POWER LINE LINKING THE PROPOSED TSITSIKAMMA COMMUNITY WIND ENERGY FACILITY TO THE PROPOSED EXTENSION OF THE EXISTING DIEP RIVER SUBSTATION IN THE TSITSIKAMMA AREA, EASTERN CAPE PROVINCE

DEA ref: 14/12/16/3/3/1/699

MOTIVATION FOR AMENDMENT OF ENVIRONMENTAL AUTHORISATION – DRAFT FOR REVIEW BY REGISTERED I&APS

JANUARY 2014

Prepared for:

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1. INTRODUCTION

The Tsitsikamma Community Wind Farm (TCWF) was awarded preferred bidder status in May 2012. Eskom Holdings SOC Limited obtained an authorisation for the construction of a power line linking the Tsitsikamma Community Wind Farm and the extension of the existing Diep River Substation in the Eastern Cape Province (DEA Ref No: 14/12/16/3/3/1/699) in March 2013 (amended in August 2013).

Eskom is in the process of securing all the power line servitudes for the implementation of the project. During the servitude negotiation process some difficulties were experienced in securing the necessary rights along the authorised power line route. In order to address landowner concerns which have been raised, Eskom require a deviation of a portion of the authorised power line alignment (refer to maps contained in Appendix A)

In terms of Condition 6 of the Environmental Authorisation and Regulation 39 (1) of the EIA Regulations, it is possible for an applicant to apply, in writing, to the competent authority for a change or deviation from the project description to be approved. In this regard, application for amendment is proposed to be made to the DEA for the proposed power line deviation. As this is considered to be a substantive amendment which may affect additional interested and affected parties, Savannah Environmental has prepared this motivation in support of this request/application on behalf of the applicant, and provides some detail pertaining to the significance and impacts of the proposed change to the project description in order for the competent authority to be able to reach a decision. This motivation document is being made available to registered interested and affected parties for review and comment for a 30-day period, i.e. from **06 January – 06 February 2014**.

Please submit your comments to
Shawn Johnston of Sustainable Futures ZA **PO Box 749, Rondebosch, Cape Town, 7701** Tel: 083 325 9965 Fax: 086 510 2537 E-mail: swjohnston@mweb.co.za
The due date for comments on the motivational document is 06 February 2014

2. MOTIVATION FOR PROPOSED AMENDMENTS

The Tsitsikamma Community Wind Farm (TCWF) was awarded preferred bidder status in May 2012. Eskom is in the process of securing all the power line servitudes for the implementation of the project. During the servitude negotiation process some difficulties were experienced in securing the necessary rights along the authorised power line route. In order to address landowner concerns which have been raised, Eskom require a deviation of a portion of the authorised power line alignment (refer to maps contained in Appendix A).

The realignment of the section of the power line route will not result in any additional environmental impacts to those identified within the Basic Assessment undertaken for the power line. This is confirmed by specialist input in terms of avifauna, ecology, heritage and visual issues, as detailed in Appendix B.

The proposed alternative power line route will impact directly and indirectly on landowners not affected by the authorised power line alignment. As such, it is considered that this application would be a substantive amendment to the Authorisation.

3. CONCLUSIONS

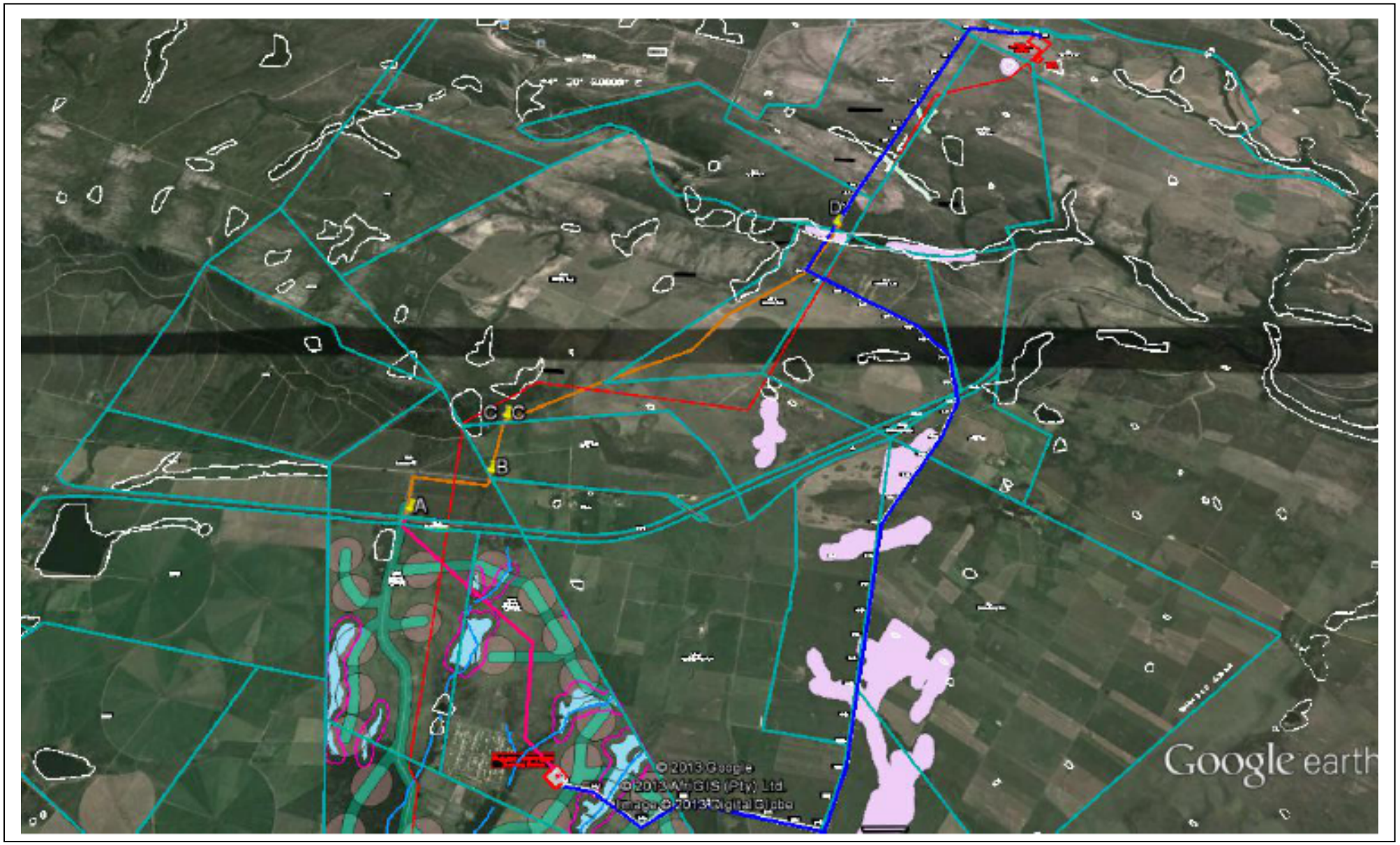
Based on the above, it is concluded that the environmental impact associated with the proposed amendment will not be substantively different to those presented in the EIA. On the basis of the above motivation, the applicant requests that the requested amendments be made to the Environmental Authorisation for the project.

