost certain that some of the prominent mountains and other natural features in the greater project area may have ‘living heritage’ values. A pool near Border Cave, a prominent archaeological site near the proposed border road, is said to be the abode of a mythical water serpent but this needs to be corroborated with more evidence.

Table 4: Living Heritage Site

Site Name	Site No	Site Type	Grading	Longitude	Latitude	Mitigation
Lake KuZilonde (Figs 6b, 25 & 26)	8	Large inland lake covering an area of approximately 1.7km x 0.6km. The proposed border road crosses the lake as the northern portion of the lake is situated in Mozambique. The lake has living heritage values. No fish traps were observed by consultants working in the area. However, the local community harvest reeds and rushes (iNcema) from the margins of the Lake. These socio-economic aspects of the Lake can also translate into living heritage values	Grade 111C	S 26 52' 03.17"	E 32 52' 10.65"	Engage with local community (as a phase 2 HIA) before the construction of a road that will cross this Lake.

Table 5: Field rating and recommended grading of sites (SAHRA 2005)

Level	Details	Action
National (Grade I)	The site is considered to be of National Significance	Nominated to be declared by SAHRA
Provincial (Grade II)	This site is considered to be of Provincial significance	Nominated to be declared by Provincial Heritage Authority
Local Grade IIIA	This site is considered to be of HIGH significance locally	The site should be retained as a heritage site
Local Grade IIIB	This site is considered to be of HIGH significance locally	The site should be mitigated, and part retained as a heritage site
Generally Protected A	High to medium significance	Mitigation necessary before destruction

Level	Details	Action
Generally Protected B	Medium significance	The site needs to be recorded before destruction
Generally Protected C	Low significance	No further recording is required before destruction

Table 6: Evaluation and statement of significance of heritage sites or features on the footprint.

Significance criteria in terms of Section 3(3) of the NHRA		
	Significance	Rating
1.	Historic and political significance - The importance of the cultural heritage in the community or pattern of South Africa's history.	Low to medium (Stone Age Sites)
2.	Scientific significance – Possession of uncommon, rare or endangered aspects of South Africa's cultural heritage.	High, for one site only namely Border Cave – a provincial heritage site.
3.	Research/scientific significance – Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage.	Yes, for The Barberton Mkhonjwa Mountains World Heritage Site in Mpumalanga Province and Border Cave – a provincial heritage site located in KwaZulu-Natal
4.	Scientific significance – Importance in demonstrating the principal characteristics of a particular class of South Africa's cultural places/objects.	Low to medium (Stone Age and Iron Age sites)
5.	Aesthetic significance – Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.	None.
6.	Scientific significance – Importance in demonstrating a high degree of creative or technical achievement at a particular period.	High, for one site only namely Border Cave – a provincial heritage site
7.	Social significance – Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.	The grave sites are all of local significance to the local communities in the project area.
8.	Historic significance – Strong or special association with the life and work of a person, group or	None. However, a Second Phase HIA by a built heritage specialist, in the immediate vicinity of the

	organization of importance in the history of South Africa.	Border Posts may give a higher rating to these locales.
9.	The significance of the site relating to the history of slavery in South Africa.	None.

5. Site selection criteria to consider in the detailed impact assessment

The following areas may contain heritage sites and should be avoided where possible:

- Sandstone outcrops and ridges may contain shelters with archaeological material including rock art. However, the consultant could not identify any sites within 50m from the proposed Border Road and associated Borrow Pits.
- Some sandstone shelters may also be 'living heritage' sites associated with puberty ceremonies and/or traditional healing. Again, the consultant could not find any sites within 50m from the proposed Border Road and associated Borrow Pits.
- Bodies of natural and unpolluted water such as certain pools, waterfalls and rivers/streams may also have 'living heritage' values associated with the indigenous "symbolic water complex". Again the consultant could not identify any such sites within 50m from the proposed Border Road and associated Borrow Pits. However, natural bodies of water used for the harvesting of indigenous reeds and rushes will also have 'living heritage values'. Lake Kuzilonde therefore also qualifies as a 'living heritage' site.
- Later Iron Age and historical period stone walled structures may be situated in the near vicinity of rocky outcrops and boulders. These would have provided the source material for building settlements (stone walling) in the past. No such structures, however, occur closer than 50m from the proposed Border Post Road and associated Borrow Pits.
- Old farmsteads, older than 60 years and hence of heritage significance, may occur on the remnants of previous farms in the area. We may anticipate that these may consist of farmhouses, sheds, outbuildings, kraals and other structures. No such structures occur within 50m from the proposed Border Road and associated Borrow Pits.
- Older buildings and structures such as bridges etc. do occur in association with some of the Border Posts in the project area. Those older than 60 years old are protected by heritage

legislation. However, none of these older structures occur closer than 50m to the proposed Border Road and associated Borrow Pits.

- Graves belonging to indigenous communities as well as European settlers do occur in the project area. These are typically indicated by stone heaps or formal and informal grave stones. A buffer zone of at least 30m must be maintained around all graves. No development may occur within the buffer zone. Should it not be possible to respect a buffer zone then the developer may motivate for a Phase Two Heritage Impact Assessment in order to investigate potential grave exhumation and reburial (Appendix 1).
- Various open-air Stone Age sites occur along the proposed Border Road. Most of these have a low to medium rating as they are situated 'out of context' with little research value. However, mitigation is necessary and a buffer zone of at least 10m must be maintained around them. No artefacts may be collected or removed from these sites.

Only three of the Borrow Pits had any heritage site associated with them. These are Borrow Pit 4, 5 and 10 (Tables 2 & 3).

6. Concluding Discussion

Active Heritage cc undertook a ground survey of the project area to identify heritage resources in the area and to characterise the type of heritage which may be identified and/or impacted during the proposed road upgrade and construction of the area. However, it is possible to indicate broad patterns that may assist the proposed development in avoiding heritage sites and the potential damage thereof. Early Stone Age, Middle Stone Age, Later Stone Age, Rock Art, historical sites as well as graves occur in the project area.

