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**CULTURAL HERITAGE RESOURCES IMPACT
ASSESSMENT OF A PORTION OF THE FARM
KANNIKWA VLAKTE 157 WITHIN THE WINTER
RAINFALL REGION OF THE NAMAQUALAND
DIVISION
± 15 FROM PORT NOLLOTH**

Report compiled by:

Dr Udo Küsel - African Heritage Consultants

**Dr Maria van der Ryst - Dept of Anthropology and Archaeology University of
South Africa**

Siegwalt Küsel Ecotone - Environmental Planning and Design.



AFRICAN HERITAGE CONSULTANTS CC

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DR. UDO S KÜSEL

Tel/fax: (012) 567 6046

Cell: 082 498 0673

E-mail: udo.heritage@absamail.co.za

P.O. Box 652
Magalieskruin
0150

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Kamkwa vliakwe nes east of Fort Nolloth in a semi-arid area of the Northern Cape.

Two calcrete sites with Middle and Later Stone Age remains were recorded in the low lying Sand veld. On the quartzite ridges on the eastern side of the property mainly Early Stone Age sites occur. Quartzite slabs were used to produce artefacts. These sites are important because they represent manufacturing.

A single conical stone beacon was recorded on a hill.

It is recommended that:

- All the archaeological sites be avoided if possible especially those on the eastern side of the farm. Should any development take place which might impact on the archaeological sites a full Phase II heritage resources impact assessment should be carried out.
- The farm beacon is relatively unique and should be protected and no development should take place within hundred metres from the beacon.
- If during construction any cultural heritage resources or graves are unearthed all work has to be stopped until the site has been inspected and mitigated by a cultural heritage practitioner.



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1. DEFINITION

The broad generic term *Cultural Heritage Resources* refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of palaeontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction.

**2. PROTECTED SITES IN TERMS OF THE NATIONAL
HERITAGE ACT, Act. NO. 25 OF 1999**

The following are the most important sites and objects protected by the National Heritage Act:

of structures older than 60 years
es and objects
ites

- d. Meteorites
- e. Ship wrecks
- f. Burial grounds
- g. Graves of victims of conflict
- h. Public monuments and memorials
- i. Structures, places and objects protected through the publication of notices in the Gazette and Provincial Gazette
- j. Any other places or object which are considered to be of interest or of historical or cultural significance
- k. Geological sites of scientific or cultural importance
- l. Sites of significance relating to the history of slavery in South Africa
- m. Objects to which oral traditions are attached
- n. Sites of cultural significance or other value to a community or pattern of South African history

3. METHODOLOGY

The proposed development site was visited and visually inspected. All appropriate documents and reports were studied and locals interviewed.

4. RESULTS

The farm Kannikwavlakte 157 lies east of Port Nolloth in Namaqualand. Namaqualand is a narrow region of semi-arid and arid country along the west coast of South Africa. It derives its name from the Nama people who inhabited the region before the arrival of European farmers. The area is home to a unique assemblage of plants and its biodiversity is without equal among the arid areas of the world. More than 3000 different species of flowers are found in the area. The annual rainfall is only 50 mm per year (Manning J, 2008: 9 ó 17).

The farm Kammikwavlakte lies on the boundary of the Richtersveld vegetation and so called Hardeveld and Klipkoppe (see maps 1 ó 3). The western portion of the farm lies in the so called sandveld with its windblown sandy soils (Manning J, 2008:17).

4.1 Overview of the Stone Age archaeology of Namaqualand

The archaeological investigations by Webley (1992a, 1992b, 2002) represent some of the most important studies conducted within the Namaqualand area, and in particular



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inland herder sites as well as at Spoeg River Cave. It is important in yielding some of the earliest dates for the first introduction of domestic stock into South Africa. The numerous Phase 1 archaeological investigations and also a large body of Phase 2 investigations conducted in view of the extensive mining activities within the Namaqualand region have demonstrated the very high levels of utilisation of the larger part of this area over a very long period of many thousands of years by Early, Middle and Later Stone Age nomadic groups and from around 2000 years ago by herders (Halkett 1997; 2001a, 2001b, 2001c, 2002a, 2002b, 2003, 2006; Halkett & Hart 1997, 1998; Halkett & Orton 2004, 2005; Orton & Halkett 2004, 2006; Orton 2005a, 2005b; Halkett & Dewar 2007). It also resulted in the publication of several academic articles (Dewar & Jerardino 2007; Dewar et al 2006; Orton et al 2005, and others).