4. LIST OF APPENDICES

The following Appendices are attached in support of the motivation for amendment:

Appendix A: Proposed realignment of the TCWF-Diep River power line
Appendix B: Specialist inputs regarding the realignment of the power line

APPENDIX A:
PROPOSED REALIGNMENT OF THE TCWF-DIEP RIVER POWER LINE



Map 1. Aerial view of the layout of the original proposed powerline from the TCWEF to the proposed extension of the Dieprivier substation (blue line) and the revised/alternative powerline (pink and orange lines) (map courtesy the developers).

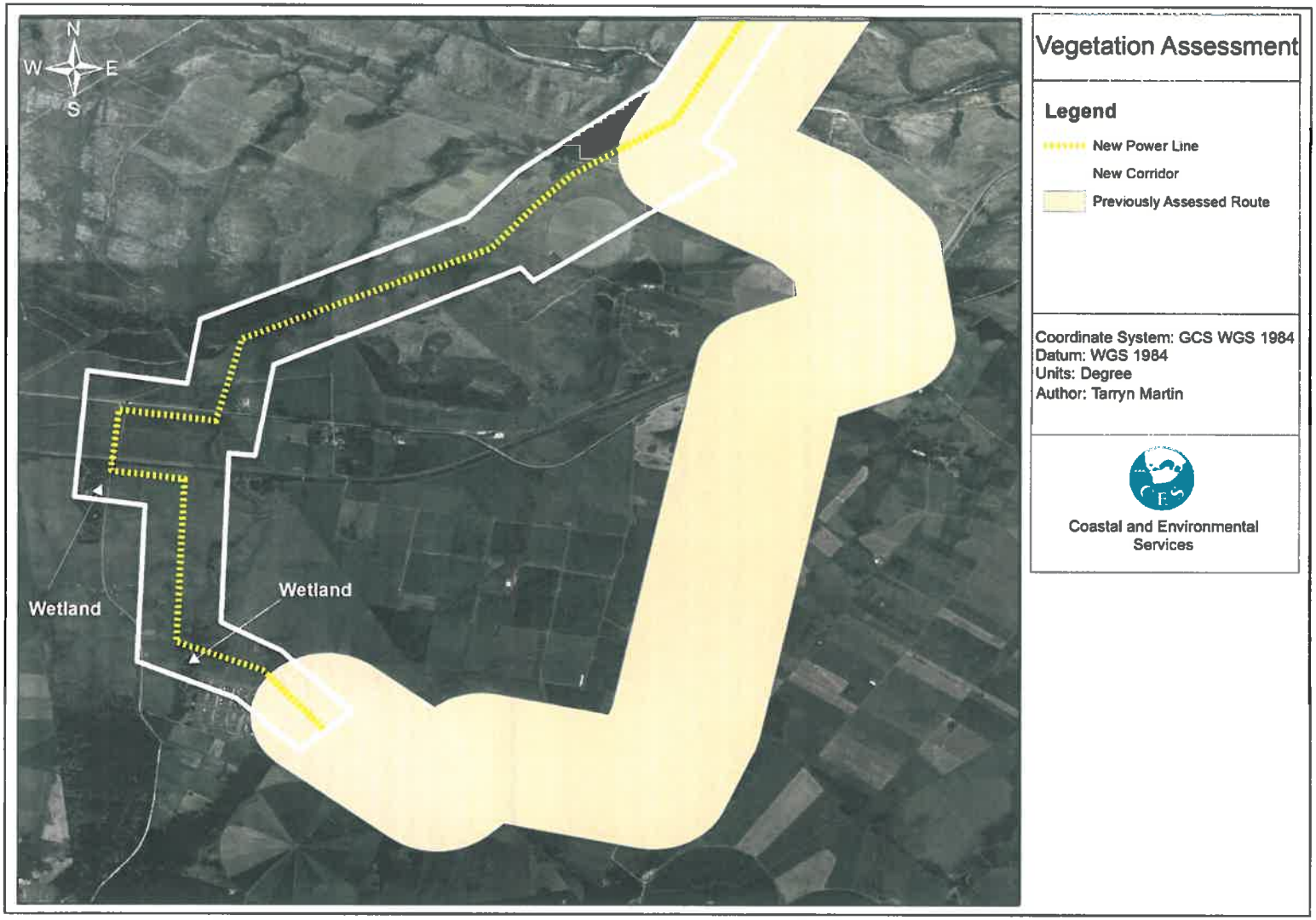


Figure 2: Map indicating the previously assessed corridor (cream), the new corridor (white) and the underlying vegetation of the new corridor that was not previously assessed.

APPENDIX B:
SPECIALIST INPUTS REGARDING THE REALIGNMENT OF THE POWER LINE

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29 November 2013

To: Eskom Holdings SOC Limited

Ecological Specialist Opinion Letter for the rerouting of the Tsitsikamma Power Line

The proposed Tsitsikamma Power Line Route was originally surveyed in October 2012. A portion of this route has subsequently been rerouted to the west of this surveyed area. Consequently, a desktop analysis has been conducted of the new route and is based on aerial imagery, spatial planning tools and knowledge of the area obtained during the site visit in 2012. This letter provides comment on the portion of the new route that falls outside of the previously assessed area (Figure 1). The northern section of the power line that falls within the area surveyed during the 2012 visit has been discussed in detail in the ecological report and is therefore not included in this assessment.

