

**A PHASE 1 ARCHAEOLOGICAL HERITAGE IMPACT ASSESSMENT FOR THE
PROPOSED DEEP RIVER WIND ENERGY PROJECT, KOUGA MUNICIPALITY,
DISTRICT OF HUMANSDORP, EASTERN CAPE PROVINCE**

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Note: This report follows the minimum standard guidelines required by the South African Heritage Resources Agency for compiling Phase 1 Archaeological Heritage Impact Assessment (AHIA) reports.

1. EXECUTIVE SUMMARY

Purpose of the Study

The purpose of the study was to conduct a phase 1 archaeological impact assessment (AIA) for the proposed Deep River Wind Energy Facility near Humansdorp, Kouga Municipality, Cacadu District Municipality, Eastern Cape Province. The survey was conducted to establish the range and importance of the exposed and *in situ* archaeological heritage remains and features, the potential impact of the development and, to make recommendations to minimize possible damage to these sites.

The site and location

The proposed Deep River Wind Energy Facility site is situated approximately 18 kilometres west of Humansdorp. The landscape is relatively flat, high-lying agricultural lands sloping steeply to the south and east towards the Krom and Diep Rivers. The site is currently being used for general farming activities such as grazing and cultivation, and has therefore been ploughed extensively. The entire area for the proposed wind energy facility is covered by dense grass, fynbos and alien vegetation. The steep slopes of the Diep and Krom Rivers are covered by near-pristine fynbos vegetation, and the river valleys by dense alien trees.

The proposed Deep River development entails the construction and operation of a wind energy facility and associated infrastructure. The wind energy facility will be developed on some 7 square kilometres and comprise up to 25 wind turbines with a proposed total generating capacity of approximately 50 MW.

The investigation

The proposed Deep River Wind Energy Facility site is approximately 17 kilometres from the coast and falls outside the coastal sensitive zone. The site is covered by dense grass, fynbos and alien vegetation, which made archaeological visibility difficult. The area has also been disturbed by general farming activities. No archaeological *in situ* sites/remains were found on the relatively flat plateau, although it is possible that stone artefacts may occur under the dense grass vegetation cover.

A large Earlier and Middle Stone Age site was observed on the steep northern slopes at the confluence of the Krom and Diep Rivers. No other archaeological material was associated with the stone tools. The development will take place mainly on the plateau above the rivers and will therefore not have a direct impact on the site.

Cultural sensitivity

The area investigated appears to be of low archaeological sensitivity and the impact of construction will be of low negativity.

Recommendations

In the unlikely event that any concentrations of archaeological material are uncovered during development, work must immediately cease and be reported to the nearest archaeologist and/or the South African Heritage Resources Agency.

Community consultation

Consultation with the Gamtkwa KhoiSan Council was conducted as required by the National Heritage Resources Act No. 25 of 1999, Section 38(3e).

2. PROJECT INFORMATION

Status

The proposed wind energy facility is to be developed by VentuSA Energy and is referred to as the Deep River Wind Energy Facility. This report is part of an Environmental Impact Assessment.

The type of development

The proposed Deep River Wind Energy Facility and associated infrastructure will be developed on some 7 square kilometres and comprise of up to 25 wind turbines with a proposed total generating capacity of approximately 50 MW. The associated infrastructure required for the facility will include concrete foundations to support the turbines. Cabling between the turbines will be laid underground. A substation to facilitate the connection

between the wind energy facility and the grid will be constructed. A new overhead power line to connect the grid to Eskom's existing Melkhout substation near Humansdorp will also be constructed. Other developments will include internal access roads to each turbine and a workshop area for maintenance and storage of equipment.

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Terms of reference

To conduct a phase 1 archaeological impact assessment (AIA) for the proposed Deep River Wind Energy Facility and the associated infrastructure near Humansdorp, Kouga Municipality, Cacadu District Municipality, Eastern Cape Province. The survey was conducted to establish the range and importance of the exposed and *in situ* archaeological heritage remains and features, the potential impact of the development and, to make recommendations to minimize possible damage to these sites.

3. ARCHAEOLOGICAL BACKGROUND

Brief literature review

Little is known about the archaeology of the immediate Deep River area, mainly because no systematic research has been conducted there. The oldest evidence of the early inhabitants in this area are large stone tools, called hand axes 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 cap the hill slopes in the Humansdorp and Kareedouw regions and on the calcrete floors exposed in the nearby coastal 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).

The large hand axes and cleavers were replaced by smaller stone tools called the Middle Stone Age (MSA) flake and blade industries. Evidence of MSA sites occur throughout the

region and date between 250 000 and 30 000 years old. Fossil bone may in rare cases be associated with MSA occurrences. (Deacon & Deacon, 1999). Information from the nearby coastal region (some 17 km south) indicates that the time period, between 120 000 - 30 000 years ago, also witnesses the emergence of the first anatomically modern humans (*Homo sapiens sapiens*). The oldest remains globally (some 110 000 years old) appear in the Klasies River complex of caves some 20 kilometres west of the proposed development (Singer & Wymer, 1982; Rightmire & Deacon, 1991; Deacon, 1992, 1993, 2001; Deacon, H. J & Shuurman, R. 1992; Deacon & Deacon 1999). 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 Howieson's Poort Industry is well represented at Klasies River Cave 2 (Deacon & Wurz, 1996; Wurz, 1999) and also in the coastal dunes near Oyster Bay (Carrion *et al.*, 2000).

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). 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 (Klein, 1976). 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 of these grassland animal species.

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).

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, 1997, 1998,

1999a & b, 2000).

For most of the past 20 000 years San hunter-gatherers lived in the cave rock shelters of the region and many still display paintings along the walls. In general the paintings are not well-preserved and appear to be of a similar 'style' throughout the region with the dominant colours being red and maroon, and red with black, with yellow and white being present to a lesser degree. The paintings do not, for example, represent only a hunting scene or some or other daily activity, but each painting had a particular symbolic meaning for the painters.

The first real change in the socio-economic landscape came some 2 000 years ago when Khoi 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. Not long after their arrival, the first Europeans rounded the Cape and greatly altered the prehistoric socio-economic landscape.