The known heritage sites in the project area have been rated as between Grade 1 and Grade 111 (Table 4). The newly declared Barberton Mkhonjwa Mountains National Heritage Site and World Heritage Site has a Grading of 1. However, it is also a UNESCO inscribed World Heritage Site. Although it borders onto the proposed Border Road no cultural heritage sites within this protected area is threatened by the proposed development. One heritage site, the internationally known Border Cave, has a Provincial heritage rating (ibid) and it has also been considered for UNESCO World Heritage Site nomination (Table 5). None of these sites may therefore be altered without mitigation under the auspices of the relevant provincial heritage agency. Border Cave may not be changed or

altered under any circumstances and a buffer zone of 50m must be maintained around this important site. A buffer zone of 50m must also be maintained around the one identified rock art site. All the other sites should have a buffer zone of at least 10m. Should it not be possible to maintain these buffer zones then the developer may motivate for a Phase Two Heritage Impact Assessment of the relevant sites. This second phase heritage impact assessment may involve a rescue excavation or the collection of the surface artefacts under the auspices of the relevant provincial heritage agency. 'Living Heritage' values are associated with Lake Kuzilonde. Liaison with the local community will be required as part of a Phase 2 Heritage Impact Assessment before the proposed border road may transgress this natural feature.

A second phase heritage assessment will be necessary in order to initiate a grave exhumation and reburial process – where necessary. This process will also include the application of a permit from the relevant Provincial Heritage Agency and extensive community consultations (Appendix 1).

Attention is drawn to the South African Heritage Resources Act, 1999 (Act No. 25 of 1999) and the KwaZulu-Natal Heritage Act (Act No. 4 of 2008), which requires that operations that expose archaeological or historical remains as well as graves and fossil material should cease immediately, pending evaluation by the provincial heritage agency.

5.0 MAPS AND FIGURES

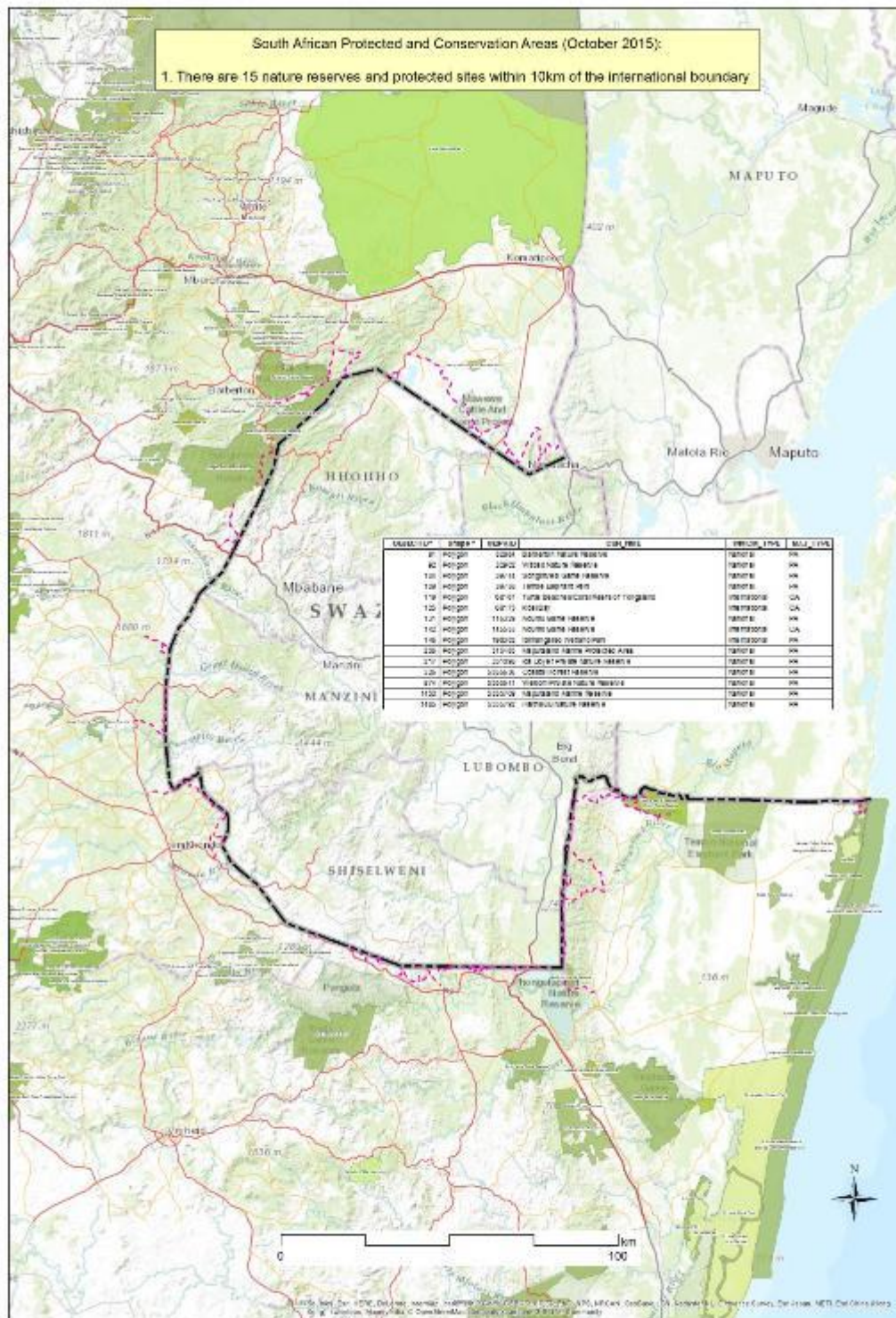


Figure 1a: Map showing the location of the proposed Border Road between South Africa, Swaziland and Mozambique. Protected areas are indicated in dark green.