Figure 1 illustrates that the power line crosses areas designated by the Eastern Cape Biodiversity Conservation Plan (ECBCP) as critical biodiversity areas (CBA) 1 and 2. However the site visit conducted in 2012 and the subsequent analysis of the aerial imagery, indicates that these areas have been transformed into agricultural land and are therefore considered to be degraded from an ecological perspective (Figure 2). With the exception of two very small wetlands (indicated in Figure 2), this entire corridor can be considered an area of low sensitivity. The new power line route does not cross any protected areas, threatened ecosystems or areas delineated by the national protected area expansion strategy (NPAES) (Figure 1).

It is advised that care is taken to avoid negatively impacting the two small wetlands in the corridor. For example, pylons should be located at least 32m from these sensitive areas.

It is my opinion that this new route will have a minimal impact on the flora and fauna of the area, provided mitigation measures proposed in the ecological report are adhered to. This opinion is based on information obtained during the ecological specialist survey in 2012, which identified the area as agricultural land.

Please don’t hesitate to contact me should you have any further queries or require additional clarification.

Kind regards

Ms Tarryn Martin
Environmental Consultant and Ecological Specialist
Coastal & Environmental Services

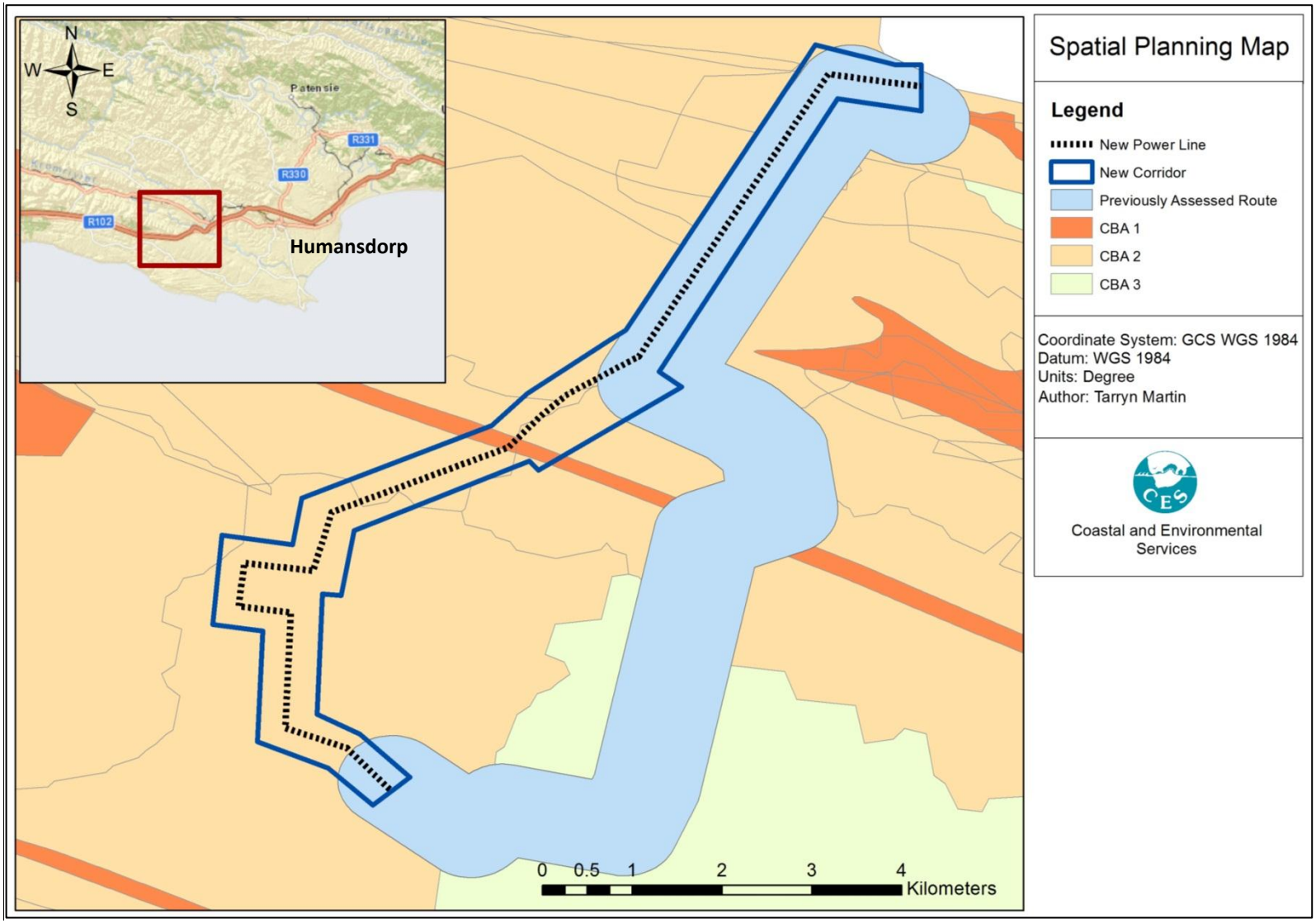

Figure 1: Spatial Planning Map indicating the previously assessed corridor (light blue), the new corridor (dark blue) in relation to critical biodiversity areas, protected areas and national protected area expansion strategy (NPAES) areas.