4. DESCRIPTION OF THE PROPERTY

Area Surveyed

Location data

The site for the proposed Deep River Wind Energy Facility and associated infrastructure is situated approximately 18 kilometres west of Humansdorp in the Kouga Municipality and Humansdorp District of the Cacadu District Municipality. The development will take place on Portion 4 and 16 of the farm Diep Rivier Mond No. 358 and Farm 891 and will be approximately 7 square kilometres in size. It is located slightly to the north of the N2 national road to Port Elizabeth. The R62 main road between Kareedouw and Humansdorp marks the northern boundary of the site and the Krom and Diep Rivers the southern and eastern boundaries respectively. A small area also borders on the R102 main road (old N2 national road) to Humansdorp.

The landscape is comprised of relatively flat high lying agricultural land sloping steeply towards the Krom and Diep Rivers to the south and east respectively (Maps 1-3). The site is currently being used for general farming activities such as grazing and cultivation and has therefore been ploughed extensively. General small scale farming activities such as the construction of fences, dams, kraals, farm roads, power lines as well as the occurrence of soil erosion has disturbed the site in the past. The entire area for the proposed wind energy facility is covered in dense grass which made archaeological visibility difficult. The steep slopes of the Diep and Krom Rivers are covered by near-pristine fynbos vegetation, and the river valleys are covered by dense alien trees.

5. ARCHAEOLOGICAL INVESTIGATION

Methodology and results

The proposed Deep River Wind Energy Facility site was investigated by two people. A literature study of the archaeology of the region was compiled prior to the survey. Consultation was also conducted with the local Gamtkwa KhoiSan community regarding the archaeological heritage.

It was unfeasible to conduct an absolute observational survey owing to the extent of the property, the dense grass, fynbos and alien vegetation cover. Surveys were conducted on foot and spots checks and surveys from a vehicle were conducted to inspect as much of the terrain as possible. GPS readings were taken and all important features were digitally recorded. Farm tracks to the turbine locations were followed by vehicle and investigated further on foot. Transects were conducted on foot to reach the turbine locations where no farm tracks existed (Map 4).

The survey was limited to the relatively flat plateau where the turbines will be constructed (Map 3). The dense grass cover made archaeological visibility difficult. Most of the area is covered by grey loamy/sand which has been extensively ploughed in the past for the cultivation of a variety of crops and to encourage pasture for cattle and sheep. Large areas are also under cultivation. The underlying hard rock and river gravels are exposed in some areas, which suggest that the top grey soil is relatively shallow and do not allow for deep archaeological deposits (Figs 1-12). Areas exposed by erosion and mole heaps throughout the study area have been investigated to check for possible material that may have been exposed or pushed to the surface. No archaeological remains were observed, but material may be covered by soil and grass and/or may have been ploughed. A few stone artefacts were observed among the large piles of stones which were removed from the ploughed fields (Figs 13-14) (GPS reading: 34.01.392S; 24.34.267E).

The steep slopes that are less suitable to locate these large turbines, were investigated by vehicle where tracks existed and by spot checks on foot in the absence of any tracks. Dense near-pristine fynbos covered the upper slopes and alien trees occupied stream and the deep river valleys of the Krom and Diep Rivers. Areas and hill sides close to the Krom River have been exposed to ploughing and the creation of contour walls (Maps 3 and 5). A large Earlier (Acheulian) and Middle Stone Age site (between 1,5 million and 30 000 years), containing thousands of stone tools was exposed by these activities (Figs 15-18) (GPS reading: 34.01.931S; 24.34.514E).

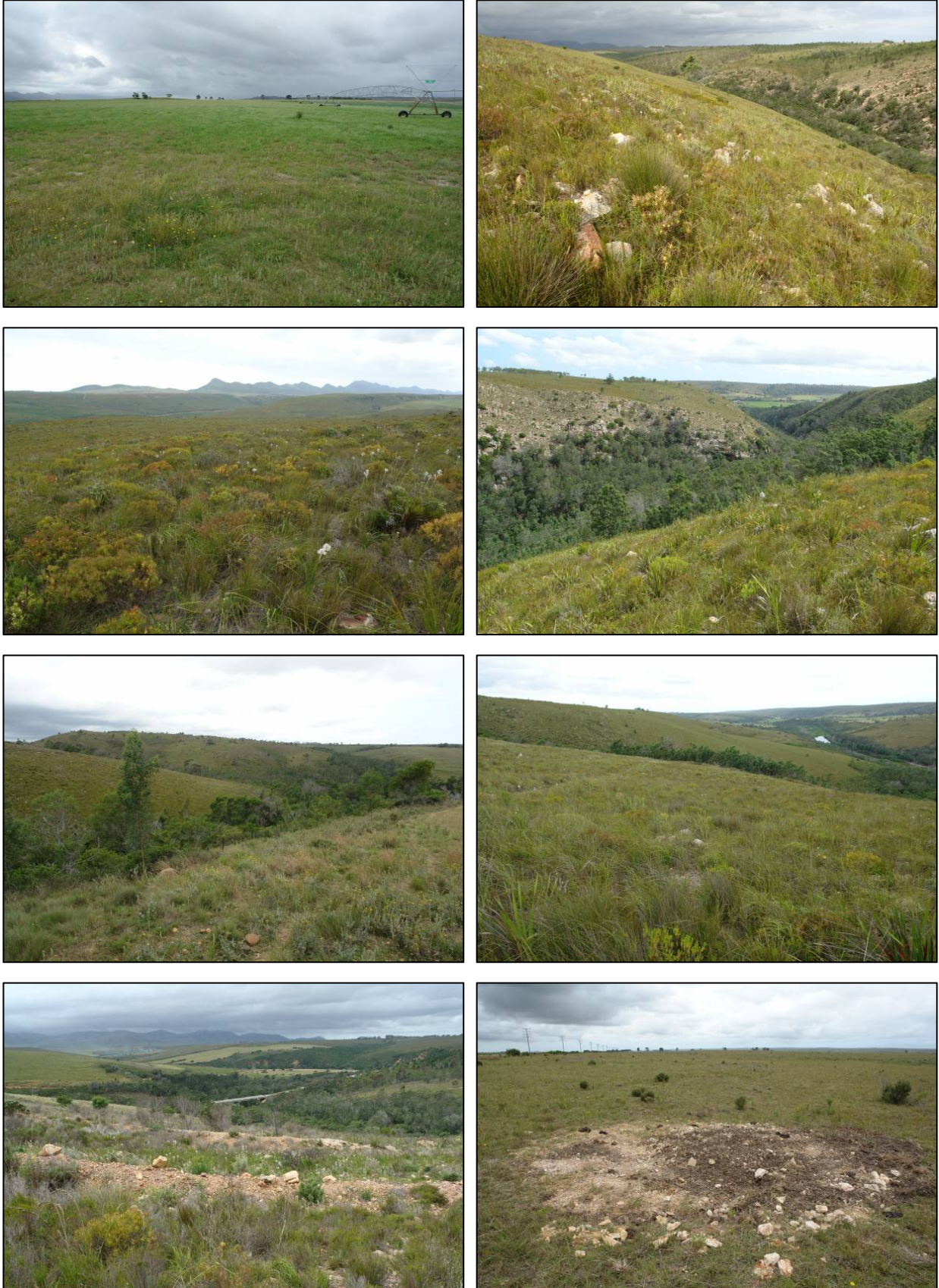
Earlier Stone Age (1,5 million – 250 000 years old) stone tools included hand axes, cleavers, cores, flaked cobbles and flakes manufactured from quartzite river cobbles. This is the largest exposed ESA site witnessed in the Eastern Cape. The Middle Stone Age stone tools which included points, blades and flakes, date between 250 000 and 30 000 years old. The flakes displayed typical Middle Stone Age faceted striking platforms and many flakes displayed utilization damage, although few were 'formally' retouched. Due to