From the foregoing it became evident that the inland areas contained a relatively lower density of sites than the coastal areas (Halkett & Hart 1997; Halkett 2002a, 2002b, 2004; Orton 2006; Orton & Halkett 2007). Many of the sites tend to be in the natural shallow deflations characteristic of the dune areas. Isolated artefacts occur all over but are more numerous in the immediate vicinity of dunes and deflation hollows (Halkett 2002a, 2002b, 2004; Halkett & Orton 2007). The most visual remains of these occupations are represented by the many coastal shell middens, sites of transient camping, several localities with human burials, rare rock shelters and then the ubiquitous lithic knapping sites.

As stone is the most durable material the lithics from the various occupation periods are represented at most of these sites. Raw materials used for the production of stone tools range from quartzites, silcretes, cryptocrystalline (CCS) rocks, quartz crystal and some vein quartz. Where silcrete was dominantly used the artefactual collections often consist largely of by-products from the manufacture of formal tools, and then mainly handaxes (Halkett 2002). The presence of small handaxes with invasive retouch at some sites reflects a Late/Upper Acheulean association with the Fauresmith Industry (Deacon & Deacon 1999; Halkett 2002, 2003, 2004).

Contexts: sequence and definitions

Period	Approximate dates
Early Stone Age (ESA)	more than 2 million years ago - 250 000/200 000 years ago
Middle Stone Age (MSA)	200 000/250 000 years ago ó 25 000 years ago to around the Last Glacial Maximum (LGM) in some regions
Later Stone Age (LSA) Includes San Rock Art	25 000 years ago - AD 200 and up to historic times in certain areas
Herder occupations	The last 2000 years up to historic times

4.2 The Stone Age localities

Various Stone Age sites were discovered during a pedestrian survey of the proposed development under review (see map 4). The geographical position of each archaeological site or lithic occurrence located during the survey was recorded using a GPS receiver. The collections include Early (ESA), Middle (MSA) and Later Stone Age (LSA) stone tools and waste materials from manufacturing activities. No organic materials were noted.

The particular features of each site, the archaeological occurrences and the significance of each assemblage are discussed in the following section.

4.2.1 Site 1 (Photograph 1 - 3)

Within the area that forms part of the western sandveldt (see Photo 1) two sites with Stone Age lithics were identified along calcrete outcrops on the western portion of the farm. Within spatially well-defined areas each of these localities contained cores, flakes and waste material which clearly accumulated through stone tool knapping activities. At both these sites relatively low numbers of MSA and LSA lithics have become exposed mainly through wind erosion.

Site 1 (see Photo 2) is located at S29° 20' 32.8"; E17° 2' 11.5". Photo 3 illustrates examples of stone tools identified from this locality. Most of the tools sampled have been made on silcrete, which is formed in soils cemented by silica. Weathering of

areas commonly results in concentrations of various
ent or replaced the original material to form a thin,
hard layer of surface soil formations such as calcretes and silcretes (Partridge 1998;
<http://www.encyclopedia.com>).

The co-occurrence of cores with primary flake and blade removals that have not been shaped into formal tools through secondary retouch suggests that some manufacture of tools took place at this locality. Cores are stone manuports that exhibit three or more negative scars from the deliberate removal of suitable flakes and blades for immediate use or as blanks that can be used to manufacture other tool types (Deacon 1984a). Silica has superior flaking properties, making it eminently suitable to produce stone tools. Lithics made on silcrete are a feature of several Cape MSA coastal locales (McBrearty & Brooks 2000), inland at MSA and LSA sites, for example on the farm Roodevley 189 in central Namaqualand (Orton 2006) and have been included as grave goods at an LSA site in the Cape interior (Steyn et al 2007). The material was probably sourced from nearby silcrete outcrops.

