

AN ARCHAEOLOGICAL WALK-THROUGH FOR THE PROPOSED SOETWATER WIND ENERGY FACILITY SITUATED ON THE FARMS: THE REMAINDER OF AND PORTION 1, 2 AND 4 OF FARM ORANGE FONTEIN 203 AND ANNEX ORANGE FONTEIN 185, FARM LEEUWE HOEK 183 AND FARM ZWANEOELSHOEK 184, NEAR SUTHERLAND, KAROO HOOGLAND LOCAL MUNICIPALITY, NAMAKWA DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE.

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NOTE: The phase 1 archaeological impact assessment for the proposed Hidden Valley Wind Energy Facility (Booth 2012) was conducted as a requirement of the National Heritage Resources Act 25 of 1999, Section 38 (1)(c)(i):

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, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;

(c) any development or other activity which will change the character of the site –

(i) exceeding 5000 m² in extent

This archaeological walk-through report follows the South African Heritage Resources Agency Review Comment on the Phase 1 Archaeological Impact Assessment (Booth 2012), 9 May 2012, SAHRA File No. 9/2/091/0004.

1. EXECUTIVE SUMMARY

1.1. Purpose of the Study

The purpose of the study, in response to comments from SAHRA, was to conduct an archaeological heritage walk-through of the final optimised layout of the proposed Soetwater Wind Energy Facility¹ (WEF) situated on the Farms: The Remainder of and Portion 1, 2 and 4 of Farm Orange Fontein 203 and Annex Orange Fontein 185, Farm Leeuwe Hoek 183 and Farm Zwanepoelshoek 184, Near Sutherland, Karoo Hoogland Local Municipality, Namakwa District Municipality, Northern Cape Province.

The archaeological heritage walk-through survey was conducted to assess the final optimised layout of the Soetwater Wind Energy Facility to establish the range and importance of the exposed and *in situ* archaeological heritage material remains, sites and features; to establish the potential impact of the development; and to make recommendations to minimize possible damage to the archaeological heritage of the final optimised layout of the Soetwater Wind Energy Facility (WEF).

¹ Project Company: Soetwater Wind Farm (Pty) Ltd.

1.2. Brief Summary of Findings

The remains of the foundation of a structure was documented on the Farm Orange Fontein 203 situated about 40 m north of the access road that leads off the public road to connect to the wind turbines S-001 and S-002. It is unlikely that this area will be negatively impacted during the construction of the wind energy facility given that it is more than 30m away, as per the South African Heritage Resources Agency's (SAHRA's) requirement in their comment on the Soetwater Wind Farm (discussed in more detail below).

SAHRA Review Comment had been considered for the final optimised layout and all turbines and associated infrastructure have been planned to avoid significant heritage resources reported in the 2012 report. No pre-colonial archaeological heritage remains were observed within the rest of the Soetwater Wind Energy Facility's final optimised layout. No other pre-colonial archaeological and / or historical heritage remains were observed within the area of the Soetwater Wind Energy Facility walk-through. Archaeological visibility was relatively good over the general area.

1.3. Recommendations

The overall area is considered as having a **low archaeological significance**, however, the following recommendations must be considered before development continues:

1. If the current layout is changed significantly and outside of the buffer areas assessed, an archaeological walk-through survey of the changes must be conducted and further mitigatory recommendations may be made if necessary.
2. It is unlikely that the built environment structure will be negatively affected by the construction of the road, however, precautions must be taken as to avoid impact during construction activities.
3. If concentrations of historical and pre-colonial archaeological heritage material and/or human remains (including graves and burials) are uncovered during construction, all work in the immediate area affecting the find must cease immediately and be reported to the South African Heritage Resources Agency (SAHRA) (Philip Hine / 021 462 4502,) or the MacGregor Museum in Kimberly (David Morris / 053 839 2706), so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the pre-colonial shell middens and associated artefacts will then be conducted to establish the contextual status of the sites and possibly remove the archaeological deposit before development activities continue.
4. A person must be trained as a site monitor to report any archaeological sites found during the development. Construction managers/foremen and/or the Environmental Control Officer (ECO)/ contractor's Environmental Officer (EO) should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow if they find sites.

1.4. Declaration of Independence and Qualifications

This section confirms a declaration of independence that the archaeological heritage specialist, Ms Celeste Booth, has no financial or any other personal interests in the project for the final layout of the Soetwater Wind Energy Facility. Ms Celeste Booth was appointed on a strictly professional basis to conduct a Phase 1 Archaeological Impact Assessment in line with the South African national heritage legislation, the National Heritage Resources Act 25 of 1999 (NHRA 25 of 1999) and in response to the recommendations provided by the Department of Environmental Affairs and according to the relevant environmental impact assessment regulations.

Ms Celeste Booth (BSc Honours: Archaeology) is an archaeologist who has had eight years (October 2015) of full time Cultural Resource Management in the Eastern Cape and sections of the Northern Cape and Western Cape. Ms Booth has conducted several Archaeological Desktop Studies and Phase 1 Archaeological Impact Assessments within the Eastern Cape and in the Karoo region across the Eastern Cape, Northern Cape and Western Cape.

2. BACKGROUND INFORMATION

2.1. Previous studies conducted for the proposed Soetwater Wind Energy Facility (WEF)

An archaeological desktop study for the proposed Hidden Valley Wind Energy Facility, situated on a site south of Sutherland, Northern Cape Province, was conducted in 2011 (Booth 2011). The outcome of the desktop study recommended that a phase 1 archaeological impact assessment of the site be conducted.