the large scale disturbances all the stone tools were randomly distributed across the landscape in a secondary context. No other archaeological remains were associated with the stone tools scatters.

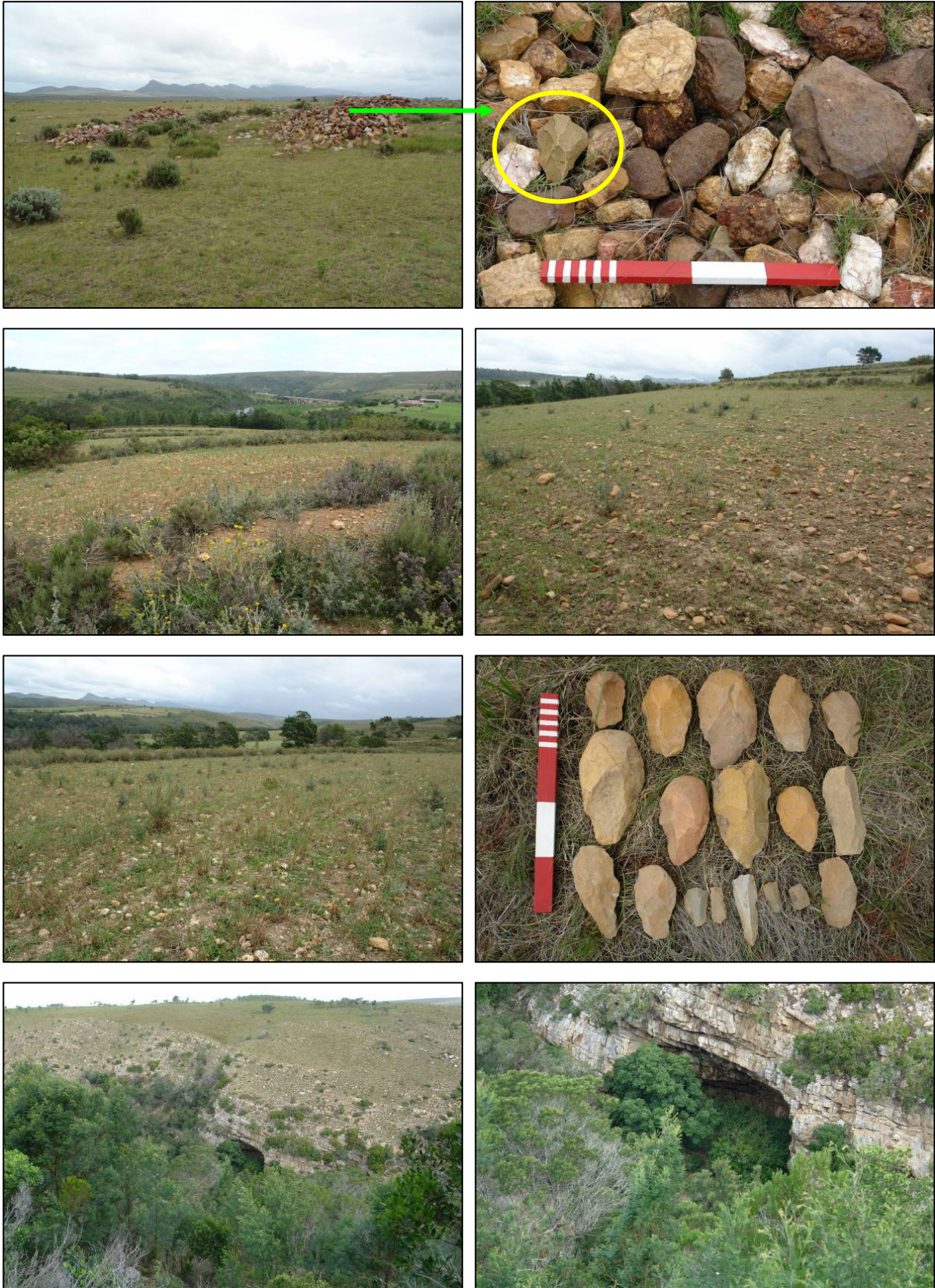
A large rock shelter was observed from the northern side of the Diep River valley. It is located near or at the bottom of the river on the adjacent property (Map 3 and 5). Due to the inaccessibility of the terrain the shelter was not visited and the archaeological status remains unknown (Figs 19-20).



Figs 1-4. Different views of the proposed location of the Deep River Wind Energy Facility. The relatively flat plateau is visible above the confluence of the Krom and Deep Rivers. The red arrow marks the location of the large Earlier and middle Stone Age site (top left). Note the flat plain and dense cover. The vertical red line marks the wind monitoring mast (bottom right).



Figs 5-12. General views of the proposed location of the Deep River Wind Energy Facility. Cultivated lands (top left), fynbos slopes, deep river valleys covered with alien trees, contour walls constructed on the steep slopes and evidence for a shallow top soil as revealed from a test pit.



Figs 13-20. Views of the large piles of stones with occasional stone tools (top row), ploughed terraces with thousands of Earlier and Middle Stone Age stone tools (middle two rows) and a large rock shelter in the Diep River valley (bottom row).

