AN ARCHAEOLOGICAL DESKTOP STUDY FOR THE PROPOSED DEEP RIVER WIND ENERGY FACILITY, KOU-Kamma MUNICIPALITY, HUMANSDORP DISTRICT, EASTERN CAPE PROVINCE

Prepared for: Savannah Environmental (Pty) Ltd
Contact person: Ms Karen Jodas
PO Box 148
Sunninghill
2157
Tel: (011) 234 6621
Fax: (086) 684 0547
Email: karen@savannahsa.com

Compiled by: Dr Johan Binneman
On behalf of: Eastern Cape Heritage Consultants
P.O. Box 689
Jeffreys Bay
6330
Tel: 042 2960399
Cell: 0728006322
email: kobusreichert@yahoo.com

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Note: This archaeological desktop impact assessment has therefore been prepared as part of the scoping phase for the proposed project in accordance with the National Heritage Resources Act 25 of 1999.

SUMMARY

The proposed site for development is some 6,6 square kilometres in size and is situated approximately 18 kilometres west of Humansdorp and comprised of relatively flat high lying agricultural land that slopes steeply to the south and east.

Little is known about the archaeology of the immediate area, mainly because no systematic research has been conducted within the area proposed for development. However, the wider region is rich in archaeological sites, and similar sites and materials may be found in the proposed site for development. This may include stone tools dating to 1,5 million years old, fossil bone and stone tools from the past 120 000 years, campsites and material from San and KhoiSan people dating from past the 10 000 years and human remains. There are several steep valleys which may house small shelters/caves where possible archaeological deposits and/or rock paintings may be found (see Appendix 1 for a list of possible archaeological sites that maybe found in the area).

It is therefore recommended that a full phase 1 archaeological impact assessment be conducted to establish the range and importance of the exposed and *in situ* archaeological heritage materials and features, the potential impact of the development and to make recommendations to minimize possible damage to these sites.

LOCATION OF THE PROPOSED DEVELOPMENT

The site (Diep Riviers Mond 358/4 and 358/16 and Farm 891) for the proposed Deep River wind energy facility and associated facilities is situated approximately 18 kilometres west of Humansdorp in the Kou-Kamma Municipality and Humansdorp District of the Cacadu District Municipality. It is 6,6 square kilomeres in size and located close to (north) the N2 national road to Port Elizabeth. The R62 main road between Kareedouw and Humansdorp marks the northern boundary and the Krom and Diep Rivers the south and eastern boundaries respectively. A small area also borders on the R102 main road (old N2 national road) to Humansdorp. The site is comprised of relatively flat high lying agricultural land that slopes steeply towards the Krom and Diep Rivers to the south and to the east respectively (Maps 1-2).

ARCHAEOLOGICAL LITERATURE/RESEARCH REVIEW

The proposed area for development is some 17 kilometres from the coast and falls outside the coastal sensitive zone. Therefore the coastal archaeology is not discussed in detail, but is available on request.

Earlier Stone Age – 1,5 million to 250 000 years ago

The oldest evidence of the early inhabitants in the region are large stone tools, called handaxes and cleavers and belong to the Acheulian Industry dating between approximately 1,5 million and 250 000 years old. These stone tools can be found in the river gravels that caps the hill slopes in the Humansdorp and Kareedouw regions and on the calcrete floors exposed in the dune systems (for example, on the farm Geelhoutboom) along the coast towards Cape St Francis (Laidler 1947; Butzer 1978; Deacon & Geleijnse 1988; Binneman 1996, 2001, 2005).

Middle Stone Age – 250 000 to ca 30 000 years ago

The large Acheulian stone tools were replaced by smaller stone tools called the Middle Stone Age (MSA) flake and blade industries. Although MSA stone tools occur throughout the region and may date between 250 000 and 30 000 years old, little is known of the MSA in the study area because no sites with well-preserved deposits have been yet found and systematically researched. However, information from the nearby coastal region (some 40 km south) indicates that the time period, between 120 000 - 30 000 years ago, also witnesses the emergence of the first modern humans (*Homo sapiens sapiens*). The oldest anatomically modern human remains globally (some 110 000 yeas old) appear in the Klasies River complex of caves some 20 kilometres east of the proposed development (Singer & Wymer 1982; Rightmire & Deacon 1991; Deacon 1992, 1993, 2001; Deacon, H. J & Shuurman, R. 1992; Deacon & Deacon 1999). The archaeological deposits at the Klasies River Caves (1-5) date to 120 000 years old and provide an excellent platform to study past human behaviour (Klein 1976; Henderson 1992; Henderson & Binneman 1997).