4.2.2 Site 2 (Photograph 4 & 5).

Site 2 is located at S29° 20'31.7"; E17° 1'55.5". Most of the sites identified during the survey tend to occur on ridges within a low undulating landscape. It is clear from the illustrations (compare Photos 2 and 4) that Site 2 contains more artefacts and the by-products of stone tool manufacture than is the case with Site 1. Most of the tools and waste derived from different fine-grained cryptocrystalline rocks (CCS), but there is more variety in the particular rock types used, which include agates, quartz and silcretes and isolated specimens on metamorphic hornfels. The artefactual collection is a mix of complete and broken MSA triangular flakes, blades and LSA flakes. There are also some amorphous cores/waste pieces with negative flake scars that resulted from flake removals during tool knapping activities.

4.2.3 Site 3 (Photograph 6, 7 & 8).

Site 3 is located within an eroded patch that has less dense plant growth than the surrounding area. It is situated on the eastern portion of the farm among small koppies. The artefactual collections at geographical position S29° 22'19.4"; E17° 5'

water run-off channelled between the koppies. The
and MSA artefacts and flakes.

The collection consists of relatively low numbers of formally shaped artefacts (see Photo 7 & 8) and also unretouched blades and flakes. Almost all of the stone tools have been produced on quartzite. Some of these retain part of the original cortex. The presence of several small handaxes may reflect a Fauresmith element. The Fauresmith Industry is seen to represent a transitional phase between the ESA and MSA. There is a tendency towards smaller tools and small handaxes in particular seem to be a characteristic feature of the Fauresmith (Deacon & Deacon 1999). Such assemblages commonly include refined handaxes with invasive retouch, long blades, convergent flakes/points, scrapers and prepared cores used to produce these tool types.

The sample from Site 3 also contains two finely-made ESA handaxes on quartz (see Photo 8). Handaxes made on quartz are relatively rare. This occurrence may indicate a local preference in the western sandveldt for this particular raw material to be used in the production of handaxes. This attribute should accordingly be taken into account in view of future exploration and mining activities that may impact on such sites.

4.2.4 Site 4 (Photograph 9, 10, 11 & 12)

A large quarry where the quartzite has previously been mined for industrial purposes is located at geographical position 29° 20' 14.5"; E17° 5' 16.0". This locality, as well as another quarry at site 5, was quarried mainly for slabs to be cut into floor tiles. The quarries date from the 1960s to the 1980s.

On the western side of the quarry at S29° 20' 13.5"; E17° 5' 13.8" is a large area where ESA artefacts mainly in the form of handaxes, are present on the surface, photo 11. The technique of manufacturing used was mostly to shape a suitable flat section of quartzite by removing flakes to produce a tool with emphasis on the pointed distal edge (Site 4, Photo 11 & 12 for examples of the quartzite slabs and the artefacts produced on similar flat sections).

4.2.5 Site 5 (Photograph 13 & 14)

317° 05ø 17.1ö is another quartzite quarry similar to photograph 13 shows a close-up of some of the mined quartzite slabs. There are also a number of large quartzite boulders at this locality (see Photo 14) which show signs of *in situ* flaking. It is not uncommon to find solitary boulders or outcrops that have been utilised for the direct removal of usually quite large flakes. This a particular feature of the terminal Pleistocene/Early Holocene non-microlithic assemblages that date to around 12 000 to 8000 BP. They are also referred to in the literature as Oakhurst for collections from cave sites, and Lockshoek for the numerous open-air sites from the Northern Cape. The only formal tools are often large scrapers made on relatively thick flakes and bone tools also feature in some assemblages (Deacon 1984b).

It is likely that the boulders photo 14 were used to detach large flakes, which could then be used to produce the small, finely made handaxes sampled from this locality.

4.2.6 Site 6 (Photograph 15 & 16)

At the foot of the hill at S29° 19ø 02.1ö; E17° 05ø 14.7ö is a large area where mostly ESA artefacts are present on the surface (see Photo 15). Quartzite is again the dominant raw material used in the manufacture of large cutting tools of which a variety of handaxes was sampled.