6. ASSESSMENT OF THE IMPACTS

Nature of the impacts

The proposed Deep River Wind Energy Facility site, proved to be of low archaeological sensitivity and no sites/remains of value were recorded. The main impacts to archaeological sites/remains will be the physical disturbance of the material and its context. The construction of the turbine foundations, substation, cabling between the turbines and access roads may expose and/or disturbed/destroy the sites/remains. However, the site for the development has been ploughed extensively in the past and therefore has already disturbed the remains that may have occurred there.

Extent of the impacts

Construction of the turbine foundations, substation, cabling between the turbines and access roads may impact on remains which are buried and not visible, but these impacts will be limited and restricted to the local area. Excavations for the turbine foundations will also have limited impact on possible buried remains because the top soil is shallow which do not allow for deep archaeological deposits.

Table 1. Assessment of the impacts

Nature: The potential impact of the construction of the turbines, substation, cabling between the turbines, access roads and workshop on above and below ground archaeology for the plateau area.		
	Without Mitigation	With Mitigation
Extent	Local (1)	Local (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Minor (2)	Minor (2)
Probability	Improbable (2)	Improbable (2)
Significance	Low < 30	Low < 30
Status (positive or negative)	Negative	Neutral
Reversibility	No	No
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation		
No mitigation is proposed for the plateau area as the archaeological remains (if any) are of low significance - excluding human remains.		
The ESA/MSA site is a "no go" area.		
If any human remains (or any other concentrations of archaeological heritage material) are exposed during construction, all work must cease and it must be reported immediately to the nearest museum/archaeologist or to the South African Heritage Resources Agency, so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to investigate and to remove/collect such material. Recommendations will follow from the investigation.		
Cumulative impacts: None.		
Residual impacts: None.		

7. CONCLUSIONS

The proposed Deep River Wind Energy Facility site, apart from the Earlier and Middle

Stone Age site near the confluence of the Krom and Diep Rivers, appears to be of low archaeological sensitivity. No archaeological remains of any heritage value were found on the flat plateau. The area has been intensively ploughed and it is therefore highly unlikely that any archaeological heritage remains of any value will be found *in situ* or of any contextual value. The impact of the development on archaeological sites/materials will be limited. However, there is always a possibility that human remains and/or other archaeological and historical material may be uncovered during the development. Should such material be exposed then it must be reported to the nearest museum, archaeologist or to the South African Heritage Resources Agency (see general remarks and conditions below). The Earlier Stone Age site is one of the largest witnessed in the Eastern Cape and is a “no go” area for development. The stone tools were exposed due to the extensive ploughing and the creation of contour walls. No stone tools were visible in the adjacent unploughed areas, but it is possible that stone tools may occur and be exposed if the surface soil is disturbed. No development should be considered within the general vicinity as to avoid any further disturbances and/or collection of the stone tools.

8. RECOMMENDATIONS

No information was available during the survey on the infrastructural development such as access roads, construction sites and offices. However, it is assumed that existing farm roads/tracks will be used and widened.

1. Extensive ploughing of the hill slope near the confluence of the Krom and Diep Rivers exposed thousands of Earlier and Middle Stone Age stone tools, but none were visible on the undisturbed adjacent land. It is possible that tool may occur on the hill slope, but will only be exposed when the top soil is disturbed. No development must take place near the visible site – “no go” area. If adjacent areas are considered for development, a professional archaeologist must be appointed to conduct a walk through and be on site to monitor the excavations when construction for roads and the turbine foundations begins.
2. In the unlikely event that any concentrations of archaeological material or human remains are uncovered during further development of the site, all work must immediately cease and be should reported to the Albany Museum and/or the South African Heritage Resources Agency so that systematic and professional investigation/excavations can be undertaken. Sufficient time should be allowed to remove/collect such material (See Appendix B for a list of possible archaeological sites that maybe found in the area).
3. Construction managers/foremen should be informed before the start of construction on the possible types of heritage sites and cultural material they may encounter and the correct procedures to follow when they encounter sites. It is suggested that one person be trained to be on site and report to the site manager when possible sites are encountered.

4. No development should be considered within the general vicinity of the Stone Age Site (identified in Map 5) as to avoid any further disturbances and/or collection of the stone tools.

9. GENERAL REMARKS AND CONDITIONS

Note: This report is for a Phase 1 archaeological heritage impact assessment only and does not include or exempt other required heritage impact assessments (see below).

The National Heritage Resources Act (Act No. 25 of 1999, section 35)(see Appendix A)requires a full Heritage Impact Assessment (HIA) in order that all heritage resources, that is, all places or objects of aesthetics, architectural, historic, scientific, social, spiritual linguistic or technological value or significance are protected. Thus any assessment should make provision for the protection of all these heritage components, including archaeology, shipwrecks, battlefields, graves, and structures older than 60 years, living heritage, historical settlements, landscapes, geological sites, palaeontological sites and objects

It must be emphasised that the conclusions and recommendations expressed in this archaeological heritage sensitivity investigation are based on the visibility of archaeological sites/material and may not therefore, reflect the true state of affairs. Many sites may be covered by soil and vegetation and will only be located once this has been removed. In the event of such finds being uncovered, (during any phase of construction work), archaeologists must be informed immediately so that they can investigate the importance of the sites and excavate or collect material before it is destroyed. The onus is on the developer to ensure that this agreement is honoured in accordance with the National Heritage Resources Act No. 25 of 1999 (NHRA).

It must also be clear that Phase1 Specialist Reports (AIAs) will be assessed by the relevant heritage resources authority. The final decision rests with the heritage resources authority, which should give a permit or a formal letter of permission for the destruction of any cultural sites.

REFERENCES

- Binneman, J.N.F. (1997). Results from a test excavation at The Havens Cave, Cambria, south-eastern Cape. *Southern African Field Archaeology* 6:93-105.
- Binneman, J.N.F. (1998). Results from a test excavation at Kleinpoort Shelter in the Baviaanskloof, Eastern Cape Province. *Southern African Field Archaeology* 7:90-97.
- Binneman, J.N.F. (1999a). Results from a test excavation at Groot Kommandokloof Shelter in the Baviaanskloof/Kouga region, Eastern Cape Province. *Southern African Field Archaeology* 8:100-107.
- Binneman, J.N.F. (1999b). Mummified human remains from the Kouga Mountains, Eastern Cape. *The Digging Stick* 16:1-2.
- Binneman, J.N.F. (2000). Results from two test excavations in the Baviaanskloof Mountains, Eastern Cape Province. *Southern African Field Archaeology* 9:81-92.