A phase 1 archaeological impact assessment of the proposed Hidden Valley Wind Energy Facility on a site south of Sutherland, Northern Cape Province, was conducted in 2012 (Booth 2012). The proposed wind energy facility area was divided into three phases:

- Phase 1 – Proposed Karusa Wind Farm to be located on the Farm De Hoop 202, Farm Standvastigheid 201, and Portion 1, 2, 3 and the remainder of Farm Rheebokke Fontein 209;
- Phase 2 – Proposed Soetwater Wind Farm to be located on the remainder of and Portion 1, 2 and 4 of Farm Orange Fontein 203, Annex Orange Fontein 185, Farm Leeuwe Hoek 183 and Farm Zwanepoelshoek 184;
- Phase 3 – Proposed Great Karoo Wind Farm to be located on Farm Kentucky 206 and Portion 1 of Farm Wolvenkop 207.

The findings of the archaeological investigation indicated that no pre-colonial heritage remains, features or sites were encountered within the area proposed for the

development of the wind energy facility. However, several historical archaeological remains, features and sites were highlighted as they occurred adjacent to possible main access roads that would have been used during the construction and development activities. The area, including phases 1 – 3, was considered as having medium – high cultural sensitivity according to the sensitive remains, features and sites encountered.

Historical heritage sites within the area proposed for the Phase 2 – Proposed Soetwater Wind Energy Facility were documented on the Farms Remainder of Portion 1 of the Farm Orange Fontein 203:

1. Dry packed stone walling dwelling (HVOFSW) (Portion 1 of the Farm Orange Fontein 203);
2. Farmstead Complex (HVOFFarmstead) (Portion 1 of the Farm Orange Fontein 203);
3. Clay packed stone walling cottage (Cottage Ruins) (Remainder of Portion 1 of the Farm Orange Fontein 203; and
4. Dry packed stone walling (HVOFKraal) (Remainder of Portion 1 of the Farm Orange Fontein).

All of these heritage resources were located close to the existing internal access gravel roads that may have been developed as access routes for the wind energy facility. Recommendations suggested that alternative access routes be proposed for the construction and development activities of the wind energy facility as the widening of the roads may impact on the sensitive heritage structures. The Proponent responded by proposing a new access road.

The South African Heritage Resources Agency (SAHRA) Review Comment on the Phase 1 Archaeological Impact Assessment (Booth 2012), 9 May 2012, SAHRA File No. 9/2/091/0004, recommended the following:

1. Decisions on Built Environment (structures older than 60 years, including all farm infrastructure) must be made by the Provincial Heritage Resources Authority of the Northern Cape.
2. SAHRA supports the recommendations of the archaeologist in terms of finding alternative access roads so as not to impact the farm buildings and graveyards adjacent to them. These access roads would need to be at least 30 m from any sensitive heritage features. An archaeologist will need to survey the routes of the new access roads, should they need to be moved.
3. The graves should be restored where these are dilapidated, protected and conserved in perpetuity. For this purpose, a proper fence must be built around the unfenced graveyards, with entry gates to allow visits from relatives and family graves. The fence must be placed 5 m away from the perimeter of the graves. No development is allowed within 30 m of the fence line surrounding graves.

4. Heritage Western Cape has requested that all wind turbines be moved from the top of the ridges along the border between the Western and Northern Cape. This requests supported by SAHRA and extended to the southern parts of the Northern Cape in order to maintain the same visual impact across the area.
5. Once the final layout of turbines, substations, power lines and access roads has been decided, the archaeologist must be informed and, if necessary, another field survey should be conducted. The archaeological report must be submitted to SAHRA for comment before construction can begin. Phase 2 mitigation could be necessary.
6. Should any new evidence of archaeological sites or artefacts, graves, or other heritage resources are found during construction, SAHRA (021 462 4502) or the MacGregor Museum in Kimberly must be contacted and an archaeologist must be appointed at the cost of the developer.

The SAHRA Archaeology, Palaeontology and Meteorites Unit reviewed the Final Environmental Impact Report for the Proposed Hidden Valley Wind Energy Facility (comprising three development phases) on a site south of Sutherland, Northern Cape Province (April 2014).

SAHRA re-assessed the information provided in terms of heritage and acknowledges that the conditions stipulated by the archaeologist in Appendix 1 of the EIR are unchanged from those included in the archaeological impact assessment dated February 2012.

Since SAHRA's previous comment (August 2012), SAHRA had also commented on the Phase 1 of the Roggeveld Wind Energy Facility and associated infrastructure located on the western side of the R354. The layout of the Roggeveld WEF includes turbines which are closer than 3 km from the R354, both in the Northern Cape and Western Cape. However, the impact of these turbines on the sense of place on the R354 was carefully considered and it is expected to be marginal, at least in the Northern Cape, the province for which SAHRA is responsible in terms of archaeology.

SAHRA's case comment stipulated that SAHRA does not object to the development of the three phases of the Hidden Valley Wind Farm provided the following recommendations are adhered to:

1. Turbines 197, 200, 201 and 202 be removed in order to protect the sense of place experienced along the R354, SAHRA acknowledges that the latest layout at page 186 of the EIR already makes provision for the removal of these four turbines.
2. If any turbine be located within the 3 km from the R354, the impact on the sense of place of this road must be assessed separately.
3. Ancillary infrastructure should be no closer than 500 m to the R354.
4. Alternative access roads must be identified and located at least 30 m from any sensitive heritage features, such as graveyards.

5. The graves should be restored where these are dilapidated, protected and conserved. For this purpose, a proper fence must be built around the unfenced graveyards, with entry gates to allow visits from relatives and friends. The fence must be placed 5 m away from the perimeter of the graves. No development is allowed within 30 m of the fence line surrounding the graves.
6. Once the final layout of turbines, substations, power lines and access roads has been decided, the archaeologist must be informed and, if necessary, another field survey may be conducted. The archaeological report must be submitted to SAHRA for further comments.
7. Decisions on the Built Environment (structures older than 60 years including all farm infrastructure) must be made by the Provincial Heritage Resources Agency of the Northern Cape.