Two MSA cores as well as a grinding stone were also sampled from this area (see Photo 16). The grinding stone could originate from a more recent use of this locality by hunter-gatherers or stock-keeping herders such as the Nama who used to frequent the region.

4.2.7 Site 7 (Photograph 17 & 18)

Site 7 on a quartz hilltop at the geographical position S29° 19ø 11.4; E17° 05ø 14.5ö comprises a dense scatter of chunks, chips and some cores used to produce primary flakes, blades and bladelets. Most of the sample observed on the surface has Later Stone Age affinities. The site contains large quantities of quartz material interspersed with numerous artefacts and tool knapping waste, but a more intensive archaeological



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...determine the extent of the site and the relative frequencies (see photo 17 & 18).

4.3 Diamond Quartzite Industries (Pty) Ltd. Site 8

The remains of the Diamond Quartzite Industries (Pty) Ltd factory is at S29° 19' 01.7"; E17° 05' 12.0". The company quarried quartzite slabs on the farm. These were then cut into tiles for building and paving purposes. The factory operated during the 1960 ó 1980s before it closed down. The factory building is still existing (see photo 19) as well as the office building though the roof has disappeared (see photo 20). On the outside of the factory an area is paved with untrimmed quartzite slabs (see photo 21).

4.4 Beacon Site 9

On a hilltop at S29° 19' 47.3"; E17° 05' 25.9" a large conical stone beacon is present (see photo 22). This beacon most probably was one of the original farm beacons. On the farm Kannikwa 156 just north of Kannikwa Vlake a similar beacon was noticed on a hilltop. The beacon is covered with lichen which is an indication that it is old and most probably dates to the 19th century.

5. CONCLUSION

The proposed development area has a number of Stone Age sites. These sites are especially concentrated on the higher ridges on the eastern side of the property. There might also be more sites in the western sand veldt. These sites will be difficult to locate as the windblown sand would have covered most sites.

Especially the ESA sites on the eastern side are important because they also represent sites of manufacturing. All archaeological sites are protected by the National Heritage Resources Act No 25 of 1999.



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and Quartzite Industries (Pty) Ltd, date to the 1960 ó jurisdiction of the National Heritage Resources Act No. 25 of 1999.

The stone beacon most probably dates to the 19th century and is older than sixty years and protected by Section 34 of Act 25 of 1999.

6. EVALUATION

The recorded archaeological sites especially those on the eastern side (mainly ESA) are important as they represent manufacturing sites. They are of regional importance and should be protected.

The conical stone beacon is older than sixty years and at least of local interest and should be protected.

7. RECOMMENDATION

It is recommended that:

- All the archaeological sites be avoided if possible especially those on the eastern side of the farm. Should any development take place which might impact on the archaeological sites a full Phase II heritage resources impact assessment should be carried out.
- The farm beacon is relatively unique and should be protected and no development should take place within hundred metres from the beacon.
- If during construction any cultural heritage resources or graves are unearthed all work has to be stopped until the site has been inspected and mitigated by a cultural heritage practitioner.

8. SITE INFORMATION

Project applicant:	TPE Energy Development LTD
Trading name (if any):	
Business reg. no./ID. no.:	2006/022235/07
Contact person:	Mr Wayne Gardner
Physical address:	Unit 4, 10 Seacliffe road, Bantry Bay, 8005
Postal address:	Suite 52, Private Bag x 7, Seapoint, Cape Town