- Binneman, J.N.F. (2001). An introduction to a Later Stone Age coastal research project along the south-eastern Cape coast. *Southern African Field Archaeology* 10:75-87.
- Butzer, K.W. (1978). Sediment stratigraphy of the Middle Stone Age sequence at Klasies River Mouth, Tsitsikama Coast, South Africa. *South African Archaeological Bulletin* 33:141-151.
- Carrion, J.S., Brink, J.S., Scott, L. & Binneman, J.N.F. (2000). Palynology and palaeo-environment of Pleistocene coprolites from an open-air site at Oyster Bay, Eastern Cape coast. *South African Journal of Science* 96:449-453.
- Deacon, H.J. (1992). Southern Africa and modern human origins. *Philosophical Transactions of the Royal Society, London* 337: 177–83.
- Deacon, H.J. (1993). Southern Africa and modern human origins. In: Aitken, M. J., Stringer, C. B. & Mellars, P. A., eds, *The origin of modern humans and impact of chronometric dating*. Princeton: Princeton University Press, pp. 104–17.
- Deacon, H.J. (2001). Modern human emergence: an African archaeological perspective. In: Tobias, P. V., Raath, M. A., Moggi-Cecchi, J. & Doyle, G. A., eds, *Humanity from African Renaissance to coming Millennia*. Johannesburg: University of the Witwatersrand Press, pp. 213–22.
- Deacon, H.J. & Geleijnse, V. (1988). The stratigraphy and sedimentology of the Main Site sequence at Klasies River, South Africa. *South African Archaeological Bulletin* 43:5-14.
- Deacon, H. J & Shuurman, R. (1992). The origins of modern people: the evidence from Klasies River. In: Bräuer, G. & Smith, F. H., eds, *Continuity or replacement: controversies in Homo sapiens evolution*. Rotterdam: Balkema, pp. 121–9.
- Deacon, H. J. & Wurz, S. (1996). Klasies River Main Site, Cave 2: a Howiesons Poort occurrence. In: Pwiti, G. & Soper, R., eds, *Aspects of African Archaeology*. Harare: University of Zimbabwe Publications, pp. 213–8.
- Deacon, H.J. & Deacon, J. (1999). *Human beginnings in South Africa: uncovering the secrets of the Stone Age*. Cape Town: David Phillips Publishers.
- Klein, R.G. (1976). The mammalian fauna from the Klasies River Mouth sites, southern Cape Province, South Africa. *South African Archaeological Bulletin* 3:75-98.
- Laidler, P.W. (1947). The evolution of Middle Palaeolithic technique at Geelhoutboom, near Kareedouw, in the southern Cape. *Transactions of the Royal Society of South Africa*
- Rightmire, G.P. & Deacon, H.J. (1991). Comparative studies of Late Pleistocene human remains from Klasies River Mouth, South Africa. *Journal of Human Evolution* 20:131-156.
- Singer, R. & Wymer, J. (1982). *The Middle Stone Age at Klasies River Mouth in South Africa*. Chicago: University of Chicago Press.
- Wurz, S. (1999). The Howiesons Poort backed artefacts from Klasies River: an argument for symbolic behaviour. *South African Archaeological Bulletin* 54: 38–50.

Museum/University databases and collections

The Albany Museum in Grahamstown houses collections and information from the wider region.

Relevant impact assessments

None in the immediate area

APPENDIX A: brief legislative requirements

Parts of sections 35(4), 36(3) and 38(1) (8) of the National Heritage Resources Act 25 of 1999 apply:

Archaeology, palaeontology and meteorites

35 (4) No person may, without a permit issued by the responsible heritage resources authority—

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;*
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;*
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.*

Burial grounds and graves

36. (3) (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority—

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*
- (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or*
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.*

Heritage resources management

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorized as –

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
- (b) the construction of a bridge or similar structure exceeding 50m in length;*
- (c) any development or other activity which will change the character of the site –*

- (i) exceeding 5000m² in extent, or*
- (ii) involving three or more erven or subdivisions thereof; or*
- (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or*
- (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA, or a provincial resources authority;*
- (d) the re-zoning of a site exceeding 10 000m² in extent; or*
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must as the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*

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

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 the remains are buried in a flexed position on their sides, but are also found buried in a sitting position with a flat stone capping and developers are requested to be on the alert for this.

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

Fossil bone

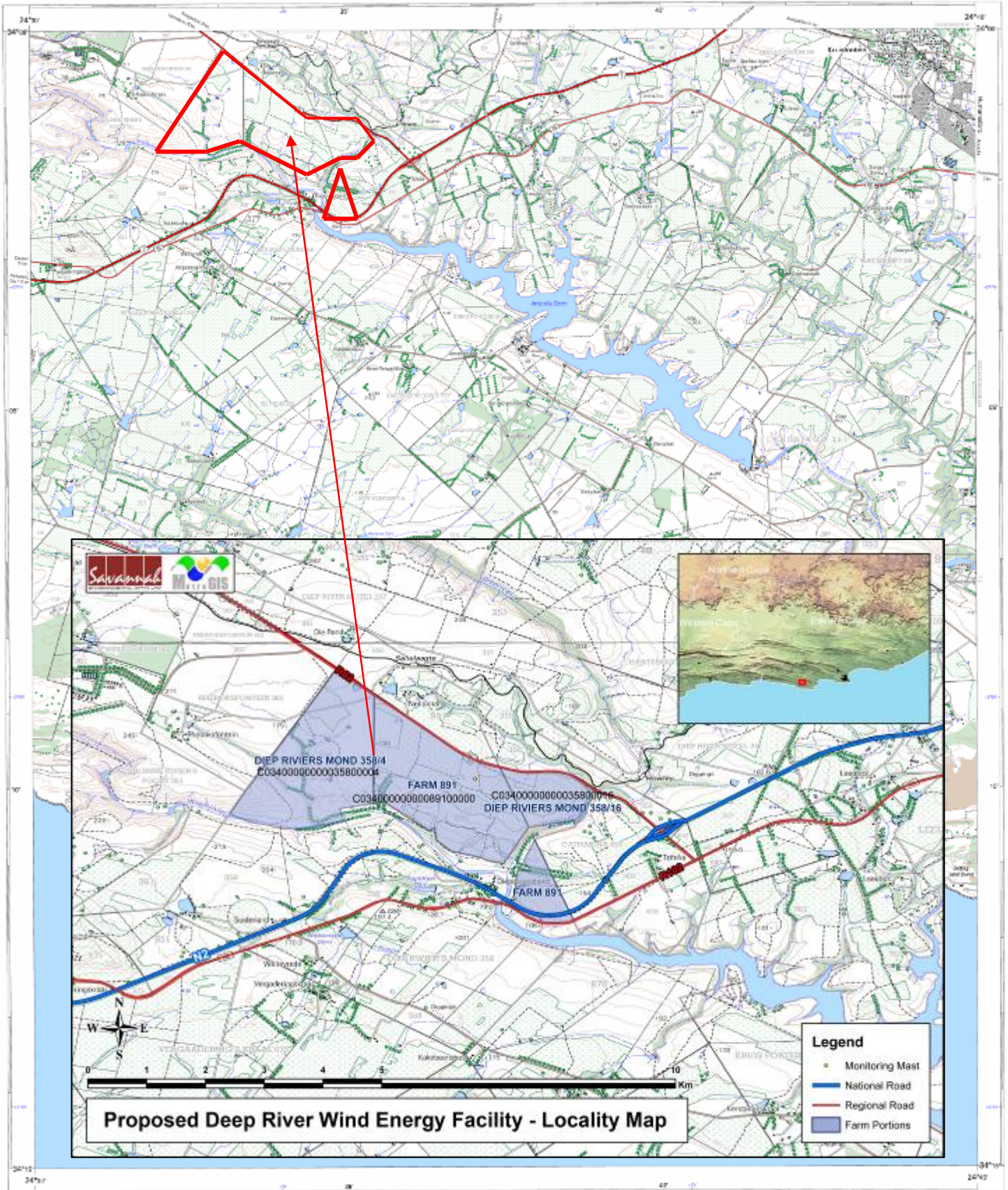
Fossil bones may be found embedded in geological deposits. Any concentrations of bones, whether fossilized or not, should be reported.