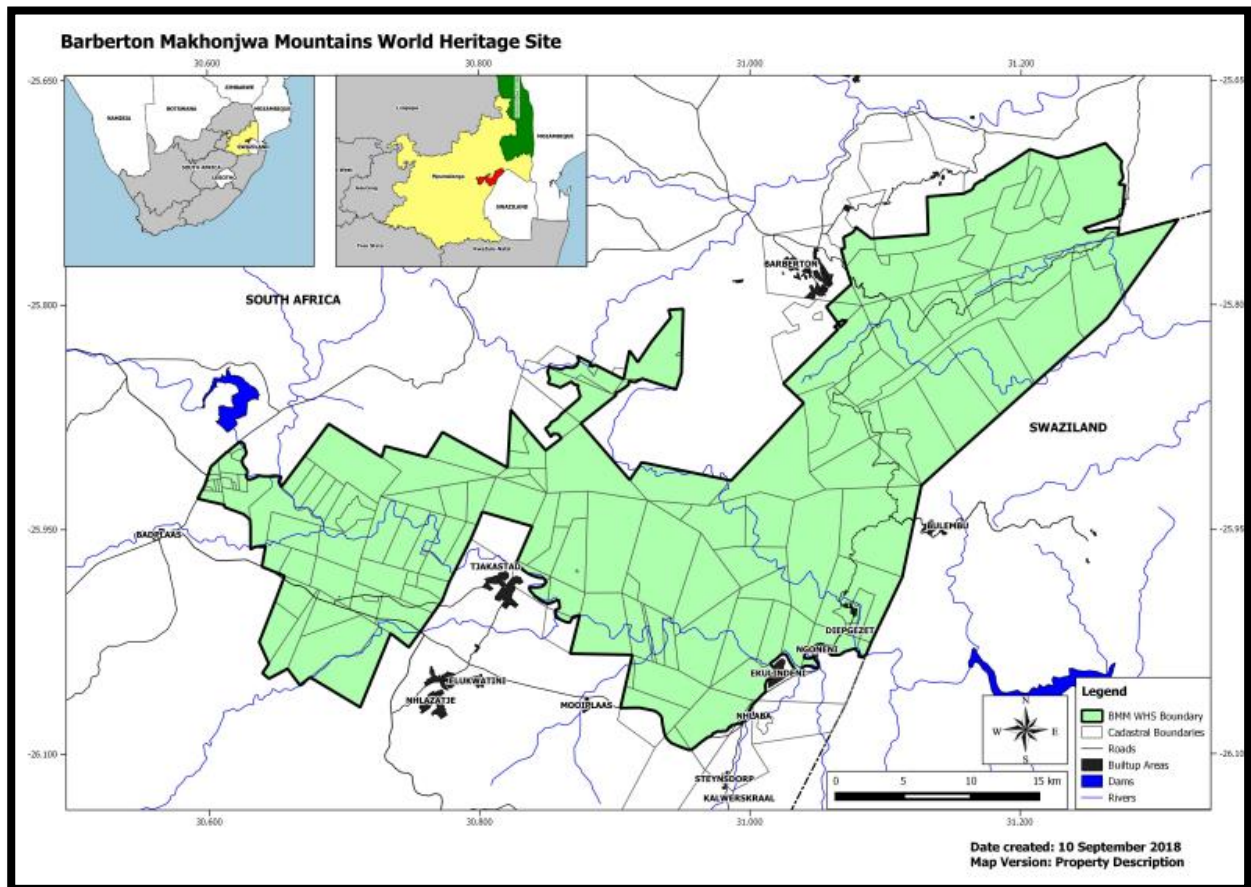


Figure 1b. Map showing the location of the Barberton Makhonjwa Mountains National Heritage Site and World Heritage Site. This World Heritage Site borders onto the north western border of Swaziland and the proposed Border Road.

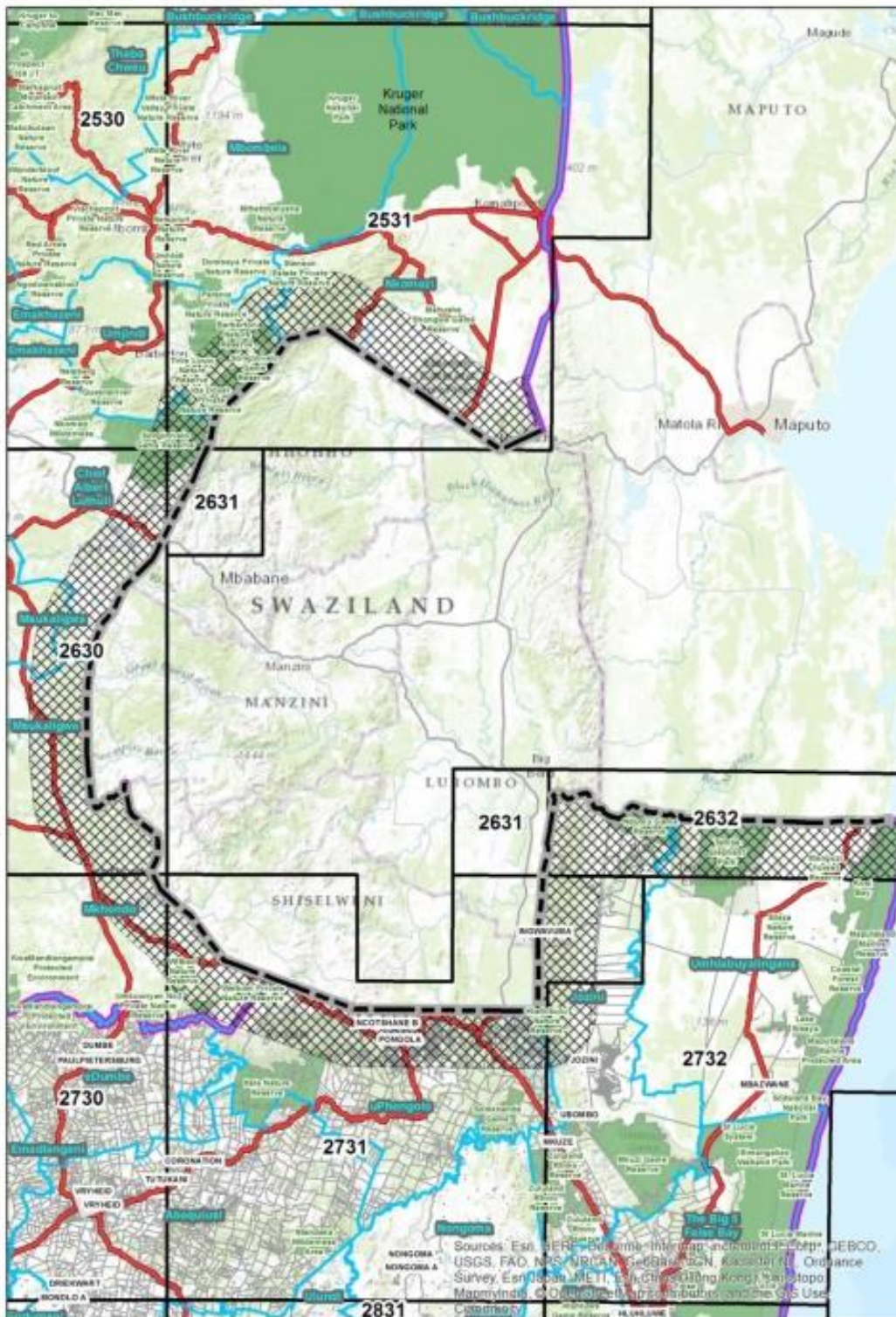


Figure 2. Map showing land-use within a buffer zone of 15km from the international boundary between South Africa, Swaziland and Mozambique.