		Cell:	082 682 3019
	075	Fax:	086 648 8811
E-mail:	wgardner@thirdplanetenterprises.com		
Project consultant/firm:	Galago Environmental CC (Environmental Practitioners and ecological specialists)		
Business reg. no./ID. no.:	2006/050501/23		
Contact person:	Ms Vanessa Marais		
Postal address:	PO Box 886, Irene		
Postal code:	0062	Cell:	082 322 5688
Telephone:	012-345 4891	Fax:	086 675 6136
E-mail:	vanessam@lantic.net		
Professional affiliation(s) (if any)	IAIA		
Landowner:	Richtersveld Municipality		
Business reg. no./ID. no.:			
Contact person:	Mr Joseph.G. Cloete		
Postal address:	Private Bag X 113, Port Nolloth		
Postal code:	8280	Cell:	082 898 7853
Telephone:	027-851 1111	Fax:	027-851 1101
E-mail:	joecloete@richtersveld.gov.za		
District Municipality	Namakwa District Municipality		
Local authority in whose jurisdiction the proposed activity will fall:	Richtersveld Municipality		
Contact person:	Mr J.G. Cloete		
Postal address:	Private Bag X 113, Port Nolloth		
Postal code:	8280	Cell:	082 898 7853
Telephone:	027-851 1111	Fax:	027-851 1101
E-mail:	joecloete@richtersveld.gov.za		
Project title:	The establishment of the Kannikwa Vlakte Wind Farm 1 with the generating capacity of 120 mW electricity in the Port Nolloth area.		
Brief project description	The construction and erection of approximately 50-80 wind turbine generators of approximately 4.5-2.5 mW each (in three phases of 40mW each) and associated infrastructure for the generation of electricity. A security gatehouse with the potential for an education centre would be constructed at the entrance to the site and a high voltage switchyard and substation constructed so that the wind generated electricity could be fed into the existing 220kV transmission lines that cross the site.		
Project Location:	Portion of the farm Kannikwa vlakte 157 within the winter rainfall Region of the Namaqualand division.		
Closest Town(s) or district(s):	Port Nolloth	Distance (in km):	+/-15 km
Physical address:	The wind farm would be situated on a portion of the farm Kannikwa vlakte 157.		

grazing / stockfarming

Coordinates:	Latitude:	„29,0	,20,q	32,35+	South	
	Longitude:	„17,0	,04,q	15.1+	East	
Property size:	5412 ha of which 8000 m ² will be used for the wind mast					
Is a change of land-use or a consent use application required?					YES X	<input checked="" type="checkbox"/>
Must a building plan be submitted to the local authority?					YES X	<input checked="" type="checkbox"/>
Locality map:	<p>A locality map must be attached to back of this document, as Appendix A. The scale of the locality map must be at least 1:50 000. The scale must be indicated on the map. The map must indicate the following:</p> <ul style="list-style-type: none"> • an accurate indication of the project site position as well as the positions of the alternative sites, if any; • road access from all major roads in the area; • road names or numbers of all major roads as well as the roads that provide access to the site(s); • all roads within a 1km radius of the site or alternative sites; and • a north arrow. 					

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1/50 000 Map 2917 AC

Google Earth maps

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PHOTOGRAPHS



Photo 1 **Typical vegetation of the western sandveldt**



Site 1

Photo 2 Calcrete area reflecting low densities of stone tools and waste material from knapping activities



Site 1

Photo 3 Cores, flakes and blades deriving from the calcrete horizon



Site 2

Photo 4 View of calcrete area with exposed Stone Age artefacts and waste materials



Site 2

A and LSA lithics made on a variety of and other fine-grained rock types



Site 3

Photo 6 Small koppie with sparse vegetation cover.



Site 3

Photo 7 Stone Age lithics, with small handaxes from the terminal ESA on the right



Site 3

Photo 8 Two ESA hand axes on quartz



Site 4

Photo 9 Quartzite quarry as seen from the western side



Site 4

Photo 10 **Detail of debris from quarrying activities**



Photo 11 **ESA site among quartzite slabs to the west of site 4**



Photo 12 Typical ESA artefacts



Site 5

Photo 13 Quarried quartzite slabs. Stone Age people also used small flat sections to manufacture some of their ESA artefacts



Site 5

Photo 14 Large quartzite boulder with flake removal scars



Site 6

Photo 15 ESA artefacts



Site 6

Photo 16 Two MSA cores and an upper grinding stone



Site 7

Photo 17 Quartzite hill with cores, flakes and chips resulting from stone knapping activities