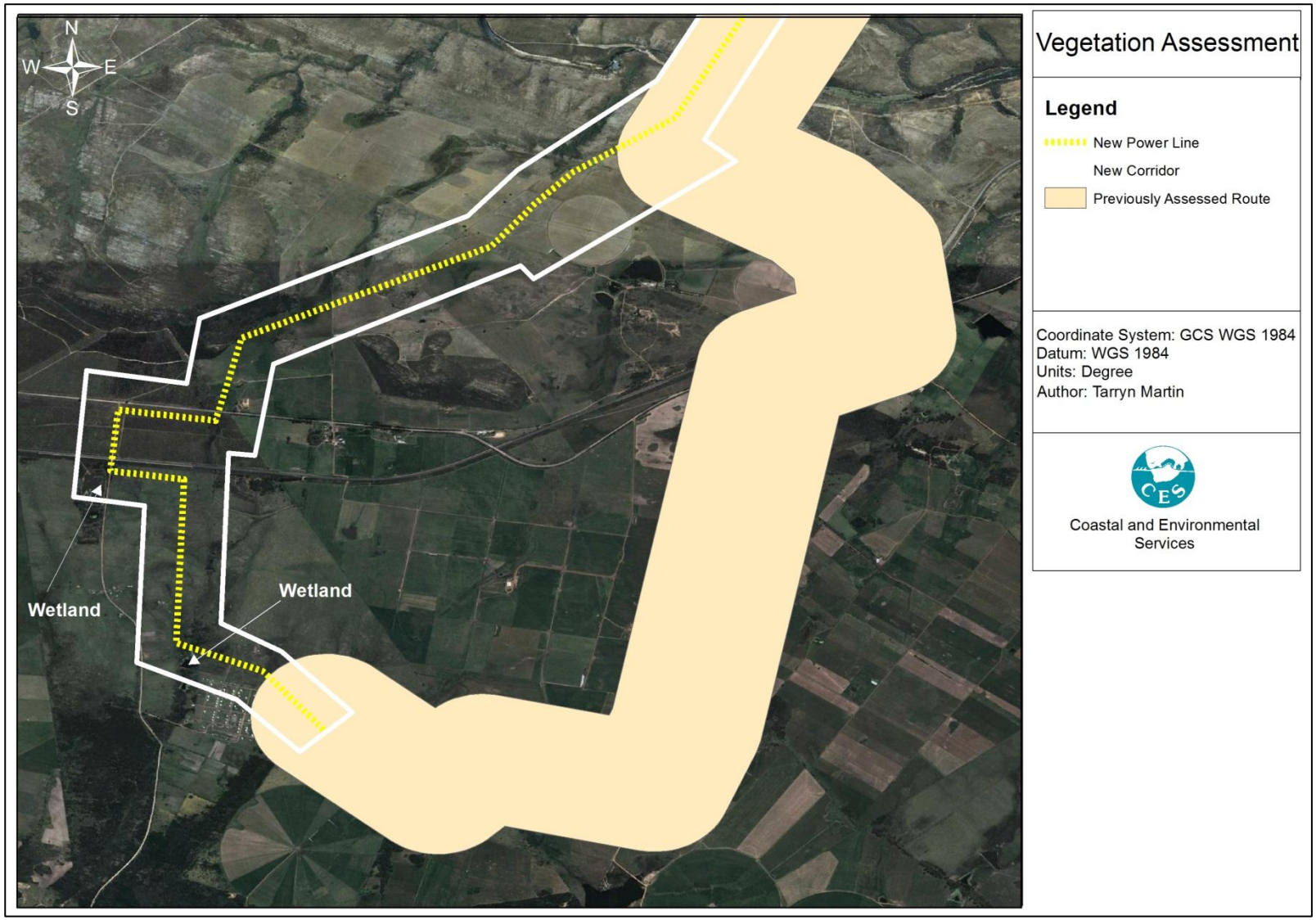

Figure 2: Map indicating the previously assessed corridor (cream), the new corridor (white) and the underlying vegetation of the new corridor that was not previously assessed.

Feathers Environmental Services
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Eskom Holdings SOC Limited
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27 November 2013

Tsitsikama Community Wind Farm 132kV Power Line
Brief desktop assessment of the avifaunal impacts associated with the proposed Tsitsikama Community Wind Energy Facility 132kV alternative power line alignment

1. Background

Negative interactions between wildlife and electricity structures take many forms, but two common problems in southern Africa are electrocution of birds (and other animals) on pole tops/pylons and bird collisions with the overhead power line conductors (Ledger & Annegarn 1981; Ledger 1983; Ledger 1984; Hobbs & Ledger 1986a; Hobbs & Ledger 1986b; Ledger, Hobbs & Smith, 1992; Verdoorn 1996; Kruger & Van Rooyen 1998; Van Rooyen 1998; Kruger 1999; Van Rooyen 1999; Van Rooyen 2000). Other impacts include disturbance and habitat destruction during construction and maintenance activities and electrical faults caused by bird excreta when roosting or breeding on electricity infrastructure (Van Rooyen & Taylor 1999).

Eskom Holdings SOC Limited proposes to construct a substation and 132kV power line to transmit electricity generated by the proposed Tsitsikama Wind Energy Facility (located approximately 20 km south-west of Humansdorp, Eastern Cape Province) into the existing Eskom Diep River Substation. A single power line route alignment was assessed in October 2012 as part of the Basic Assessment Report (BAR) compiled by Savannah Environmental Pty (Ltd). Due to unforeseen circumstances this power line alignment is no longer suitable and an alternative alignment has been proposed. The new portion of the proposed alignment in approximately 8km in length and is located between 3km and 5km west of the previously assessed alignment.

Savannah Environmental Pty (Ltd) is currently compiling an amendment application for the proposed Tsitsikama Communtity Wind Energy Facility 132KV alternative power line alignment. Feathers Environmental Services was appointed to conduct a **brief desktop** assessment and provide professional recommendations with regards to the risk and potential impacts associated with the new alignment on the avifaunal community.

Megan has been involved in conservation for 15 years and holds a BSc in Environmental Management. She has seven years experience in the field of bird interactions with electrical infrastructure. In various roles (including Programme Manager) with the Endangered Wildlife Trust's Wildlife & Energy Programme and the Programme's primary project (Eskom-EWT Partnership) from 2006 to 2013, Megan was responsible for assisting the energy industry and the national utility in minimising the negative impacts (associated with electrical infrastructure) on wildlife through the provision of strategic guidance, risk and impact assessments, training and research. A full CV is available on request.

2. Description Of The Affected Environment

Although a small proportion of the alternative alignment is located within an adjacent quarter degree square (3424AB) and pentad (3400_2425), the dominant vegetation types in the study area are the same as the vegetation types described for the original alignment in the avifaunal specialist report (Jenkins, 2012) i.e. **Tsitsikamma Sandstone Fynbos** in places and patches of **Humansdorp Shale Renosterveld** (Mucina & Rutherford 2006). Similarly, the micro habitats (formed by a combination of factors such as vegetation, land use, and others) prevalent along the alternative route alignment are the same as those described in the aforementioned avifaunal specialist report i.e. cultivated fields and pastures, thicket, forest areas associated with the deeper watercourses and artificial dams and wetlands. A variety of micro habitats, like these described above, increases the density and diversity of avifaunal community thereby increasing the risk of interaction with the proposed infrastructure.