Large stone features

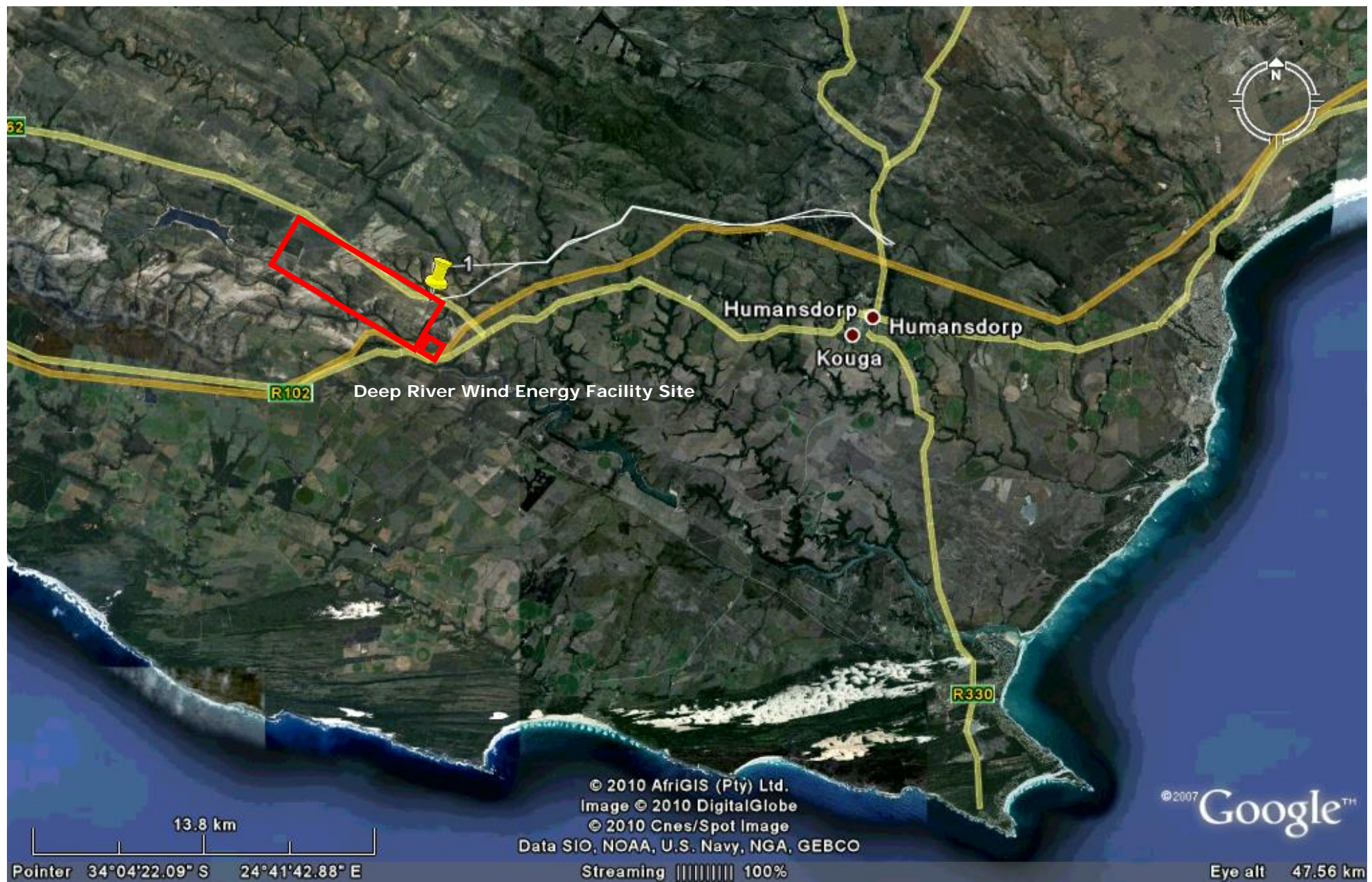
They come in different forms and sizes, but are easy to identify. The most common are roughly circular stone walls (mostly collapsed) and may represent stock enclosures, remains of wind breaks or cooking shelters. Others consist of large piles of stones of different sizes and heights and are known as *isisivane*. They are usually near river and mountain crossings. Their purpose and meaning is not fully understood, however, some are thought to represent burial cairns while others may have symbolic value.

