

**PRE-CONSTRUCTION ARCHAEOLOGICAL WALKDOWN REPORT FOR
THE HARTEBEESTHOEK EAST WIND ENERGY FACILITY OUTSIDE
NOUPOORT IN THE NORTHERN CAPE**

Prepared for

Arcus Consultancy Services South Africa (Pty) Ltd

On behalf of

EDF Renewables (South Africa) (Pty) Ltd

Draft for Comment: 3 February 2022

Final: 3 January 2023



ACO Associates cc
Archaeology and Heritage Specialists

Prepared by

John Gribble (MA)

Gail Euston-Brown (BA)

ACO Associates

5 Cannon Road, Plumstead, 7800

Phone 078 616 2961

Email: john.gribble@aco-associates.com

DETAILS OF THE SPECIALIST

This study has been undertaken by John Gribble BA Hons, MA (ASAPA) and Gail Euston-Brown BA of ACO Associates CC, archaeologists and heritage consultants.

Address: 5 Cannon Road, Plumstead, 7800

Email: john.gribble@aco-associates.com

Phone: 078 616 2961

CONSULTANT DECLARATION OF INDEPENDENCE

I, John Gribble, declare that – general declaration:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Signature of the specialist:

A handwritten signature in black ink, appearing to read 'J. Gribble', enclosed within a large, stylized circular flourish.

Name of company (if applicable): ACO Associates CC

Date: 3 January 2023

EXECUTIVE SUMMARY

ACO Associates CC was appointed by Arcus Consultancy Services South Africa (Pty) Ltd, on behalf of EDF Renewables (South Africa) (Pty) Ltd, to conduct a pre-construction survey of the authorised Hartebeesthoek East Wind Energy Facility located outside Noupoot in the Northern Cape.

The Hartebeesthoek East WEF has been subject to two previous archaeological assessments as part of the Environmental Impact Assessment process for the San Kraal WEF in 2017 and a Part 2 EA Amendment Application when the Hartebeesthoek East WEF was split off from the authorised San Kraal WEF in 2019.

Time constraints meant that it was not possible to revisit this WEF during the 2021 survey programme and this pre-construction assessment is therefore based on existing survey data collected in 2017 and 2019. The combined coverage of the 2017 and 2019 surveys provides a good baseline understanding of the archaeological potential of the WEF area, which is extremely low, and the potential impacts of the project on heritage resources and the confidence in the findings set out later in this report is high.

Findings: The two survey visits to the Hartebeesthoek East WEF confirm that there are very few archaeological sites on the mountaintops of the area, as is generally the case across the Karoo. The high ridges, which are dry, windswept and very cold in winter, appear to have seldom attracted more than passing prehistoric human occupation. No archaeological material, rock engravings or San rock paintings were identified in the Hartebeesthoek East WEF.

The surveys identified two clusters of historical kraals and a single stone cairn within the footprint of what is now the Hartebeesthoek East WEF.

The design and layout of the Hartebeesthoek East WEF avoids the identified heritage sites in the WEF area and no mitigation measures were proposed in either 2017 or 2019.

It is possible that archaeological sites and artefacts that have not yet been identified will be present within the Hartebeesthoek East WEF and may be subject to impacts arising from its the construction. However, the survey work carried out on the site in 2017 and 2019, and the nature of the sites that have been recorded within the WEF area suggest that should such sites occur, they will tend to be isolated artefacts or thin open scatters of mainly MSA lithics on deflated erosion surfaces, which are of limited archaeological value and significance. It is unlikely that significant archaeological sites will be impacted by the construction of the WEF.

With regard to rock art and rock engravings, the geology of the WEF site does not lend itself to rock shelters where rock art may be present, and the type of patinated dolerite boulders which often have rock engravings were not noted on the site during the various surveys. It is recommended, however, that in the unlikely event that either rock art or rock engravings are encountered during the construction of the WEF, work must cease in their vicinity, they must be cordoned off and left *in situ* and SAHRA must be informed of the discovery so that a decision can be made about how to deal with them.

Should any human remains be encountered at any stage during earthworks associated with the project, work in the vicinity must cease immediately, the remains must be left *in situ* but

made secure and the project archaeologist and SAHRA must be notified immediately so that a decision can be made about how to mitigate the find.

Contractors must be made aware of the presence of the no-go areas recommended above and EDF Renewables, through the project Environmental Compliance Officer, must ensure that these heritage exclusion zones are implemented and respected.

The Environmental Management Programme Report for the Hartebeesthoek East WEF requires no change in respect to the assessment of impacts on archaeological sites and materials. It will need to be updated, however, to reflect the mitigation measures recommended in this report.

Conclusion: This assessment has found that while a number of significant heritage resources are present in Hartebeesthoek East WEF, these will not be impacted by the construction of the WEF. Provided the mitigation measures recommended in this report are implemented, the overall impact of the construction of the WEF is likely to be of very low significance and tolerable from an archaeological perspective and that the proposed activity is acceptable.