Although humans were already anatomically modern by 110 000 years ago, they were not yet exhibiting 'modern behaviour' and only developed into culturally modern-behaving humans between 80 000 and 70 000 years ago. This occurred during cultural phases known as the Still Bay and Howieson's Poort time periods/stone tool traditions/industries. The Howison's Poort Industry is well represented at Klasies River Cave 2 (Deacon & Wurz 1996; Wurz 1999) and also in the dunes near Oyster Bay (Carrion *et all.* 2000).

Later Stone Age – ca 20 000 to historical times

Some 25 000 years ago the MSA gave way to the Later Stone Age (LSA) a time period marked by large scale technological changes. The period between 20 000 and 14 000 years ago experienced extremely cold climatic conditions (Last Glacial Maximum - the last ice age). Archaeological and palaeoenvironmental evidence from the Cape St Francis coast indicate that the cold temperatures created favourable conditions for grassland expansion, which in turn gave rise to large herds of grazing animals. The mammal remains from archaeological sites indicate that there were several large grazing animal species living on the grassland, for example giant buffalo, giant hartebeest and the Cape horse. After 14 000 years ago the temperature started to warm up again and caused the previously exposed grassland to disappear, causing the extinction of many grassland animal species including the giant buffalo, hartebeest and the Cape horse.

In comparison to previous time periods, the LSA (especially the past 10 000 years) is characterised by several 'new' technological innovations while other cultural artefacts and expressions became more common, such as rock art. New microlithic stone tool types (some fixed to handles with mastic) emerged along with bows and arrows, containers (such as tortoise shell bowls and ostrich eggshell flasks which were sometimes decorated), decorative items, bone tools and much more. For the first time people were buried in caves and rock shelters and often these burials are associated with grave goods and marked by painted stones. Others became more common, such as rock art, burials associated with grave goods, painted stones, new microlithic stone tool types, some fixed to handles with mastic, bow and arrow, containers, such as tortoise shell bowls and ostrich eggshell flasks (sometimes decorated), decorative items, bone tools and many more (Deacon & Deacon 1999).

Between 10 000 and 8 000 years ago the terrestrial environment became more closed (bushier) giving rise to small browsing territorial animals that lived in small groups or pairs. Recently the remains of an extinct goat-like bovid dating from this time period, was identified from several archaeological sites in the area. This was the last of the remaining Last Glacial grazing animals to disappear from the archaeological deposits in the Kouga region.

Excellent preservation of organic material in some caves and shelters in the nearby Kouga Mountains yielded remarkable botanical artefacts, such as digging sticks (4 500 years old), fire sticks (5 800 years old), decorated wooden sticks (9 200 years old) and almost complete mummified human remains dating to some 2 000 years ago. Other interesting features are 'storage pits' (hollows lined with plant material) which were used to store seeds for later use, and 'postholes' (often with post still *in situ*). It would appear that shelters were divided, presumably into small family living areas (Binneman 1996, 1997, 1998, 1999a & b, 2000; Binneman & Hall 1993).

Last 2 000 years

The first real change in the socio-economic landscape came some 2 000 years ago when KhoiKhoi pastoralists settled in the region. They were the first food producers in this area and introduced domesticated animals (sheep, goats and cattle) and ceramic vessels to the region. Many sites were found along the adjacent Cape St Francis coast, with the oldest dating to 1 500 years old. The first sheep was identified from an archaeological Khoi herder site in South Africa near Patensie in the 1960s (Deacon 1967; Klein & Scott 1974). The preservation of plant remains was excellent and the first archaeo-botanical study in South Africa was also conducted from this site (Wells 1965). A large number of archaeological artefacts and human remains were found near Andrieskraal during the construction of the irrigation canals in the Gamtoos Valley in the 1960s (Deacon 1965; De Villiers 1965). Not long after their arrival, the first Europeans rounded the Cape and greatly altered the prehistoric socio-economic landscape.

CONCLUSIONS AND RECOMMENDATIONS

Although little archaeological information is available for the proposed Deep River wind energy facility site, there is a wealth of information available within the wider region to determine what possible archaeological artefacts and remains may be encountered during an investigation of the area. The proposed area is situated outside the 5 km archaeological sensitive coastal zone. There is also a possibility of encountering painted rock shelters and caves within the river valleys.

It is therefore recommended that a full phase 1 archaeological impact assessment be conducted to establish the range and importance of the exposed and *in situ* archaeological heritage

materials and features, the potential impact of the development and to make recommendations to minimize possible damage to these sites.

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APPENDIX 1: IDENTIFICATION OF ARCHAEOLOGICAL FEATURES AND MATERIAL FROM INLAND AREAS: guidelines and procedures for developers

1. Caves and shelters

Often these features were inhabited by people in the past, such as the San and KhoiSan, and contain valuable archaeological deposits. These deposits and remains such as stone artefacts, bone, pot shards and ornaments are protected by legislation and must not be damaged by digging or collected. Contact the nearest archaeologist for information and advise regarding the protection and conservation of these features.