Site 7

Photo 18 Detail of dense quartzite pebbles and the lithic distributions



Site 8

Photo 19 Diamond Quartzite Industries Building



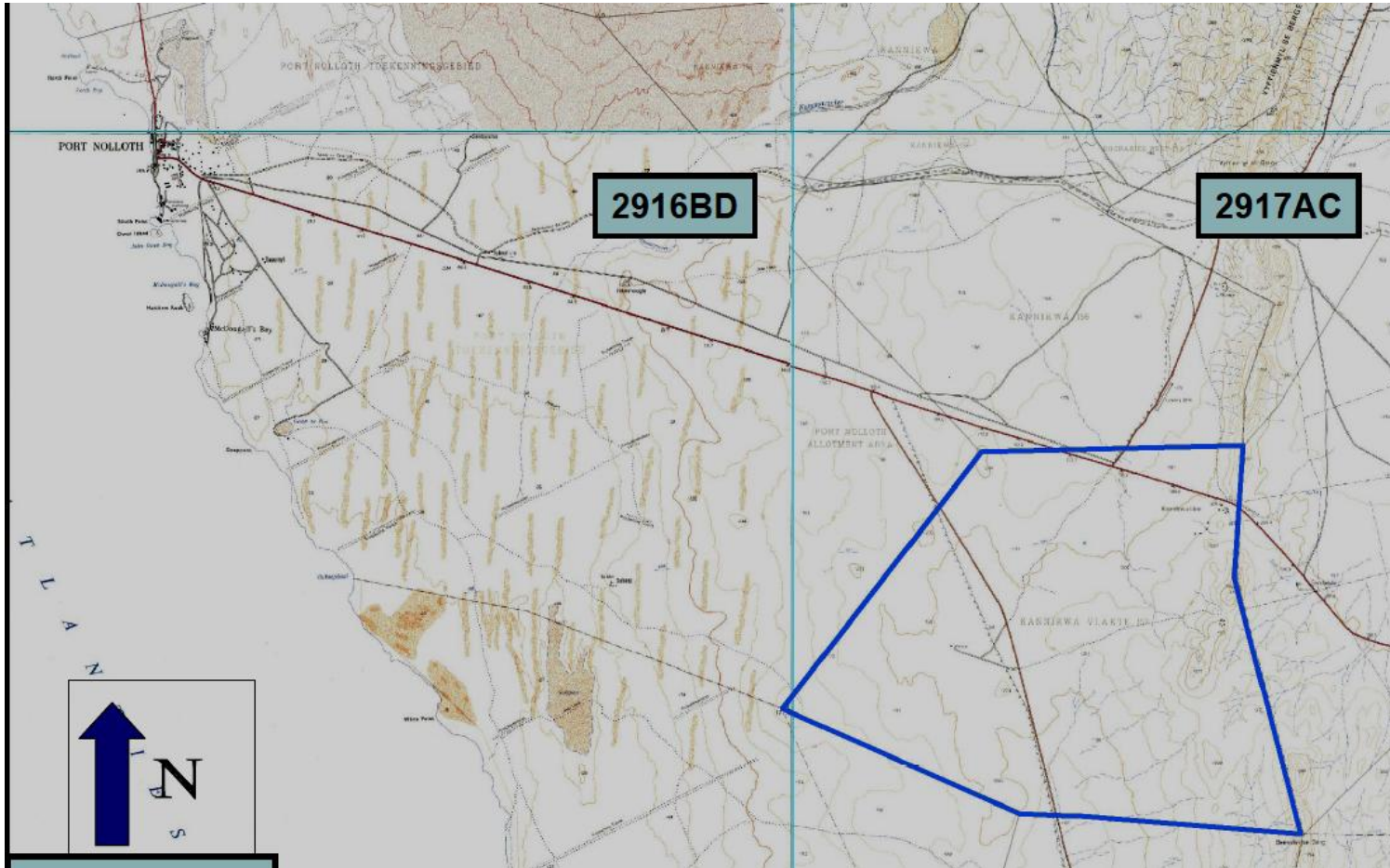
Photo 20 **Remains of office building**



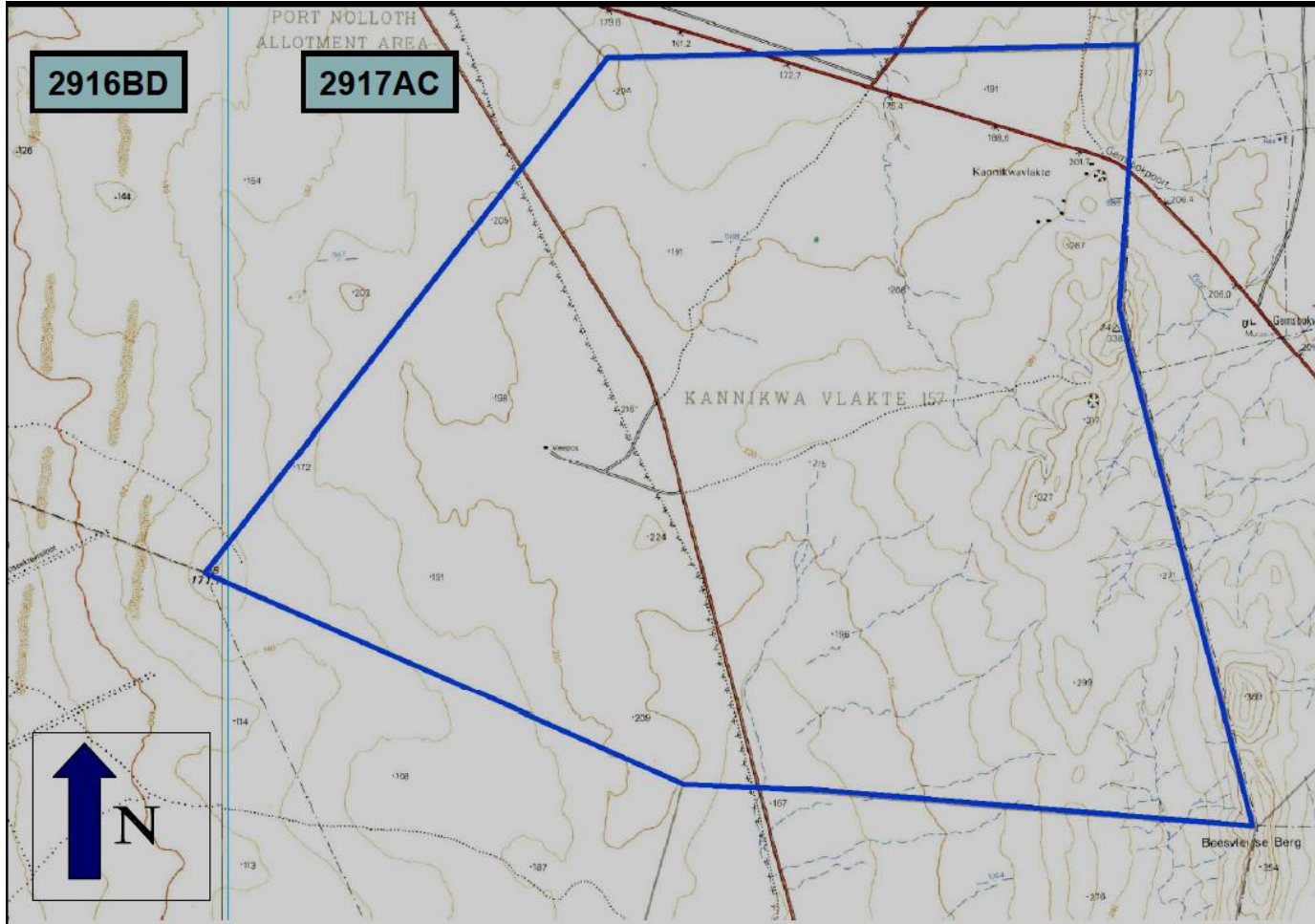
Photo 21 **Paved floor with quartzite slabs**