Historical artefacts or features

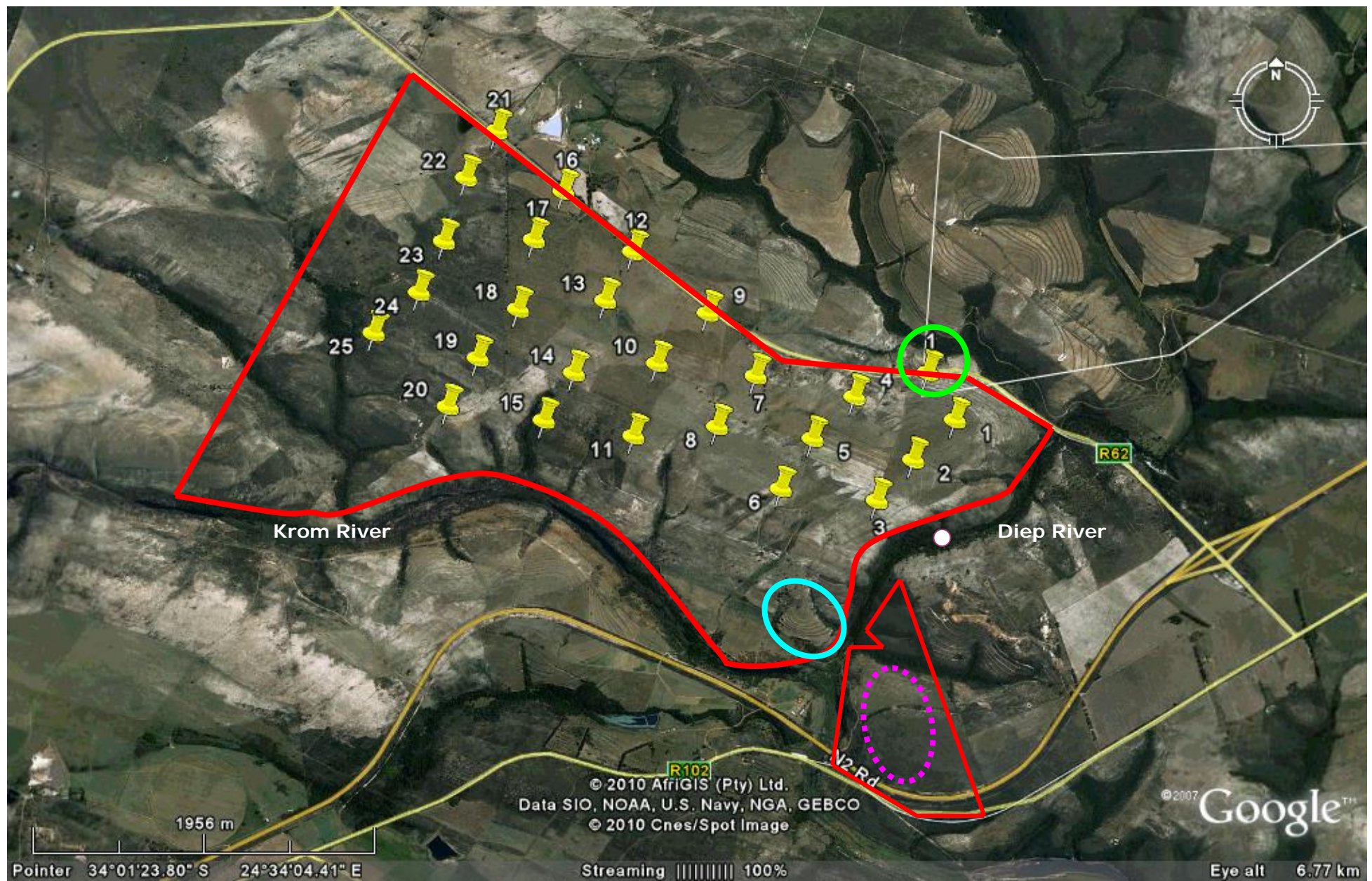
These are easy to identified and include foundations of buildings or other construction features and items from domestic and military activities.



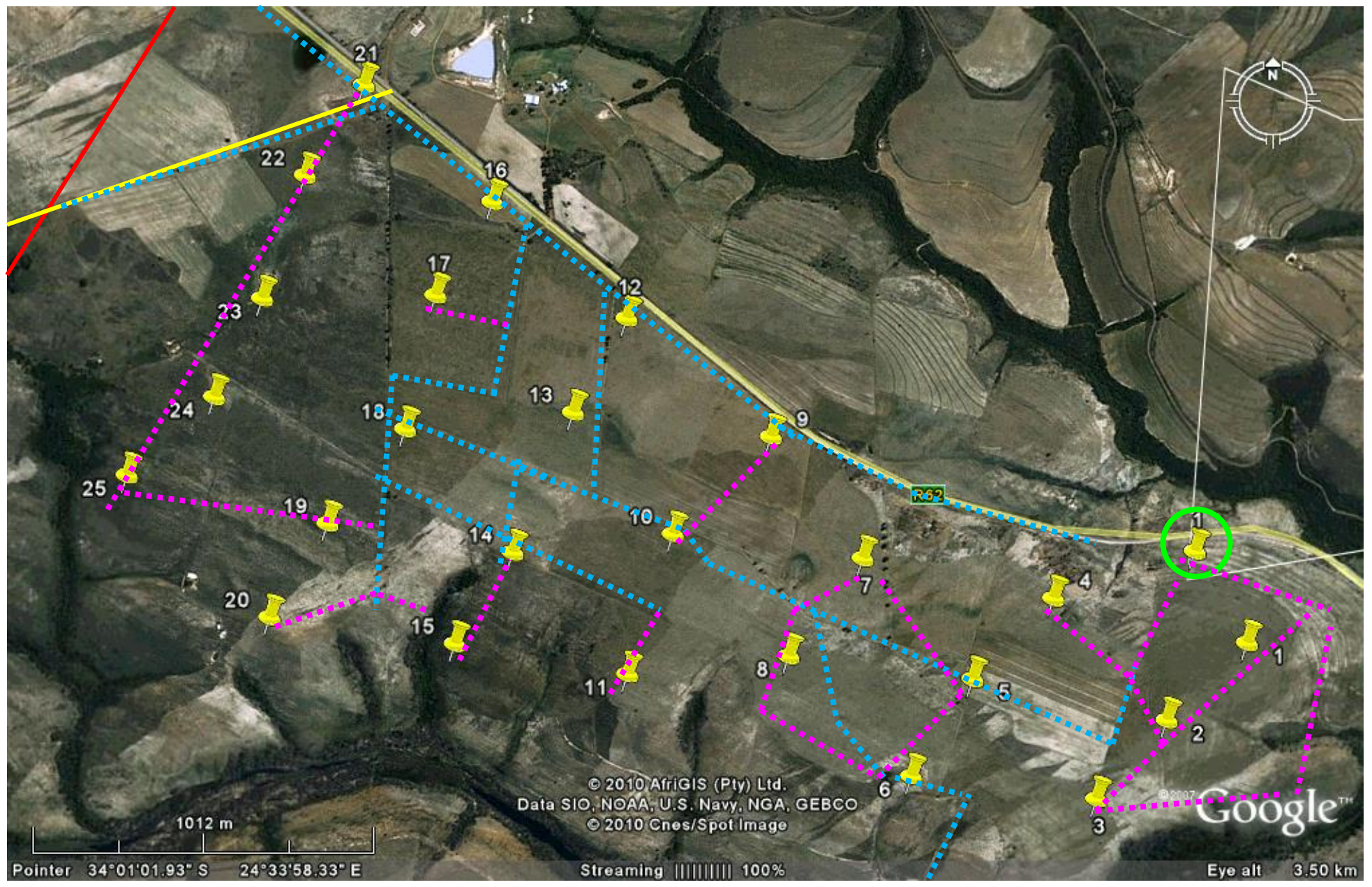
Map 1. 1:50 000 maps indicating the location of the proposed Deep River Wind Energy Facility. The red lines outline the approximate size of the site (insert map, courtesy of Savannah (Pty) Ltd).