2. Rock art - paintings

Rock paintings are often found in caves, rock shelters and also in the open on boulders. They are easy to recognize and must be treated with care. No water or any other substances must be applied to the paintings. Rock engravings are pictures scratched, scraped and pecked into the dark surface of rocks with sharp objects to expose the lighter under surface. Contact the nearest archaeologist to provide information and advice regarding the protection and conservation of rock art.

3. Human Skeletal material

Human remains, whether the complete remains of an individual buried during the past, or scattered human remains resulting from disturbance of the grave, should be reported. In general human remains are buried in a flexed position on their side, but are also found buried in a sitting position with a flat stone capping. Developers are requested to be on alert for the possibility of uncovering such remains.

4. Stone artefacts

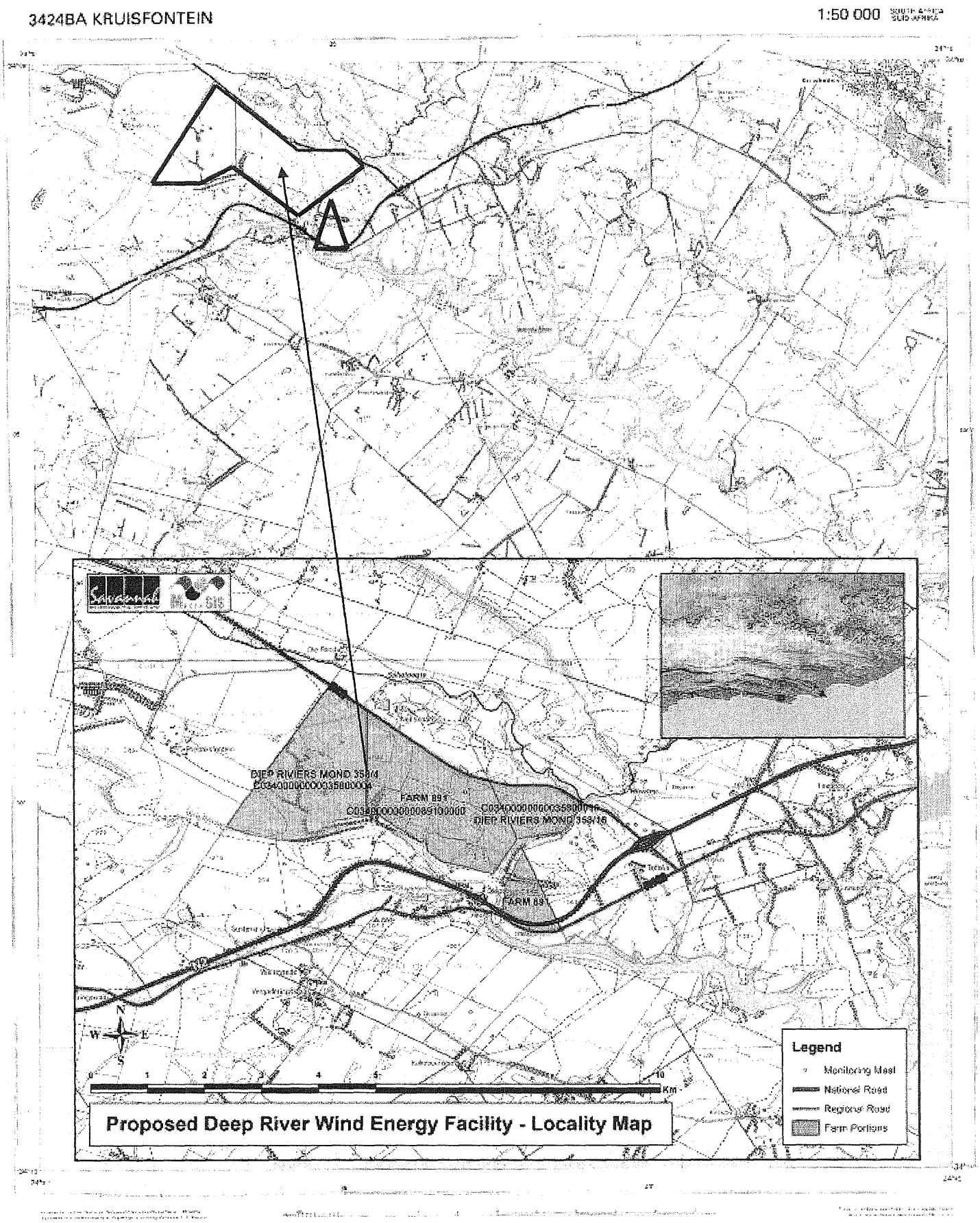
These are difficult for the layman to identify. However, large accumulations of flaked stones which do not appear to have been distributed naturally should be reported. If the stone tools are associated with bone remains, development should be halted immediately and archaeologists notified.