Photo 22 Farm beacon on top of quartzite outcrop



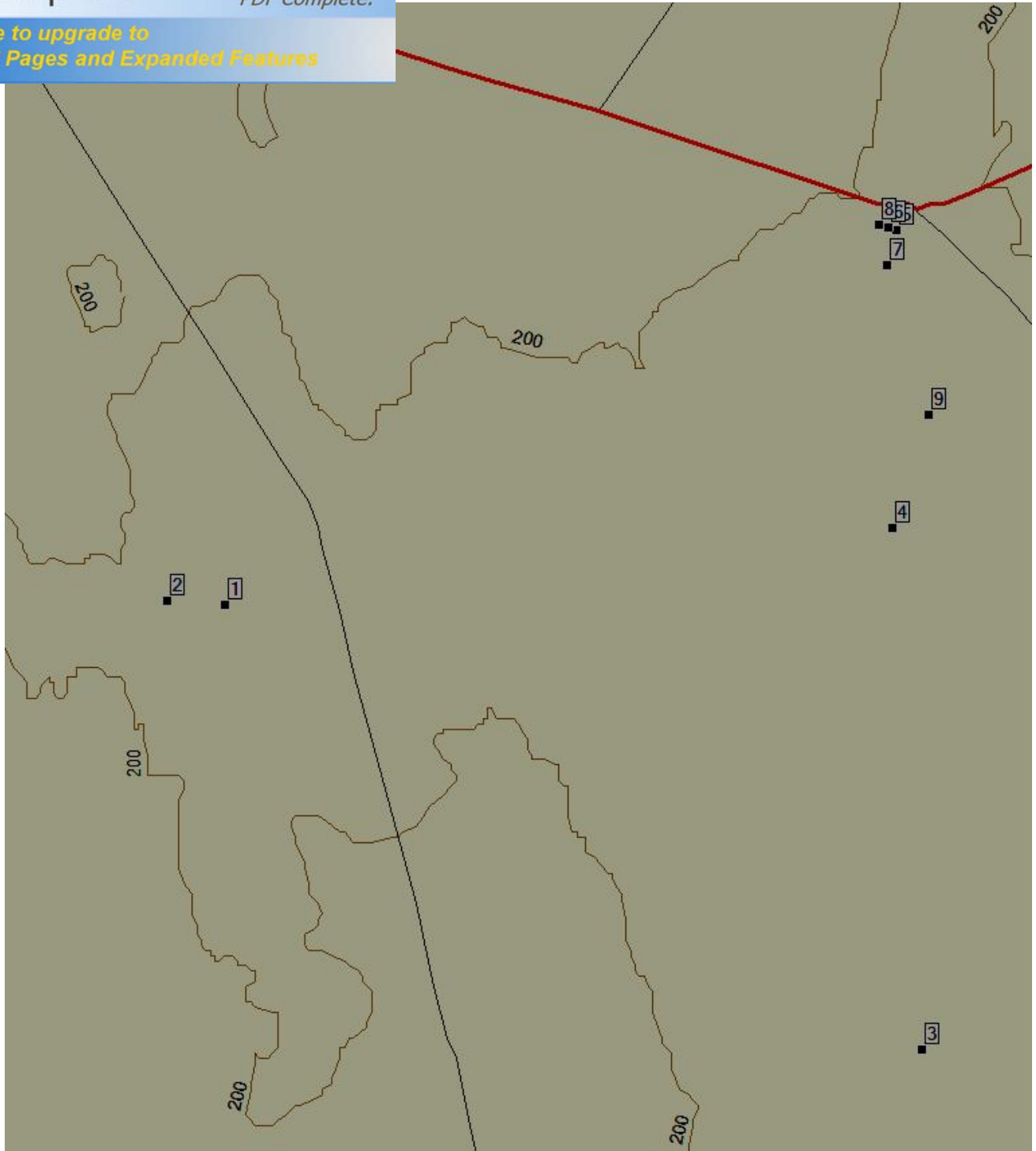
Map 1: Regional locality map of the study site



Map 2: Locality map of the study site



Map 3 Aerial photo of the Farm Kannikwa Vlake 157



Map 4: Position of recorded sites