3. Bird Presence In The Study Area

A reasonable diversity of species has been recorded in the study area, with approximately 200 species occurring regularly in the study area and its surrounds (Harrison *et al*, 1997). Notable species of conservation concern (Barnes, 2000) and those most likely to be negatively affected by the proposed project include Denham's Bustard *Neotis denhami,* Blue Crane *Anthropoides paradiseus,* Secretarybird *Sagittarius serpentarius* White-bellied Korhaan *Eupodotis senegalensis,* White Stork *Ciconia ciconia,* Black Harrier *Circus maurus* , African Marsh Harrier *Circus ranivorus,* Martial Eagle *Polemaetus bellicosus,* Lanner Falcon *Falco biarmicus,* Peregrine Falcon *Falco peregrines,* Black-winged Lapwing *Vanellus melanopterus,* Knysna Woodpecker *Campethera notate,* Knysna Warbler *Bradypterus sylvaticus,* Half-collared Kingfisher *Alcedo semitorquata* and various non-Red list wetland species commuting to and from resource areas.

4. Anticipated Impacts Associated With The Proposed Project

a) Collision with the overhead power line conductors – this is impact is rated to be of medium to high significance. This rating is based on the presence of large terrestrial and water dependent species and the habitat through with this alternative power line will traverse.
b) Electrocutions – the significance of this impact is rated to be medium.
c) Disturbance – Likely to impact all birds in the area to some degree, with sensitive, sedentary and habitat specific species being most vulnerable to this impact. The significance of this impact is rated at medium.

5. Conclusion and Recommendations

It is this author's opinion that the habitat through which the new alignment will traverse and the resultant suite of species recorded in the study area are, for the most part, identical to those described in the avifaunal

specialist report for the original route alignment. Therefore the findings and recommendations contained within the avifaunal component of the BAR can be applied to the new route alignment. It is believed that the potential negative impacts associated with the construction and operation of the power line along the newly proposed alignment can be reduced to acceptable levels with the implementation of the required mitigation measures.

The mitigation measures proposed below should be read and implemented in conjunction with the recommendations provided in the avifaunal component of the BAR:

a) An avifaunal specialist must be appointed for the walk down phase of the project (prior to construction) to conduct an assessment of the final route alignment and to provide site specific mitigation recommendations.

b) Since power line routing is the most effective means of collision mitigation, in areas where the alternative alignment is located in close proximity to water it is highly recommended that the proposed alignment be pegged at least 500m from the water source to minimise the collision risk.

c) Due to the habitat types and presence of large terrestrial species, extensive sections of power line will need to be marked (10m spacing) with an industry approved bird flight diverter. Note that current understanding of power line collision risk in birds precludes any guarantee of successfully distinguishing high risk from medium or low risk sections of a new line (Jenkins *et al.* 2010). The relatively low cost of marking the entire length of a new line during construction, especially quite a short length of line in an area frequented by collision prone birds, more than offsets the risk of not marking the correct sections, causing unnecessary mortality of birds, and then incurring the much greater cost of retro-fitting the line post-construction.

d) Clearance distances between the live conductors must be a minimum of 1.8m to accommodate large perching eagles. If the steel monopole is to be used, the structure must be fitted with the standard bird perch.

e) Environmental best practice must be enforced during construction and maintenance activities. This means that all activities should be designed to ensure as little impact on habitat as possible. For example, all existing roads must be used wherever possible, sensitive habitats must be avoided with machinery and vehicles, and labour teams must be strictly managed. Equipment batching plants must also be situated away from sensitive areas, preferably in habitats that are already impacted on. More detailed recommendations will be provided in the site specific EMP emanating from the walk down phase of the project.

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3 December 2013

ESKOM HOLDINGS SOC LIMITED

PROPOSED TSITSIKAMMA COMMUNITY WIND ENERGY FACILITY: EASTERN CAPE PROVINCE

AMENDMENT TO OVERHEAD POWER LINE ALIGNMENT

Dear Sir/Madam

Eskom Holdings SOC Limited wishes to amend the alignment of their overhead power line traversing between the Tsitsikamma Community Wind Energy Facility and the Dieprivier substation.

The amended alignment does not deviate considerably from the alignment (power line Option A) proposed during the Environmental Impact Assessment phase of the project. The proposed amended alignment is expected to have a negligible influence on the potential visual exposure of the power line structures as calculated during the Visual Impact Assessment.

It is therefore **not expected to significantly alter** the influence of the power line infrastructure on *areas of higher viewer incidence* (observers traveling along national, arterial/main or major secondary roads within the region) or *potential sensitive visual receptors* (residents of homesteads in close proximity to the proposed power line).

The proposed amended alignment is consequently not expected to significantly influence the anticipated visual impact, as stated in the original VIA report (August 2011).

Kind regards.

LM du Plessis (PrGISc)

Director: MetroGIS (Pty) Ltd.

ORIGINAL STUDY: A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE PROPOSED 132KV POWERLINE LINKING THE TSITSIKAMMA COMMUNITY WIND ENERGY FACILITY TO THE PROPOSED EXTENSION OF THE DIEPRIVIER SUBSTATION, KOUGA LOCAL MUNICIPALITY, HUMANSDORP DISTRICT, EASTERN CAPE PROVINCE

AMENDED STUDY: A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE REVISED 132KV POWERLINE LINKING THE TSITSIKAMMA COMMUNITY WIND ENERGY FACILITY TO THE PROPOSED EXTENSION OF THE DIEPRIVIER SUBSTATION, KOUGA LOCAL MUNICIPALITY, HUMANSDORP DISTRICT, EASTERN CAPE PROVINCE

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Date: December 2013

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AMENDED STUDY: A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE REVISED 132KV POWERLINE LINKING THE TSITSIKAMMA COMMUNITY WIND ENERGY FACILITY TO THE PROPOSED EXTENSION OF THE DIEPRIVIER SUBSTATION, KOUGA LOCAL MUNICIPALITY, HUMANSDORP DISTRICT, EASTERN CAPE PROVINCE

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SUMMARY

Apart from occasional Earlier and Middle Stone Age stone tools observed in areas adjacent to the proposed revised/alternative powerline route where the sub-surface ferricrete land floors were exposed by erosion or in vehicle tracks, no other significant archaeological or historical sites/materials were located. The revised powerline route is of low archaeological sensitivity and construction may proceed as planned.

BACKGROUND

During October 2012 a complete phase 1 archaeological impact assessment was conducted for the proposed 132kv powerline linking the Tsitsikamma Community Wind Energy Facility (TCWEF) to the proposed extension of the Dieprivier substation. A comprehensive archaeological impact assessment report and recommendations have been compiled for Savannah Environmental (Pty) Ltd and must be consulted for the background information of the project and the study area, because it will not be repeated here in any detail (see Binneman 2012).