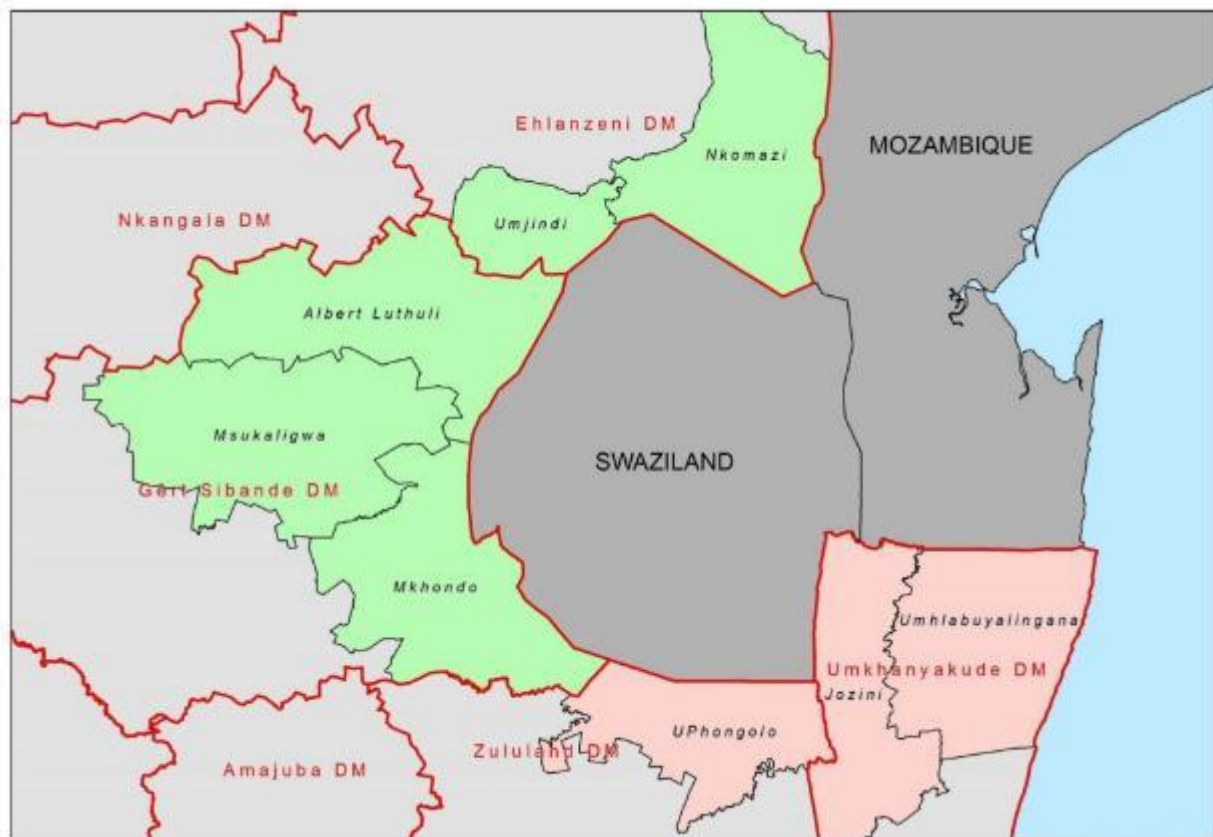


Figure 3. Map showing the location of district municipalities relative to the project area.