2.2. Proposed activity for the Soetwater Wind Energy Facility:

The proposed activity for the Soetwater Wind Energy Facility (i.e. the "Project") includes:

- The construction of 43 wind turbines (3.3MW in capacity and with a 117 m rotor diameter and a hub height of 91.5 m);
- Medium voltage cabling between turbines to be laid underground where practical;
- Medium Voltage overhead power lines;
- Internal access roads to connect turbines, the substation complex and ancillary;
- Proposed 132kV substation complex;
- Proposed 132kV power line from the Soetwater Facility substation complex to the Eskom Karusa switching station; operations and services workshop area / office building for control, maintenance and storage; and
- Temporary infrastructure including a site camp, laydown areas and a batching plant.

2.3. Applicant:

Soetwater Wind Farm (Pty) Ltd (Soetwater Wind Farm)

2.4. Consultant:

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2.5. Terms of reference

The purpose of the study, in response to comment from SAHRA, was to conduct an archaeological heritage walk-through of the final optimised layout of the proposed Soetwater Wind Energy Facility² (WEF) situated on the Farms: The Remainder of and Portion 1, 2 and 4 of Farm Orange Fontein 203 and Annex Orange Fontein 185, Farm Leeuwe Hoek 183 and Farm Zwanepoelshoek 184, Near Sutherland, Karoo Hoogland Local Municipality, Namakwa District Municipality, Northern Cape Province.

The Terms of Reference (ToR) are as follows:

- Conduct a walk-through of the optimised Soetwater layout to confirm whether any significant archaeological artefacts or sites would be impacted;
- Ensure the walk-through addresses SAHRA's requirements as per their comments on the project, specifically with regard to surveying the final layout;
- Address condition 128 of the Environmental Authorisation which states the following: "*The final layout should be shown to the appointed archaeologist before implementation to confirm that all significant heritage resources have been adequately protected.*"
- Indicate whether any further permits might be required for the destruction of any heritages sites, if applicable.
- Make recommendations regarding practical mitigation measures if and where additional mitigations to those proposed in the initial Archaeology study is required.

3. HERITAGE LEGISLATIVE REQUIREMENTS

Parts of sections 3(1)(2)(3), 34(1), 35(4), 36(3) and 38(1)(8) of the National Heritage Resources Act 25 of 1999 apply:

S3. National estate

3. (1) For the purposes of this Act, those heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate and fall within the sphere of operations of heritage resources authorities.

3. (2) Without limiting the generality of subsection (1), the national estate may include –

- (a) places, buildings, structures and equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;

² Project Company: Soetwater Wind Farm (Pty) Ltd.

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

3. (3) Without limiting the generality of subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of –

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

S34. Structures

34. (1) No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

S35. 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; or
- (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.

S36. 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.

S38. 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, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
- (b) the construction of a bridge or similar structure exceeding 50 m in length;
- (c) any development or other activity which will change the character of the site –
 - (i) exceeding 5 000 m² 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 10 000 m² 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.

4. DESCRIPTION OF THE PROPERTY

4.1. Location data

The Soetwater Wind Farm site is located approximately 50 km south of Sutherland and 30 km north of Matjiesfontein within the Karoo Hoogland Local Municipality, Namakwa District Municipality, Northern Cape Province, east of the R354 regional road that runs between Matjiesfontein in the Western Cape and Sutherland in the Northern Cape.

The Soetwater wind energy facility (WEF) is situated on the Farms: The Remainder of Portion 1, 2 and 4 of Farm Orange Fontein 203 and Annex Orange Fontein 185, Farm Leeuwe Hoek 183 and Farm Zwanepoelshoek 184, Near Sutherland, Karoo Hoogland Local Municipality, Namakwa District Municipality, Northern Cape Province.

The majority wind turbines and associated infrastructure are situated on the ridges of the Klein Roggeveldberge stretching north-south on the western boundary of the Wind Farm layout. The northern turbines lead from the Klein Roggeveldberge onto the koppie referred to *Graskop* (see Fig 1). Turbines S-040 to S-044 are situated east of the public access road on the koppie referred to as *Ruiten Kop*. The main access road to the turbines situated on the Klein Roggeveldberge leads from the public access along the northern extent of the Farm Orange Fontein 203. The road links to the Karusa Wind Energy Facility access roads situated on the Farms De Hoop 203 and Standvastigheid 210.