The original proposed powerline started at the TCWEF substation from where it ran in an easterly direction before it turned in a north-easterly direction and crossed the Krom River towards the Dieprivier substation (dark blue line, map 1). No significant archaeological or historical heritage sites/materials were observed on the direct powerline route during the investigations (Binneman 2012).

During December 2013 a revised/alternative powerline route was investigated, running from the TCWEF substation in a north, north-westerly direction before it turned in a north-easterly direction towards the Dieprivier substation and joins the original surveyed route west of the Krom River (orange line, map 1). This report discusses the results from this revised 132kV powerline route survey.

PROJECT INFORMATION

Eastern Cape Heritage Consultants cc was appointed by Savannah Environmental (Pty) Ltd on behalf of Eskom Holdings SOC Limited to conduct a Phase 1 Archaeological Impact Assessment (AIA) for the proposed revised/alternative 132kV powerline linking the Tsitsikamma Community Wind Energy Facility and associated infrastructure at Wittekleibosch near Humansdorp to the proposed extension of the Dieprivier substation (orange line, map 1). The powerline runs from the proposed Tsitsikamma Community

Wind Energy Facility substation, which is situated approximately 30 km west of Humansdorp in the Wittekleibosch area, to the proposed extension of the Dieprivier substation some 8 km north-east of the wind farm. The revised powerline is approximately 7 km in length (of which about 4,5 kilometres were investigated) and runs over a number of farms used mainly for grazing and general farming activities and include the following properties (only the ones investigated):

Farm 675/4
Farm 361/5
Farm 358/1

Most of the powerline route runs over land which has been ploughed extensively in the past and now covered by dense grass used for grazing. The survey was conducted to establish the range and importance of possible 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.

ARCHAEOLOGICAL INVESTIGATION

Methodology

The proposed revised 132kV powerline route from the proposed Tsitsikamma Community Wind Energy Facility to the proposed extension of the Dieprivier substation was investigated by two people on foot and from a vehicle. Only the route from the N2 National Road to the area where the revised route joins the original surveyed route near the Krom River was investigated. The route over the Tsitsikamma Community Wind Energy Facility site towards the N2 National Road was investigated previously. The entire revised powerline route could be reached via access tracks and was investigated on foot in the different directions. All the landowners were contacted prior to the survey to inform them about the visit and to gain access to their land. GPS readings were taken with a Garmin and all important features were digitally recorded. Consultation with the Gamtkwa KhoiSan Council was conducted as required by the National Heritage Resources Act No. 25 of 1999, Section 38(3e). They will communicate their recommendations to Savannah Environmental (Pty) Ltd and/or Eskom Holdings SOC Limited if required.

Limitations and assumptions

The dense ground vegetation cover and the disturbed nature of the proposed route made it difficult to locate archaeological sites/materials. During the investigation attention was given to areas where the underlying sub surfaces were exposed by erosion and/or by human activities. Furthermore, the experience and knowledge gained from research and investigations of the previous survey and surrounding areas provided the information base to make predictions on the pre-colonial archaeology of the region.

Results

The proposed revised 132kV powerline route starts at the Wittebosch substation just east of the settlement in the Tsitsikamma Community Wind Energy Facility site (Figure 1). From there the route runs in a north, north-westerly direction over Tsitsikamma Community Wind Energy Facility land and crosses the N2 National Road (to Port Elizabeth) towards the R102 main road (to Humansdorp) (Figure 2). It follows the R102 for about 700 metres over disturbed commercial forestry land before it turns north over grazing land and low foreland hills towards the Dieprivier substation (Figure 3). From the high ground the route runs in an almost straight line over agricultural land to the western embankment of the Krom River where it joins the original power line route (Figure 4).

No archaeological or historical sites/materials were observed on the powerline route, but occasional Earlier and Middle Stone Age stone tools were observed in adjacent areas where the sub-surface ferricrete land floors were exposed by erosion or in vehicle tracks (Figure 5). The Earlier Stone Age stone tools date between 1,5 million – 250 000 years

old and the Middle Stone Age stone tools between 250 000 – 30 000 years old. These stone tools are commonly found throughout the region and were in secondary context. The tools were not associated with any other archaeological material and are therefore of low cultural significance. There are no historical features or graves older than 60 years near the proposed powerline route.

In general it would appear that the revised powerline route is of low archaeological sensitivity and the construction activities will have little impact on possible archaeological sites/material. However, there are already other power lines in the area and the proposed powerline will add a slight negative cumulative visual impact to the cultural landscape. It is unlikely that any significant archeological material will be exposed during the development. If any concentrations of archaeological material are uncovered during development, work must immediately cease and be reported to the nearest archaeologist and/or the Eastern Cape Provincial Heritage Resources Authority.

ASSESSMENT OF THE IMPACTS

It is assumed that the construction of the proposed 132kv power lines will consist of overhead cables suspended from wooden/metal structures placed a few hundred metres apart. These structures must be firmly positioned several metres deep in the ground. Although the placing of the structures will only affect a few square metres, it will be the additional activities such as the service roads for the construction vehicles and clearing of vegetation along the servitude which will disturb the land surface on a large scale.

These activities may have a negative effect on the above and below ground archaeological remains. The disturbances to the landscape may be rehabilitated over time, but the power lines however, will have a long term visually impact on the general countryside.

Pre-colonial archaeology

From the investigation, it would appear that the revised 132kV power line route from the Tsitsikamma Community Wind Energy Facility site to the proposed extension of the Dieprivier substation is of low archaeological sensitivity. Apart from occasional Earlier and Middle Stone Age stone tools observed adjacent to the powerline servitude, no other sites/remains of significance were observed. However, material may be covered by soil and vegetation. These stone tools were in secondary context and not associated with any other archaeological material and therefore of low cultural importance.

Nature of the impacts

The main impact on archaeological sites/remains (if any) will be the physical disturbance of the material and its context. The construction of the foundations or positions for the powerline and service roads may expose, disturb and displace archaeological sites/material.

Extent of the impacts

Construction of the powerline foundations and service roads may impact on remains which are buried, but these impacts will be limited and restricted to the local area. Given the fact that almost the entire line will be constructed on ploughed fields and disturbed land the chances are very small that any *in situ* archaeological sites/remains will be exposed, disturbed or displaced. The construction of the powerline foundations will also only disturb small areas and the negative impact on possible archaeological sites/materials may be relatively small. Other projects such as the construction of service roads will disturb larger areas and may expose sites/materials on a larger scale. In both cases further disturbances of sites/materials can be limited by mitigation.