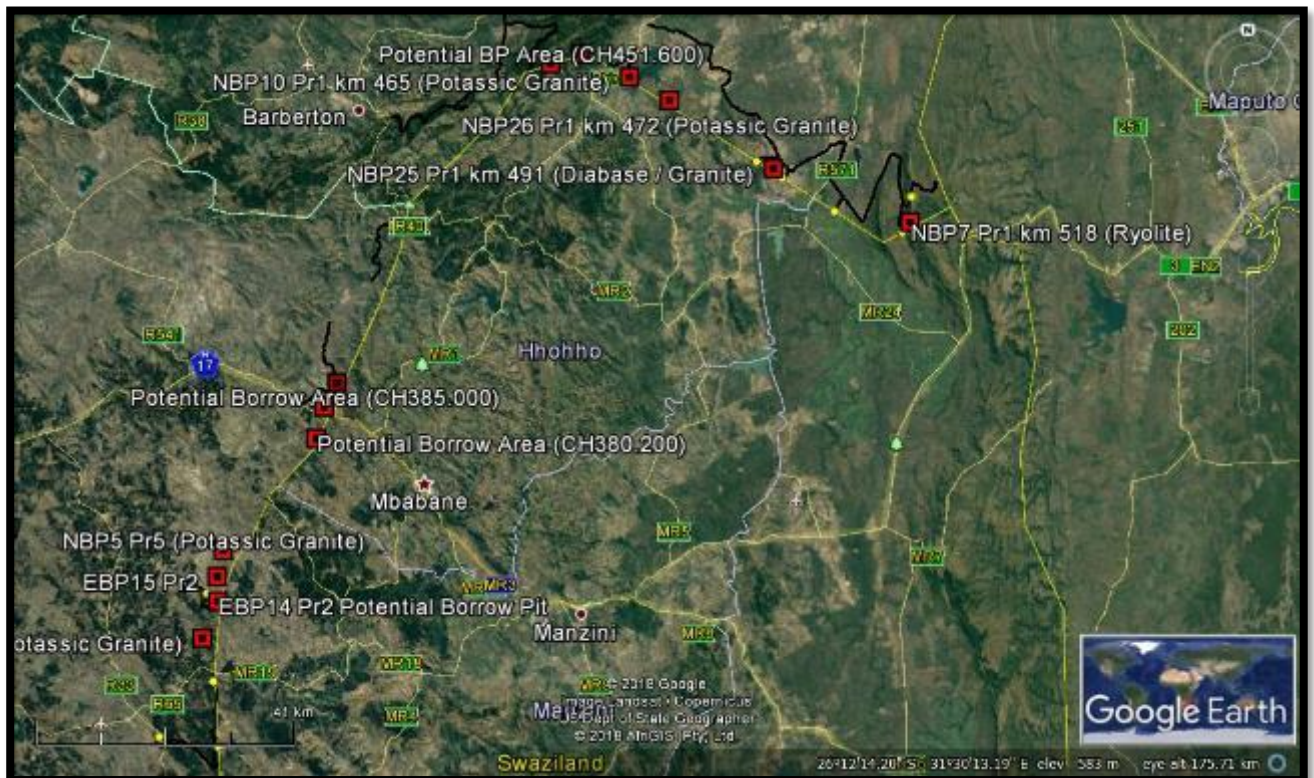


Figure 4. Original Borrow Pit positions.