4.2. Maps

1:50 000 Maps: 3220 DA VERLATEKLOOF and 3220 DC SWARTLAND

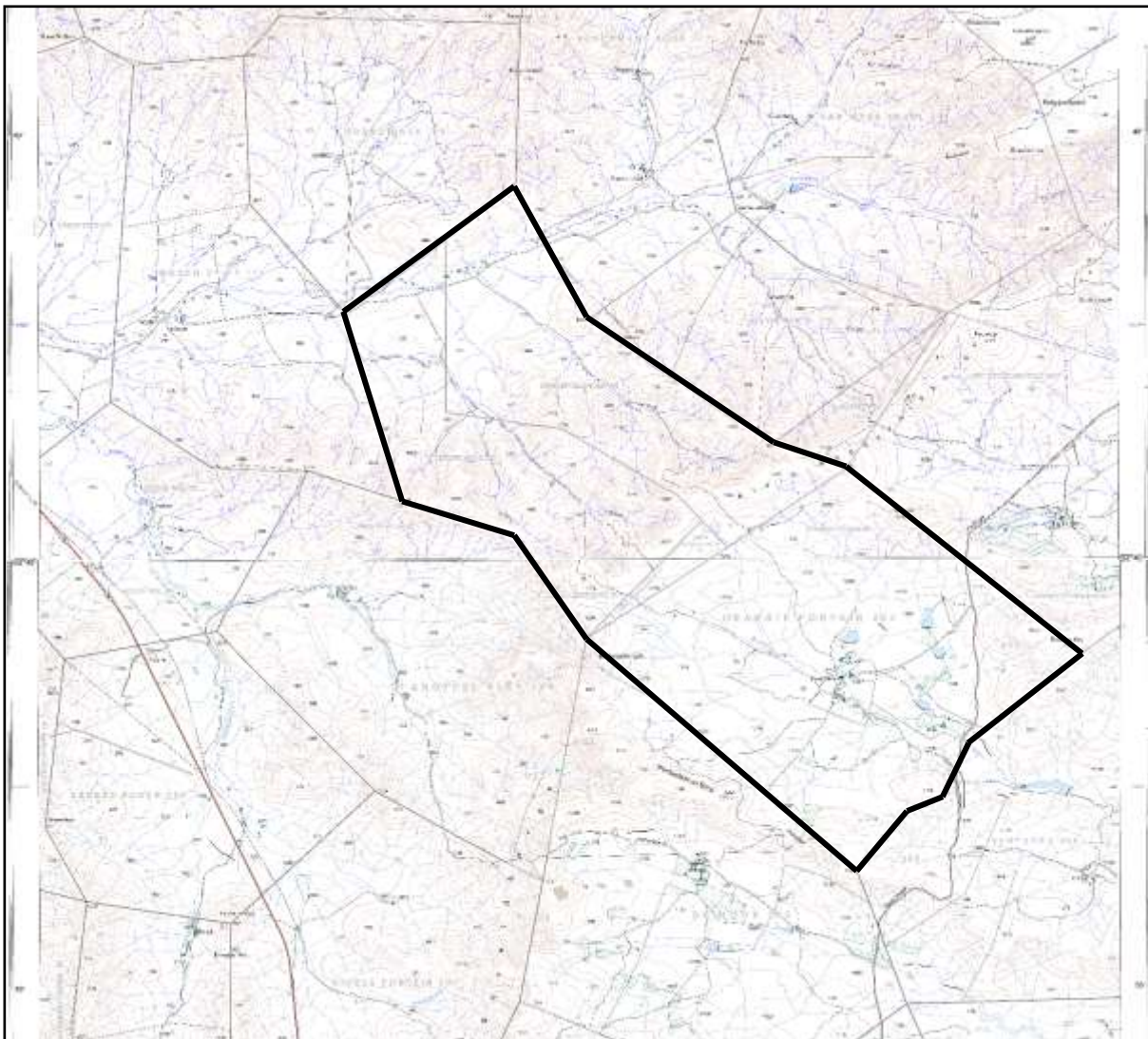


Figure 1. 1: 50 000 topographic maps 3220 DA VERLATEKLOOF and 3220 DC SWARTLAND showing the location of the Soetwater Wind Energy Facility.



Figure 2. Aerial view showing the location of the Soetwater Wind Energy Facility (red block).