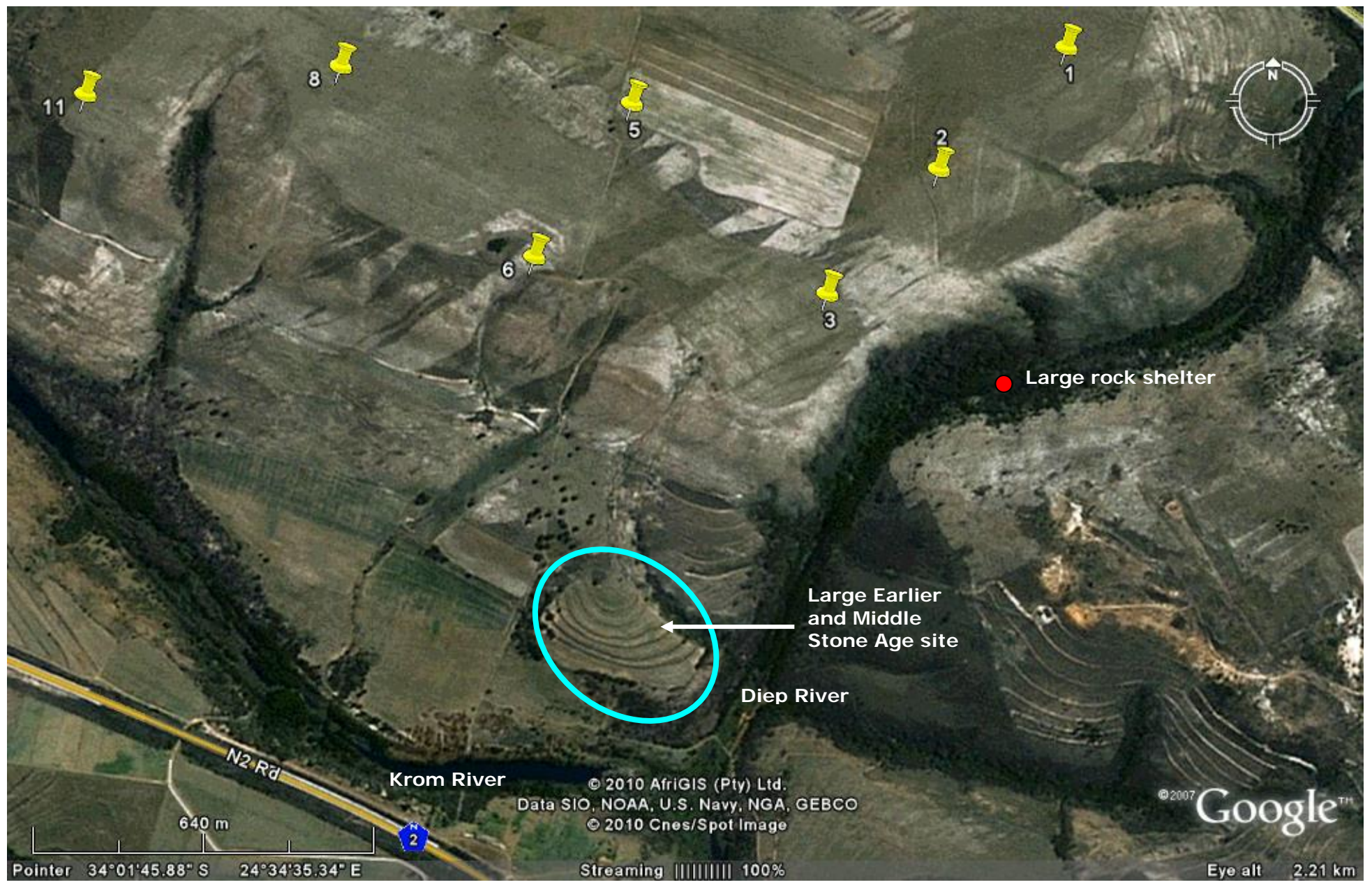
Map 2. Aerial image of the location of the proposed Deep River Wind Energy Facility near Humansdorp (red rectangle), substation (yellow peg) and suggested power line routes to the Humansdorp substation (white lines). Base map, courtesy of Savannah Environmental (Pty) Ltd.



Map 3. Aerial image of the location of the proposed Deep River Wind Energy Facility (outline in red), substation (green circle) power lines running towards the Humansdorp (white lines), turbine positions (yellow pegs), a major archaeological site blue circle) and a large rock shelter (white dot). The pink stippled circle marks the survey area. Base map courtesy of Savannah Environmental (Pty) Ltd.



Map 4. Aerial image of the location of the turbine positions (yellow pegs, courtesy of Savannah Environmental (Pty) Ltd) and the substation (green circle). The survey routes and spot checks from a vehicle are marked by the blue stippled lines and the on foot survey routes by the pink stippled lines.



Map 5. Aerial image of the location of the Earlier and Middle Stone Age site near the confluence of the Krom and Diep Rivers (blue circle) and the rock shelter (red dot).