Table 1. Impacts on the pre-colonial archaeology.

Nature: The potential impact of the construction of the power line foundations and service roads on above and below ground archaeological sites/materials		
	Without Mitigation	**With Mitigation**
Extent	Local (1)	Local (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Minor (1)	Minor (1)
Probability	Unlikely (2)	Unlikely (2)
Significance	Low (14)	Low (14)
Status (positive or negative)	Negative	Neutral
Reversibility	No	No
Irreplaceable loss of resources?	No, but in some cases, yes	No
Can impacts be mitigated?	Yes	
Mitigation: No mitigation is proposed before construction starts because the archaeological remains (if any) are of low significance (excluding human remains). However, if concentrations of archaeological materials are exposed then all work must stop for an archaeologist to investigate (see below). 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 archaeologist at the Albany Museum (046 6222312) or to the Eastern Cape Provincial Heritage Resources Authority (043 6422811), 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: The number of the powerline foundations will determine the impact on the buried materials (if any) and if these increase so will the possible impact.		
Residual impacts: Permanent		

The cultural landscape

The revised powerline route runs through a primarily open farming area of which large parts have been transformed by farming activities and used mainly for grazing. There are only a few modern farm houses in the wider region at fair distances from the powerline route. There are no historical buildings or known graves older than 60 years close to the power line route.

Nature of the impact

The revised powerline will be a 'new feature' on the landscape for part of the route and therefore will have a slight negative visual effect on the cultural landscape and sense of place on high ground or where it crosses main roads.

Extent of impact

The existing power lines in the immediate area have relatively low visibility form a distance and 'blends' well with the surrounding landscape. However, the revised power line will be constructed in a wide open landscape close to existing lines and therefore as a new addition to the landscape it will add a cumulative impact to the landscape, especially on the high lying areas. However, mitigation, if needed, falls in the domain of the visual impact assessment.

Table 1. Impacts on the cultural landscape.

Nature: The potential impact of the construction of the power line on the pre-colonial cultural landscape in terms of visual impacts and changes to 'sense of place'.		
	Without Mitigation	**With Mitigation**
Extent	Local (3)	Local (2)
Duration	Long term (4)	Long term (4)
Magnitude	Low (4)	Low (4)
Probability	Probable (3)	Probable (3)

Significance	Medium (33)	Medium (30)
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	Reversible
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	yes	
Mitigation: None		
Cumulative impacts: The construction of another power line will slightly increases the visibility of the feature on high ground or where it crosses main roads.		
Residual impacts: Disturbances to the landscape by the construction of service roads will be long term.		

DISCUSSION AND MITIGATION

The entire revised 132kv powerline route from the Tsitsikamma Community Wind Energy Facility site to the proposed extension of the Dieprivier Substation runs over land which has been ploughed extensively in the past and now covered by dense grass used for grazing. These activities most probably disturbed/destroyed any *in situ* archaeological sites/materials which may have been present. Apart from occasional Earlier and Middle Stone Age stone tools observed outside the powerline route, no other archaeological sites/materials were located. No further action is required regarding the stone tools because these were in secondary context and not associated with any other archaeological materials.

The main impact on archaeological sites/remains will be the physical disturbance of the material and its context. However, from the investigation it would appear that the revised route is of low archaeological sensitivity and that the impact of the development on archaeological sites/materials will be limited, but permanent if impact occurs. As a new feature in the landscape the revised powerline will contribute to a slight negative visual impact of the cultural landscape. Although it is unlikely that any sensitive archaeological remains will be exposed during the development, there is always a possibility that human remains and/or other archaeological and historical material may be uncovered during the development. The development may proceed, but it is recommended that;

1. The proposed 132kV power line should where possible follow the existing corridor.

2. If any concentrations of material are uncovered during development, work must stop immediately and be reported to the archaeologist at the Albany Museum (046 6222312) or to the Eastern Cape Provincial Heritage Resources Authority (043 6422811) so that a 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 construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. Alternatively it is suggested that the Environmental Control Officer be trained to be on site to report to the site manager if sites are found.

GENERAL REMARKS AND CONDITIONS

Note: This report is for a Phase 1 archaeological heritage impact assessment only and do 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.

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 5000m^2 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 000m^2 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 AND ADJACENT COASTAL 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

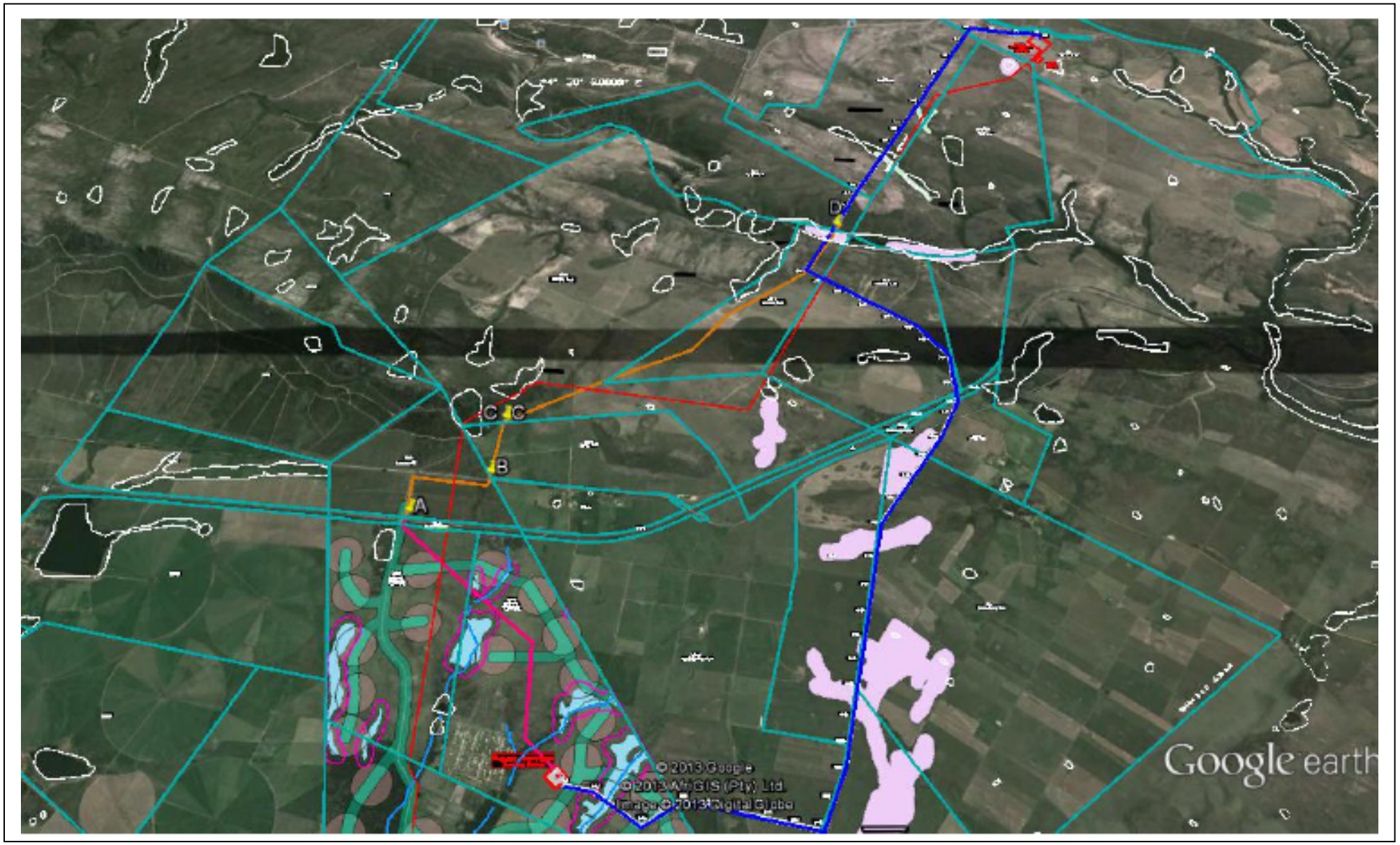
Fossil bones may be found embedded in geological deposits. Any concentrations of bones, whether fossilized or not, should be reported.