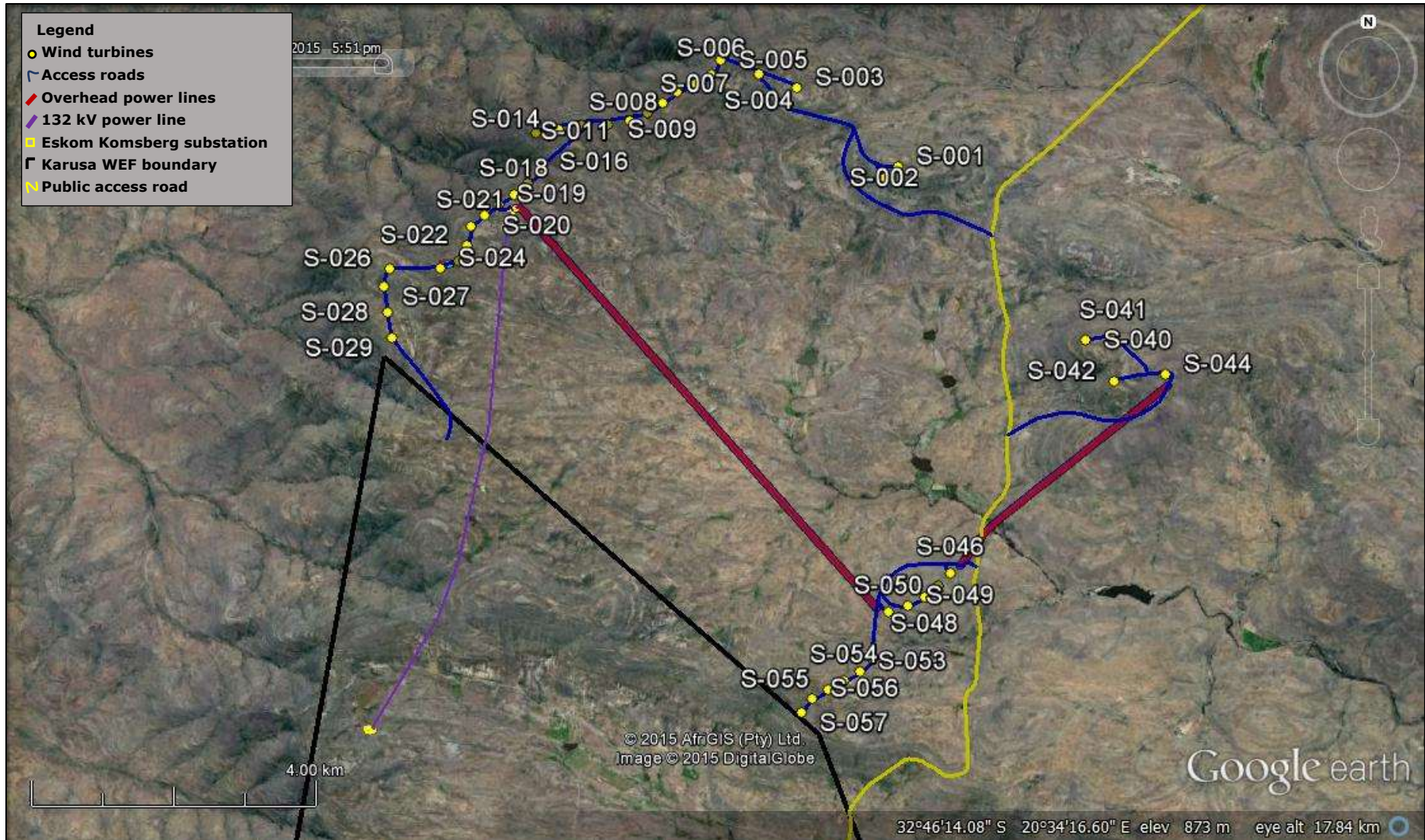


Figure 3. Close-up aerial view showing the final layout of the Soetwater Wind Energy Facility.

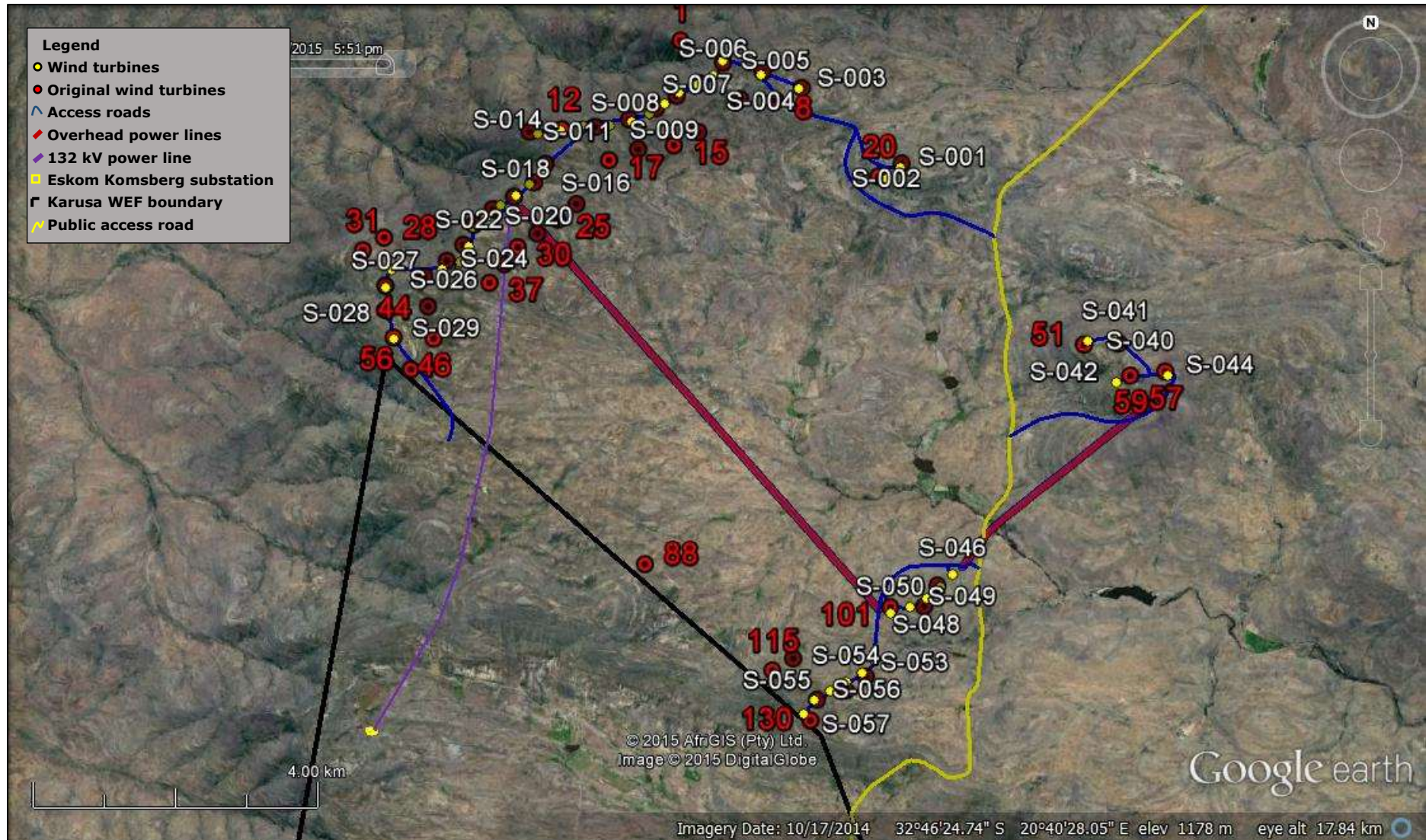


Figure 4. Aerial view showing the original layout (red turbine numbering) superimposed on the final layout of the Soetwater Wind Energy Facility.