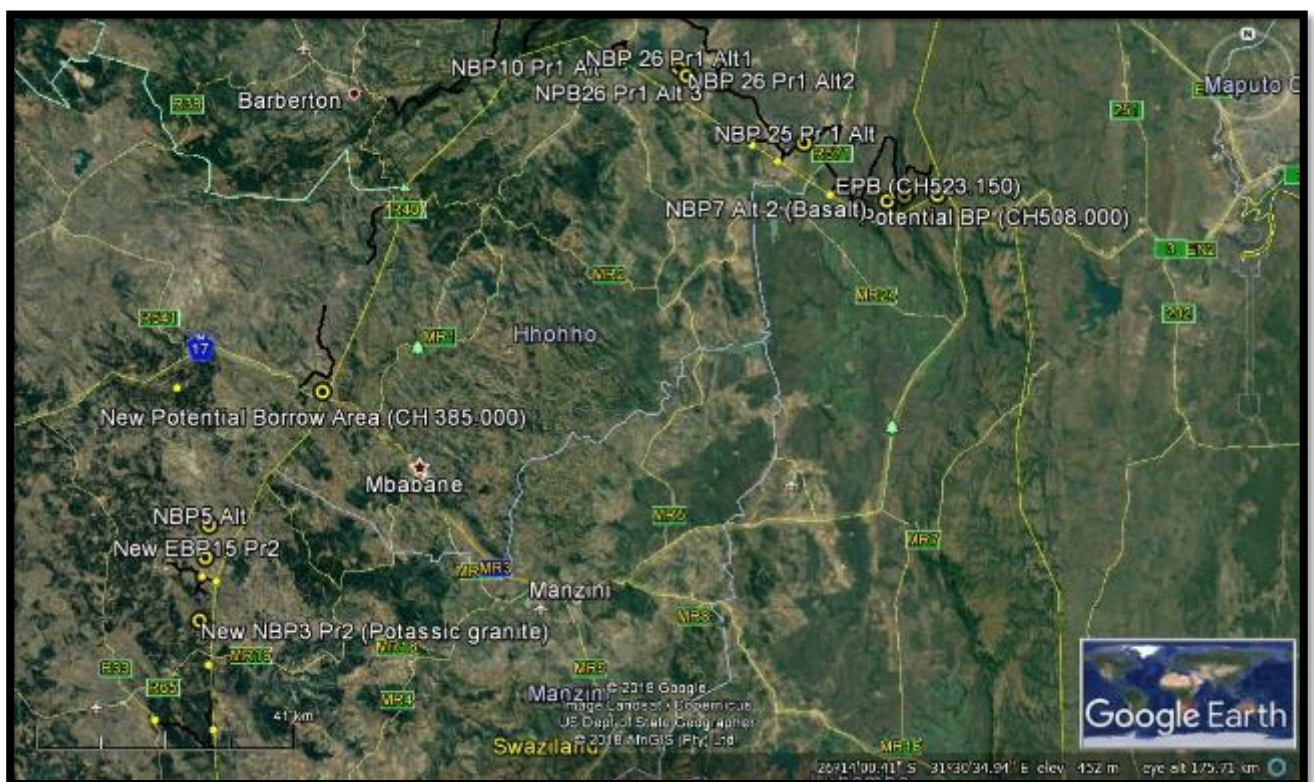


Figure 5. New Borrow Pit positions

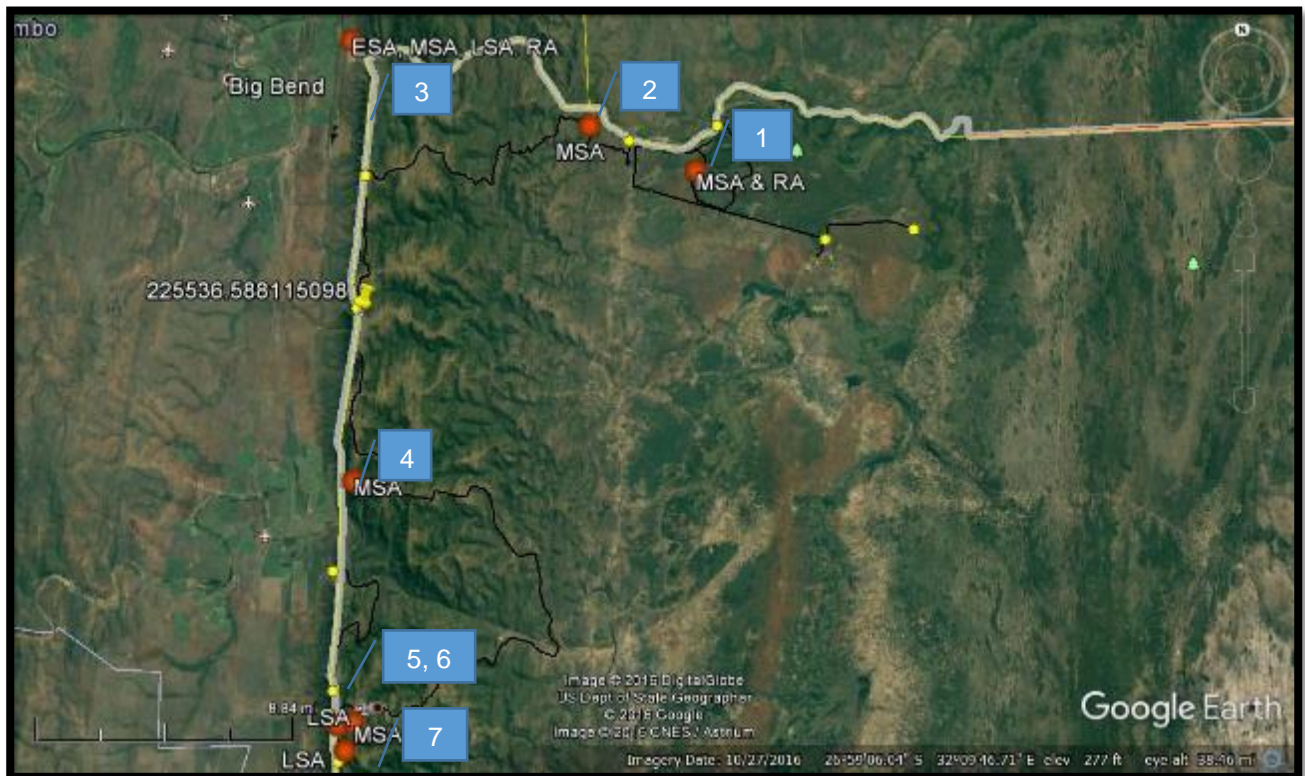


Figure 6a. Google aerial photograph showing the distribution of archaeological sites in the north eastern section of the proposed Border Road. The red polygons indicate archaeological sites.

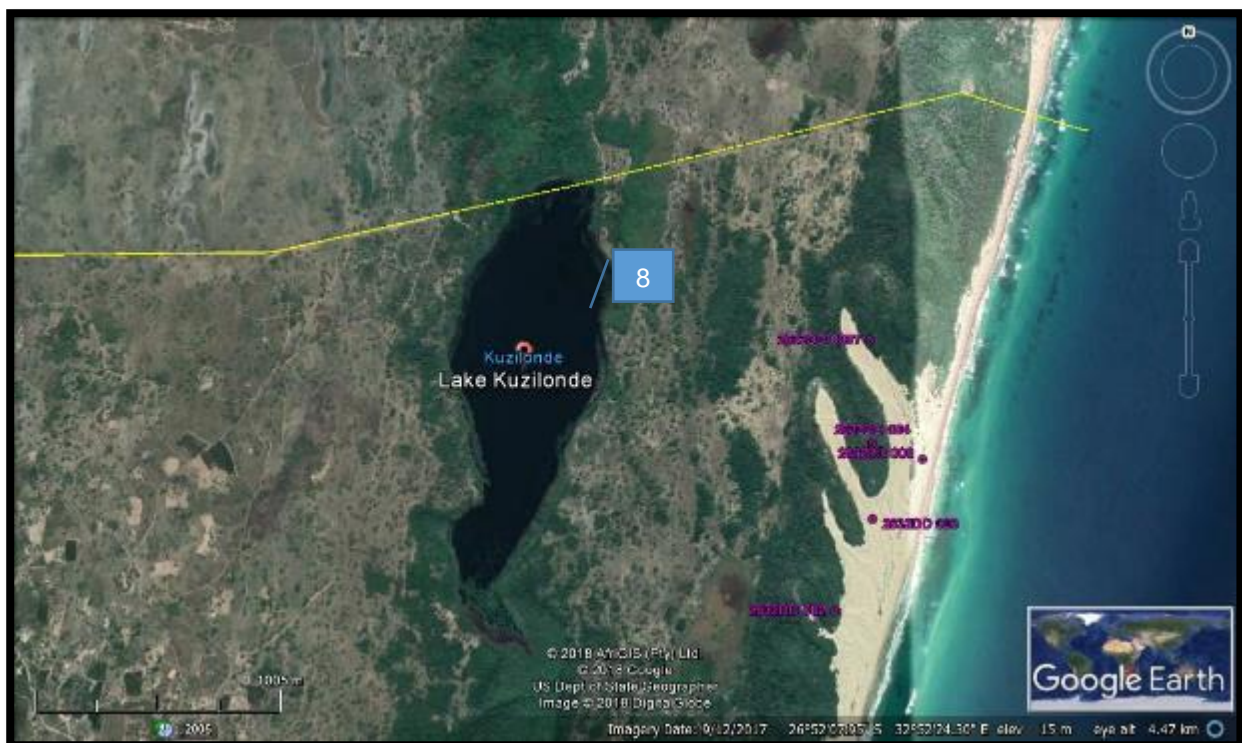


Figure 6b. Google aerial photograph showing the location of Lake Kuzilonde, a 'living heritage' site, on the border between South Africa and Mosambique.



Figure 7. Google aerial photograph showing the distribution of archaeological sites in the southern section of the proposed Border Road. The red polygons indicate archaeological sites.



Figure 8. Google aerial photograph showing the distribution of archaeological and grave sites in the northern section of the project area. The archaeological sites are indicated by the red polygons.



Figure 9. Google aerial photograph showing the distribution of archaeological sites in the north eastern section of the project area. The archaeological sites are indicated by red polygons.



Figure 10. Google aerial photograph showing the distribution of archaeological sites in the extreme north western section of the project area. These sites are located within the Barberton Mkhonjwa Mountains National Heritage Site and UNESCO inscribed World Heritage Site.



Figure 11. Google aerial photograph showing the distribution of Grave Sites in the western section of the project area.



Figure 12. Google aerial photograph showing the location of Grave Site 6 relative to Borrow Pit 12 in the western section of the project area.