5. Fossil bone

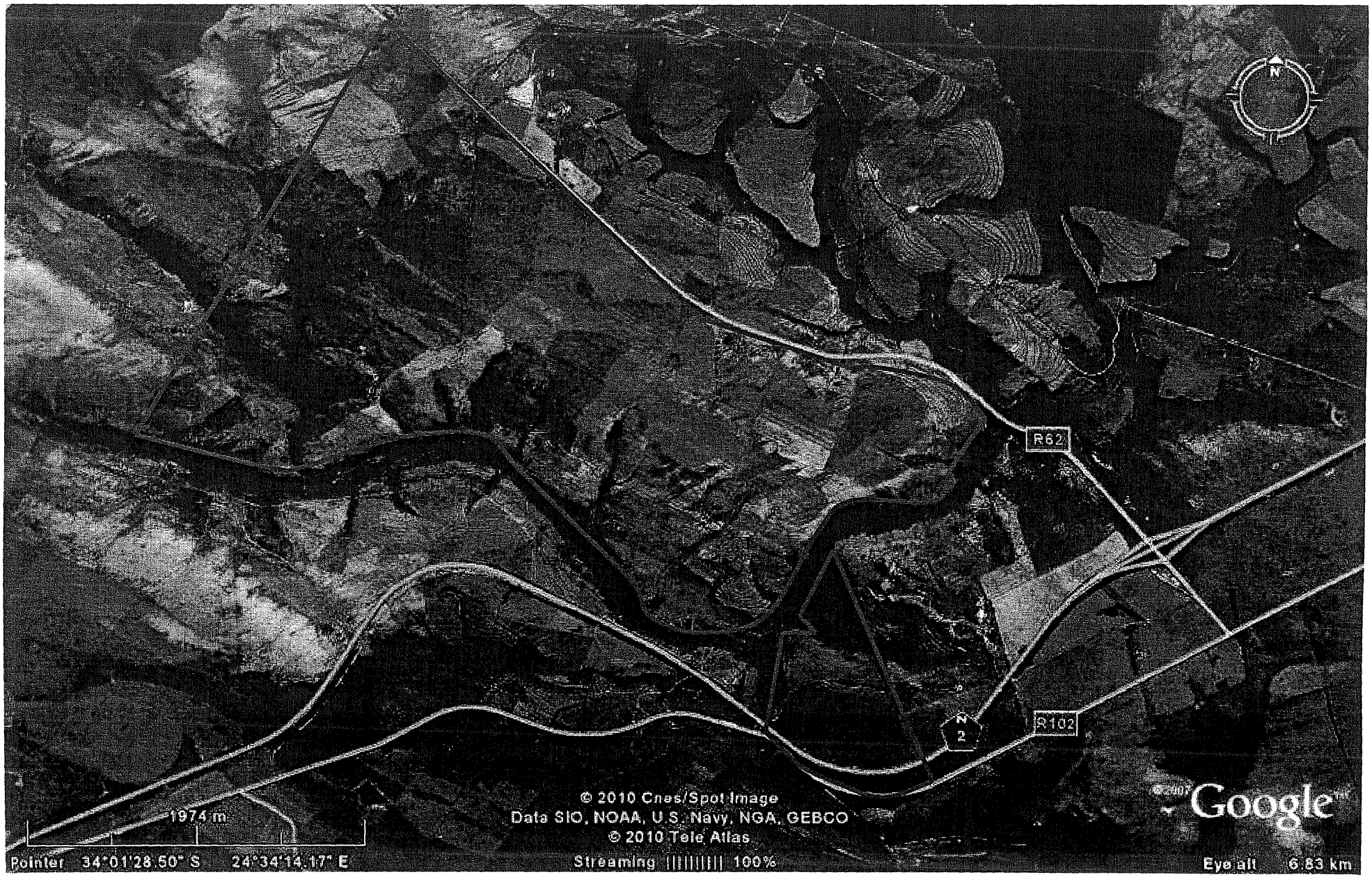
Fossil bones may be found embedded in geological deposits. Any concentrations of bones, whether fossilized or not, should be reported.

6. Historical artefacts or features

These are easy to identify and include foundations of buildings or other construction features and items from domestic and military activities.



Map 1. 1:50 000 maps indicating the location of the proposed Deep River wind energy facility. The red lines outline the approximate size of the site (insert map, courtesy of Savannah (Pty) Ltd).



Map 2. Aerial view of the location of the proposed Deep River wind energy facility. The red lines outline the approximate size of the site.