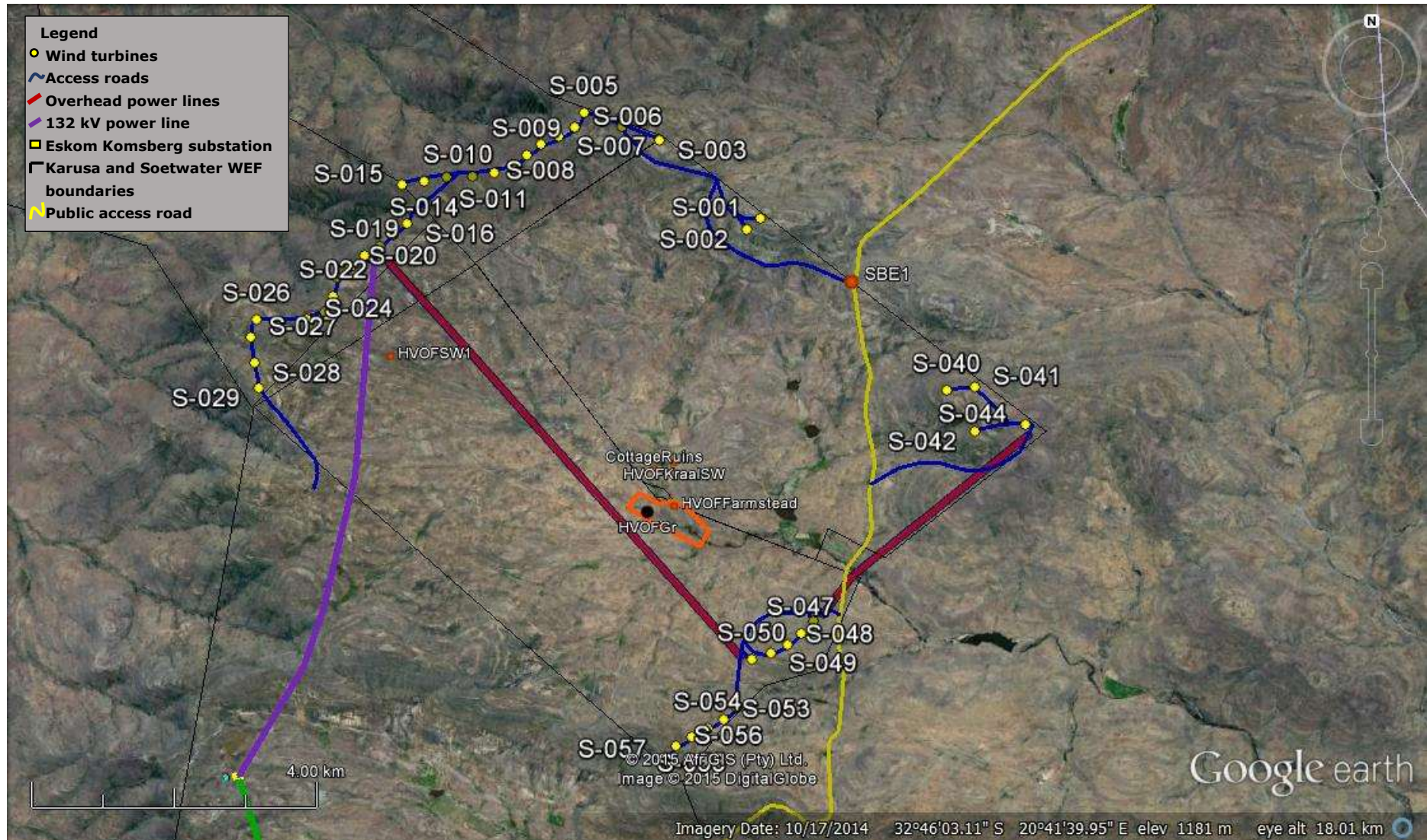


Figure 5. Aerial view showing the heritage features recorded during the Hidden Valley Phase 1 Archaeological Impact Assessment and Walk-through (SBE1) in relation to the final layout of the Soetwater Wind Energy Facility.

5. ARCHAEOLOGICAL INVESTIGATION

5.1. Methodology

An archaeological desktop literature review was conducted as part of the original AIA study for the Hidden Valley Wind Energy Facility and is therefore not repeated here. Very little systematic archaeological research has been conducted within the immediate area of the final optimised layout of the Soetwater Wind Energy Facility.

The areas were previously surveyed during the phase 1 archaeological impact assessment for the proposed Hidden Valley Wind Energy Facility conducted in 2012. The archaeological walk-through focused on areas not included in the original layout and changes made in regards to the South African Heritage Resources (SAHRA) Review Comment which includes the final optimised layout of roads where areas had not yet been surveyed.

The archaeological walk-through investigation was conducted on foot by surveying the final optimised layout of the Soetwater Wind Energy Facility. Archaeological visibility was relatively good during the survey and if archaeological heritage sites, features and remains were present these would have been observed. The GPS co-ordinate readings and photographs were taken using a Garmin Oregon 550 unit.

5.2. Changes to the final layout of the Soetwater Wind Energy Facility

The original layout of the Soetwater Wind Farm comprised 74 wind turbines, the number has been decreased to 43 wind turbines in response to various environmental sensitivities and technical requirements. No ancillary infrastructure will be established within 500 m of the R354. Alternative access roads have been identified where required. The access roads will lead off the existing public road through the valley and will follow the ridges connecting to the wind turbines. Therefore, no roads will occur within 30 m of any sensitive heritage features.

5.3. Results of the Archaeological Investigation

The positions of the turbines were previously surveyed during the phase 1 archaeological impact assessment for the proposed Hidden Valley Wind Energy Facility conducted in 2012 and it was established that no archaeological or heritage resources were encountered within the areas proposed for the wind turbines. The positions of the turbines in the final optimised layout for the Soetwater Wind Farm have not moved drastically, however, several have been removed. The medium voltage cabling between the turbines that are to be laid underground as far as possible will follow the line of the turbines has been covered in the 2012 survey. This overhead medium voltage lines were also surveyed in the 2012 survey.

The associated infrastructure including 132kV facility substation, operations and services workshop area, office building for control, maintenance and storage, as well as the laydown and batching areas have been covered in the 2012 survey and have been compiled in a separate report.

The access roads to the turbines that had not been finalised and assessed in detail during the original survey were surveyed for the archaeological walk-through. The access road leading to Turbines S-001 and S-002 was not included in the original layout and was surveyed during the current study. No pre-colonial archaeological heritage resources were identified along the route, however, the remains of concrete foundations (SBE1, Figures 6-8) was documented about 40 m north of the proposed access route. The area is situated west of the public access road.