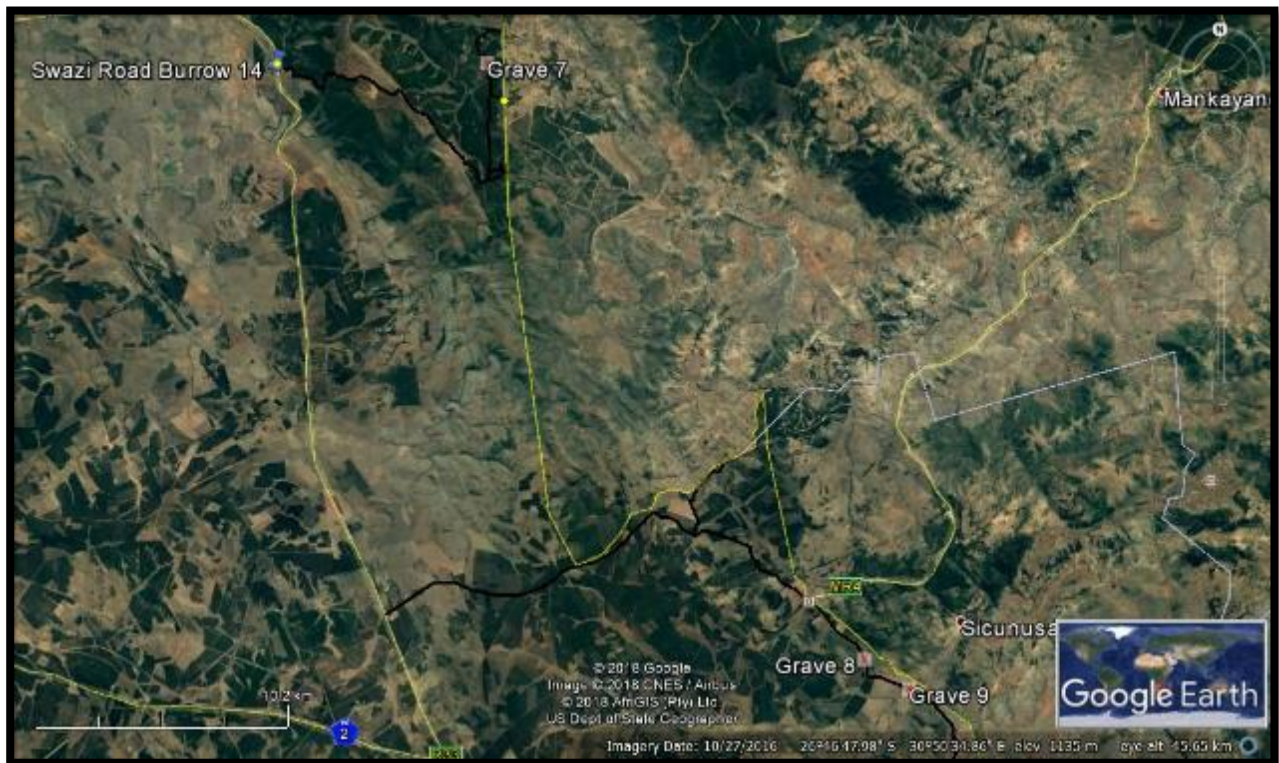


Figure 13. Google aerial photograph showing the location of Grave Sites 7 – 9 in the western section of the project area.

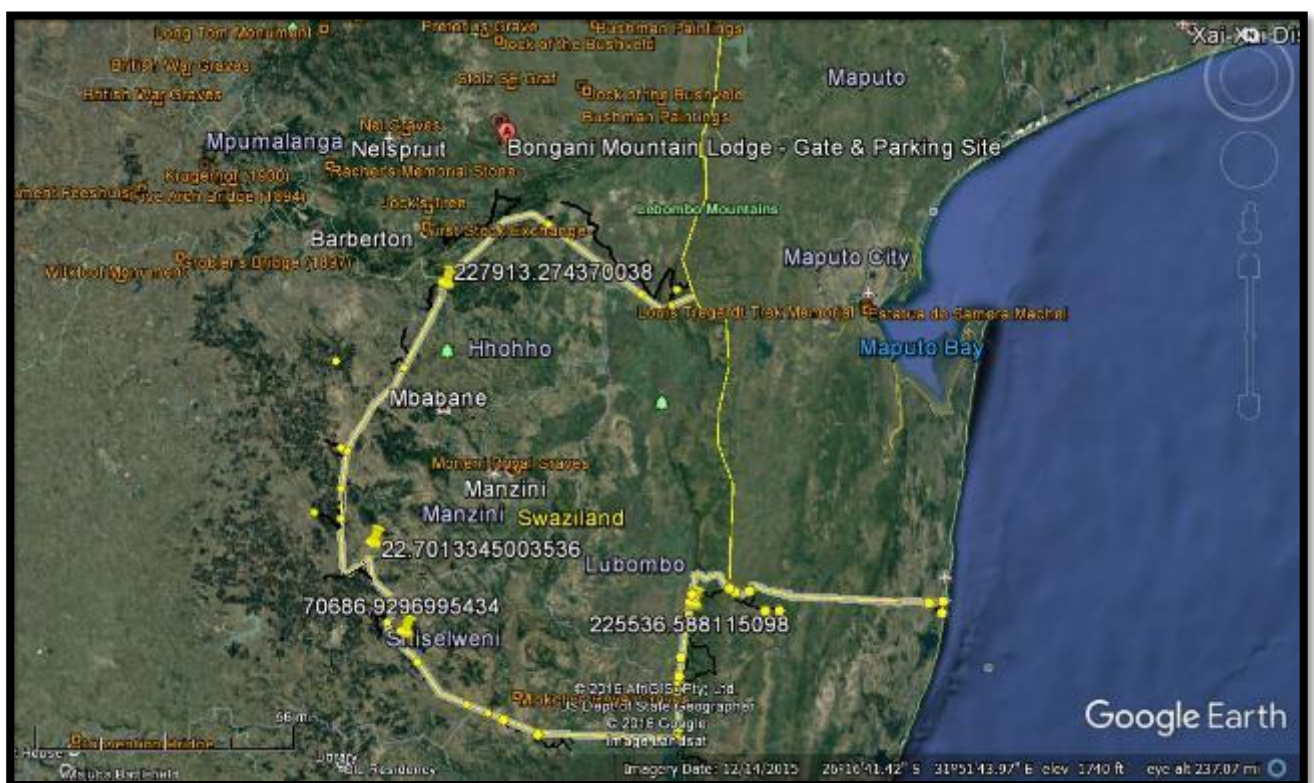


Figure 15. Google aerial imagery showing the distribution of known historical sites (orange polygons) relative to the proposed Border Road. None of these sites occur on or near the footprint.