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. Aerial view of the layout of the original proposed powerline from the TCWEF to the proposed extension of the Dieprivier substation (blue line) and the revised/alternative powerline (pink and orange lines) (map courtesy the developers).

Figure 1. General views of the TCWEF landscape from where the powerline will be constructed (main image and left insert) towards the N2 (left insert) en route to the Dieprivier substation (right insert). The N2 runs at the foot of the hill and the red arrow marks the area where the route passes over the low foreland hills.

Figure 2. Views of the powerline route from the TCWEF substation towards the N2 (main image) and from the N2 towards the R102 and the low foreland hills (inserts). The red arrow marks the area where the route passes over the low foreland hills.

Figure 3. Views of the route along the R102 (main image and left insert) and the area where it crosses the R102 towards the low foreland hills (right insert). The red line marks the approximate line route.

Figure 4. A view of the route over the low hills (main image and left insert) and towards the Krom River and Dieprivier substation. Note the exposed ferricrete land floor in the left bottom corner of the left insert.

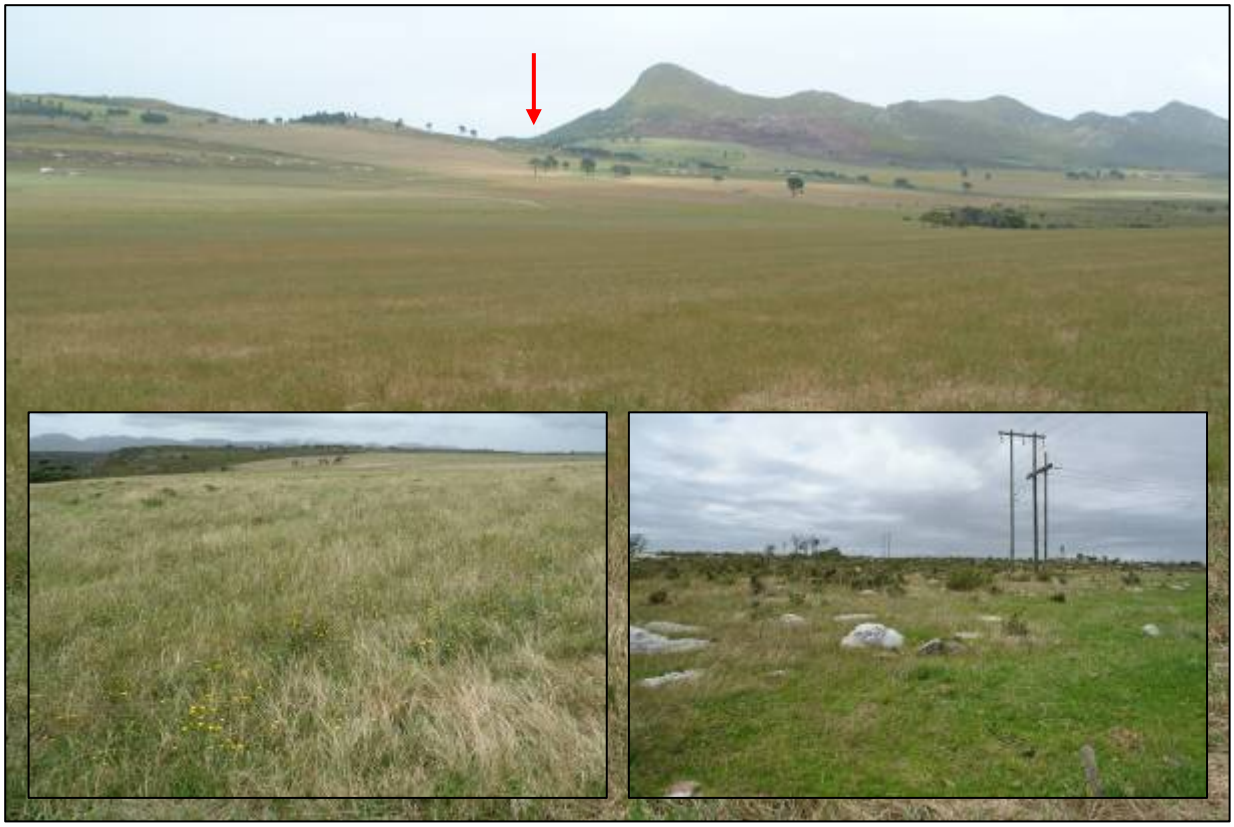


Figure 5. General views of the line route from the hill crossing (red arrow) towards the Krom River (main image and left insert) where it joins the original line route (right insert) towards the Dieprivier substation.

Figure 6. Earlier Stone Age stone tools exposed in a vehicle track adjacent to the line route.