No other pre-colonial or historical archaeological heritage remains were observed during the investigation. It is possible that stone artefacts may occur below the vegetation cover between the surface and 50 – 80 cm below the ground. However, it is unlikely that archaeological heritage sites, features and remains occur *in situ* or should be encountered during the proposed construction of the development.





Figure 7. View of the remains of foundations west of the public road on the Farm Orange Fontein 203 facing west.



6. DESCRIPTION OF SITES

6.1. SBE1:

The remains of concrete foundations (SBE1, Figures 6-8) was documented about 40 m north of the proposed access route. The area is situated west of the public access road.

'General' Protection C (Field Rating IV C): This site has been sufficiently recorded (in the Phase 1). It requires no further recording before destruction (usually *Low significance*) if destruction is required. The proposed alignment is however 40 m from this site and should therefore not be affected.

No other archaeological or historical heritage sites, features or remains were observed within the final optimised layout of the Soetwater Wind Energy Facility

7. COORDINATES AND SITES FOR THE WALK-THROUGH FOR THE FINAL LAYOUT OF THE SOETWATER WIND ENERGY FACILITY NEAR SUTHERLAND, NEAR SUTHERLAND, NORTHERN CAPE PROVINCE.

TABLE 1. COORDINATES AND SITES FOR THE WALK-THROUGH FOR THE FINAL LAYOUT OF THE SOETWATER WIND ENERGY FACILITY, NORTHERN CAPE PROVINCE.

REFERENCE	DESCRIPTION	CO-ORDINATE	HERITAGE GRADING
SBE1	Built Environment	32°45'00.66"S; 20°42'50.34"E	N/A

8. CONCLUSION AND SUMMARY OF THE TERMS OF REFERENCE

- Conduct a walk-through of the optimised Soetwater layout to confirm whether any significant archaeological artefacts or sites would be impacted:

The optimised layout was surveyed on foot to establish whether any heritage/archaeological sites would be impacted. One site was identified (SBE1) within the optimised layout, but very unlikely to be affected as it is located approximately 40 m north from an internal access road.

- Ensure the walk-through addresses SAHRA's requirements as per their comments on the project, specifically with regard to surveying the final layout:

SAHRA's case comment stipulated that SAHRA does not object to the development of the three phases of the Hidden Valley Wind Farm provided the following recommendations are adhered to:

1. Turbines 197, 200, 201 and 202 be removed in order to protect the sense of place experienced along the R354, SAHRA acknowledges that the latest layout at page 186 of the EIR already makes provision for the removal of these four turbines.
 - The optimised layout confirms these turbines have been removed.
 2. If any turbine be located within the 3 km from the R354, the impact on the sense of place of this road must be assessed separately.
 - The optimised layout confirms no turbines are within 3 km of the R354.
 3. Ancillary infrastructure should be no closer than 500 m to the R354.
 - The optimised layout confirms no ancillary infrastructure to be closer than 500 m from the R354.
 4. Alternative access roads must be identified and located at least 30 m from any sensitive heritage features, such as graveyards.
 - The Proponent designed an access roads in the optimised layout so that they are further than 30 m from any sensitive heritage feature, as is confirmed by the optimised layout and the walk-through from the specialist.
 5. The graves should be restored where these are dilapidated, protected and conserved. For this purpose, a proper fence must be built around the unfenced graveyards, with entry gates to allow visits from relatives and friends. The fence must be placed 5 m away from the perimeter of the graves. No development is allowed within 30 m of the fence line surrounding the graves.
 - The graveyard recorded during the 2012 study will not be affected by the Soetwater Wind Farm. No graves were noted by the specialist during the walk-through for the final layout of the Soetwater Wind Farm.
 6. Once the final layout of turbines, substations, power lines and access roads has been decided, the archaeologist must be informed and, if necessary, another field survey may be conducted. The archaeological report must be submitted to SAHRA for further comments.
 - The purpose of the walk-through and resulting report is to give effect to this requirement from SAHRA.
 7. Decisions on the Built Environment (structures older than 60 years including all farm infrastructure) must be made by the Provincial Heritage Resources Agency of the Northern Cape.
 - The relevant authority will be consulted if required.
- Address condition 128 of the Environmental Authorisation (EA) which states the following: *"The final layout should be shown to the appointed archaeologist before implementation to confirm that all significant heritage resources have been adequately protected."*

This walk-through survey was commissioned to fulfil the above EA requirement. It was found that all significant heritage resources have been adequately protected.

- Indicate whether any further permits might be required for the destruction of any heritages sites, if applicable.

No permits are anticipated.

- Make recommendations regarding practical mitigation measures if and where additional mitigations to those proposed in the initial Archaeology study is required.

It is unlikely that the built environment structure will be negatively affected by the construction of the road, however, precautions must be taken as to avoid impact during construction activities.

The OBJECTIVE of the walk-through for the final layout of the Soetwater Wind Energy Facility was to establish the range and importance of the exposed and *in situ* archaeological heritage material remains, sites and features; to establish the potential impact of the development; and to make recommendations to minimize possible damage to the archaeological heritage.