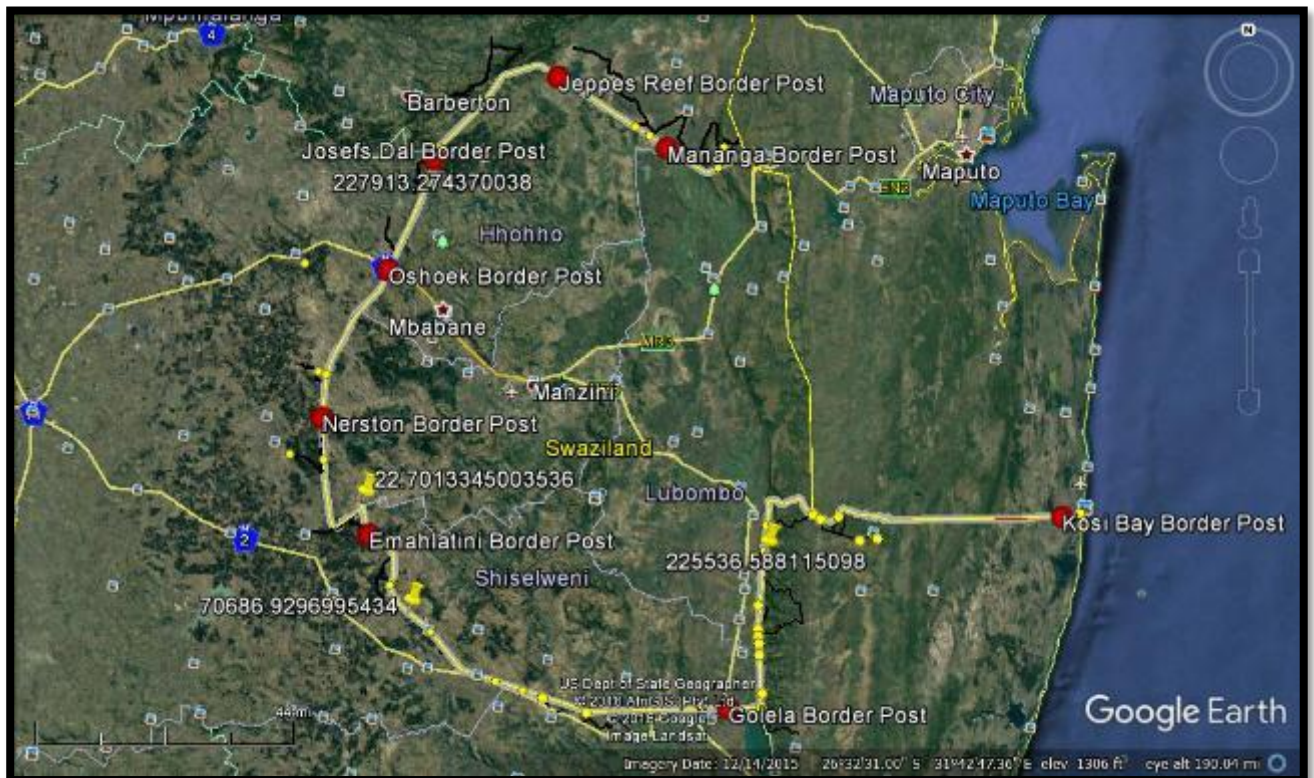


Figure 16. Google aerial photograph showing the distribution of Border Posts (red polygons) with potential historical period sites in the project area.



Figure 17. View over the north eastern section of the study area near the confluence of Swaziland, South-Africa and Mozambique.



Figure 18. Border Cave: the most significant archaeological site in the project area. It is a provincial heritage site and is associated with early *Homo sapiens* and Middle and Later Stone Age deposits.



Figure 19. Early Stone Age hand axe. Dates between 1.5mj and 300 000 years. Situated in the northern section of the project area (Fig 5).



Figure 20. Middle Stone Age flake. Dates between 40 000 and 200 000 years ago. Situated in the north eastern section of the footprint.



Figure 21. Later Stone Age flake. Made by the Khoisan or their immediate ancestors. Situated in the northern section of the project area.



Figure 22. Later Iron Age stone-walled structure situated in the extreme southern section of the project area.



Figure 23. Rural graveyard situated close to Borrow Pit 12 in the western section of the project area. Contains both marked and unmarked graves. The marked graves are younger than 60 years old



Figure 24. Du Pisanie Family Cemetery. Situated in the south western section of the project area



Figure 25. Lake Kuzilonde, a 'living heritage' site situated on the border of South Africa with Mozambique (Photograph: Royal Haskoning).



Figure 26. Harvesting of iNcema at the banks of Lake Kuzilonde (photograph: Royal Haskoning).

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APPENDIX 1: RELOCATION OF GRAVES

Burial grounds and graves older than 60 years are dealt with in Article 36 of the NHR Act, no 25 of 1999. The Human Tissues Act (65 of 1983) protects graves younger than 60 years. These fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and reburial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities.

Below follows a broad summary of how to deal with grave in the event of proposed development.

- If the graves are younger than 60 years, an undertaker can be contracted to deal with the exhumation and reburial. This will include public participation, organising cemeteries, coffins, etc. They need permits and have their own requirements that must be adhered to.
- If the graves are older than 60 years old or of undetermined age, an archaeologist must be in attendance to assist with the exhumation and documentation of the graves. This is a requirement by law.

Once it has been decided to relocate particular graves, the following steps should be taken:

- Notices of the intention to relocate the graves need to be put up at the burial site for a period of 60 days. This should contain information where communities and family members can contact the developer/archaeologist/public-relations officer/undertaker. All information pertaining to the identification of the graves needs to be documented for the application of a SAHRA permit. The notices need to be in at least 3 languages, English, and two other languages. This is a requirement by law.
- Notices of the intention needs to be placed in at least two local newspapers and have the same information as the above point. This is a requirement by law.
- Local radio stations can also be used to try contact family members. This is not required by law, but is helpful in trying to contact family members.
- During this time (60 days) a suitable cemetery need to be identified close to the development area or otherwise one specified by the family of the deceased.
- An open day for family members should be arranged after the period of 60 days so that they can gather to discuss the way forward, and to sort out any problems. The developer needs to take the families requirements into account. This is a requirement by law.
- Once the 60 days has passed and all the information from the family members have been received, a permit can be requested from SAHRA. This is a requirement by law.
- Once the permit has been received, the graves may be exhumed and relocated.
- All headstones must be relocated with the graves as well as any items found in the grave