Project component/s	<ul style="list-style-type: none"> • The construction of 43 wind turbines (3.3MW in capacity and with a 117 m rotor diameter and a hub height of 91.5 m; • Medium voltage cabling between turbines to be laid underground were practical; • Medium Voltage overhead power lines; • Internal access roads to connect turbines, the substation complex and ancillary; • Proposed 132kV substation complex; • Proposed 132kV power line from the Soetwater Facility substation complex to the Eskom Karusa switching station; operations and services workshop area / office building for control, maintenance and storage; and • Temporary infrastructure including a site camp, laydown areas and a batching plant.
Potential Impact	<ul style="list-style-type: none"> • Negative impact on the remains of concrete foundations
Activity/risk source	Construction of the Soetwater Wind Energy Facility
Mitigation: Target/objective	Protection and conservation of heritage features documented during the walk-through for the final layout of the Soetwater Wind Energy Facility and possible archaeological heritage resources occurring below the surface not visible on the surface

Mitigation: Action / control	Responsibility	Timeframe
• If the current layout is changed	Contracted archaeologist	Prior to construction

<p>significantly, an archaeological walk-through survey of the changes, if outside of the assessed footprint area, must be conducted and further mitigatory recommendations may be made if necessary.</p> <ul style="list-style-type: none"> • It is unlikely that the built environment structure will be negatively affected by the construction of the road, however, precautions must be taken as to avoid impact during construction activities. • If concentrations of historical and pre-colonial archaeological heritage material and/or human remains (including graves and burials) are uncovered during construction, all work in the immediate area affecting the find must cease immediately and be reported to the South African Heritage Resources Agency (SAHRA) (Philip Hine / 021 462 4502,) or the MacGregor Museum in Kimberly (David Morris / 053 839 2706), so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the pre-colonial shell middens and associated artefacts will then be conducted to establish the contextual status of the sites and possibly remove the archaeological deposit before development activities continue. • A person must be trained as a site monitor to report any archaeological sites found during the development. Construction managers/foremen and/or the ECO/EO 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. 	<p>ECO/ EO, construction managers and/ or foremen</p> <p>ECO/ EO, construction managers and/ or foremen</p> <p>ECO/ EO, construction managers and/ or foremen</p>	<p>as part of the EMP.</p> <p>Prior to construction as part of the EMP.</p> <p>Prior to construction as part of the EMP.</p> <p>Prior to construction as part of the EMP.</p>
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Performance Indicator	Conservation of documented areas and the preservation of possible subsurface archaeological heritage sites, features and sites.
Monitoring	A person must be trained as a site monitor to report any archaeological sites found during the development. Construction managers/foremen and/or the ECO/EO 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.

9. RECOMMENDATIONS

The overall area is considered as having a **low archaeological significance**, however, the following recommendations must be considered before development continues:

1. If the current layout is changed significantly and outside of the buffer areas assessed, an archaeological walk-through survey of the changes must be conducted and further mitigatory recommendations may be made if necessary.
2. It is unlikely that the built environment structure will be negatively affected by the construction of the road, however, precautions must be taken as to avoid impact during construction activities
3. If concentrations of historical and pre-colonial archaeological heritage material and/or human remains (including graves and burials) are uncovered during construction, all work in the immediate area affecting the find must cease immediately and be reported to the South African Heritage Resources Agency (SAHRA) (Philip Hine / 021 462 4502,) or the MacGregor Museum in Kimberly (David Morris / 053 839 2706), so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the pre-colonial shell middens and associated artefacts will then be conducted to establish the contextual status of the sites and possibly remove the archaeological deposit before development activities continue.
4. A person must be trained as a site monitor to report any archaeological sites found during the development. Construction managers/foremen and/or the

Environmental Control Officer (ECO)/ contractor's Environmental Officer (EO) should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow if they find sites.

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11. RELEVANT ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENTS

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12. GENERAL REMARKS AND CONDITIONS

NOTE: This report is for the archaeological heritage walk-through only and does not include or exempt other required specialist assessments as part of the heritage impact assessments.

The National Heritage Resources Act (Act No. 25 of 1999, Section 35 [Brief Legislative Requirements]) requires a full Heritage Impact Assessment (HIA) in order that all heritage resources including 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 emphasized that the conclusions and recommendations expressed in this phase archaeological heritage walk-through are based on the visibility of archaeological remains, features and, sites and may not reflect the true state of affairs. Many archaeological remains, features and, sites may be covered by soil and vegetation and will only be located once this has been removed. In the event of such archaeological heritage being uncovered (such as during any phase of construction activities), archaeologists or the relevant heritage authority 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 25 of 1999).

Archaeological Specialist Reports will be assessed by the relevant heritage resources authority. The final comment/decision rests with the heritage resources authority that may confirm the recommendations in the archaeological specialist report and grant a permit or a formal letter of permission for the destruction of any cultural sites.

APPENDIX A: GRADING SYSTEM

The National Heritage Resources Act 25 of 1999 stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act and the South African Heritage Resources Agency:

- National: This site is suggested to be considered of Grade 1 significance and should be nominated as such. Heritage resources with qualities so exceptional that they are of special national significance.
- Provincial: This site is suggested to be considered of Grade II significance and should be nominated as such. Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region
- Local: This site is suggested to be Grade IIIA significance. This site should be retained as a heritage register site (High significance) and so mitigation as part of the development process is not advised.
- Local: This site is suggested to be Grade IIIB significance. It could be mitigated and (part) retained as a heritage register site (High significance).
- 'General' Protection A (Field Rating IV A): This site should be mitigated before destruction (usually High/Medium significance).
- 'General' Protection B (Field Rating IV B): This site should be recorded before destruction (usually Medium significance).
- 'General' Protection C (Field Rating IV C): This site has been sufficiently recorded (in the Phase 1). It requires no further recording before destruction (usually Low significance).

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

1. 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.

2. Freshwater mussel middens

Freshwater mussels are found in the muddy banks of rivers and streams and were collected by people in the past as a food resource. Freshwater mussel shell middens are accumulations of mussel shell and are usually found close to rivers and streams. These shell middens frequently contain stone tools, pottery, bone, and occasionally human remains. Shell middens may be of various sizes and depths, but an accumulation which exceeds 1 m² in extent, should be reported to an archaeologist.

3. 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

4. Fossil bone

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

5. 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.

6. 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.