GLOSSARY

Archaeology: Remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures.

Early Stone Age: Period of the Stone Age extending approximately between 2 million and 20 000 years ago.

Holocene: The geological period spanning the last approximately 10-12 000 years.

Hornfels: Contact metamorphic rock that has been baked and hardened by the heat of intrusive igneous rock.

Later Stone Age: Period of the Stone Age extending over the last approximately 20 000 years.

Middle Stone Age: Period of the Stone Age extending approximately between 200 000 and 20 000 years ago.

ACRONYMS

EA	Environmental Authorisation
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
GPS	Global Positioning System
HIA	Heritage Impact Assessment
LSA	Later Stone Age
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
SAHRA	South African Heritage Resources Agency
WEF	Wind Energy Facility
WTG	Wind Turbine Generator

TABLE OF CONTENTS

DETAILS OF THE SPECIALIST	2
CONSULTANT DECLARATION OF INDEPENDENCE.....	2
EXECUTIVE SUMMARY	3
GLOSSARY.....	5
ACRONYMS.....	5
TABLE OF CONTENTS.....	6
1 INTRODUCTION AND TERMS OF REFERENCE	7
2 METHODOLOGY	7
2.1 RESTRICTIONS AND ASSUMPTIONS.....	10
3 SUMMARY OF FINDINGS OF THE 2017 AND 2019 STUDIES	10
3.1 2017 SURVEY	10
3.2 2019 SURVEY	10
4 POTENTIAL IMPACTS AND RECOMMENDED MITIGATION MEASURES	11
5 HERITAGE MANAGEMENT PLAN.....	11
5.1 HERITAGE RESOURCES REQUIRING MANAGEMENT	12
5.2 RESPONSIBILITY FOR THE MANAGEMENT OF HERITAGE RESOURCES.....	12
5.3 POTENTIAL IMPACTS TO IDENTIFIED HERITAGE RESOURCES: CONSTRUCTION, OPERATIONAL AND DECOMMISSIONING PHASES	13
5.4 STAFF AND CONTRACTOR AWARENESS	14
5.5 REVISION OF HMP.....	14
6 CONCLUSION	14
7 REFERENCES	15
APPENDIX 1: DETAILS OF RECORDED ARCHAEOLOGICAL SITES AND OCCURRENCES – HARTEBEESTHOEK EAST WEF	16

Figure 1: Location and final layout of the Hartebeesthoek East and West WEFs (red and yellow polygons respectively) and the extents of adjacent San Kraal and Phezukomoya WEFs (Source: Google Earth).....	8
Figure 2: 2017 (pale blue lines) and 2019 (pink lines) archaeological survey track plots and sites (blue and orange numbers respectively) superimposed on the current layout of the Hartebeesthoek East WEF (Source: Google Earth).	9

1 INTRODUCTION AND TERMS OF REFERENCE

ACO Associates CC was appointed by Arcus Consultancy Services South Africa (Pty) Ltd (Arcus), on behalf of EDF Renewables (South Africa) (Pty) Ltd (EDF Renewables), to conduct a pre-construction walkdown survey of the authorised Hartebeesthoek East Wind Energy Facility (WEF) located outside Noupoot in the Northern Cape (Figure 1).

The Hartebeesthoek East WEF has been subject to two previous archaeological assessments: in 2017 as part of the Environmental Impact Assessment (EIA) process for the San Kraal WEF (Hart et al, 2017b) and in 2019 as part of a Part 2 EA Amendment Application when the Hartebeesthoek East WEF was split off from the authorised San Kraal WEF (Gribble & Euston-Brown 2019d) (Figure 2).

The pre-construction survey was required as a condition (No. 39) of the Environmental Authorisation for the WEF issued in June 2018, to ground truth the authorised wind turbine generator (WTG) positions, internal WEF cable and roads alignments, substation sites, laydown areas, etc., to identify heritage resources which may be impacted by the construction, operation and decommissioning of the WEF, to assess their significance and provide recommendations for mitigation that can be incorporated into the project Environmental Management Programme (EMPr).

2 METHODOLOGY

Given the previous assessments of the site, the good coverage already achieved across much of the upland area that will be affected by the project and our knowledge of the heritage potential of the site, the pre-construction survey did not aim to resurvey the entire WEF layout, but rather to fill in gaps in previous survey coverage particularly inaccessible areas where there was the potential for archaeological sites and material to be present.

Time constraints and the difficult access to the WEF area meant that it was not possible to revisit this WEF during the 2021 survey programme. The pre-construction assessment below is based therefore on existing survey data collected in 2017 and 2019.

For those surveys members of the field team carried hand-held GPS receivers (using the WGS84 datum), pre-loaded with the footprint of the project elements and other data such as the farm boundaries and previously recorded sites, and these were used to log the survey tracks (Figure 2) and record the positions of any new heritage resources identified.

Team members were suitably qualified and experienced to date and characterise any heritage resources encountered during the survey.

No trial holes were dug and no material was removed from the project area. All observations were based on visible surface material.

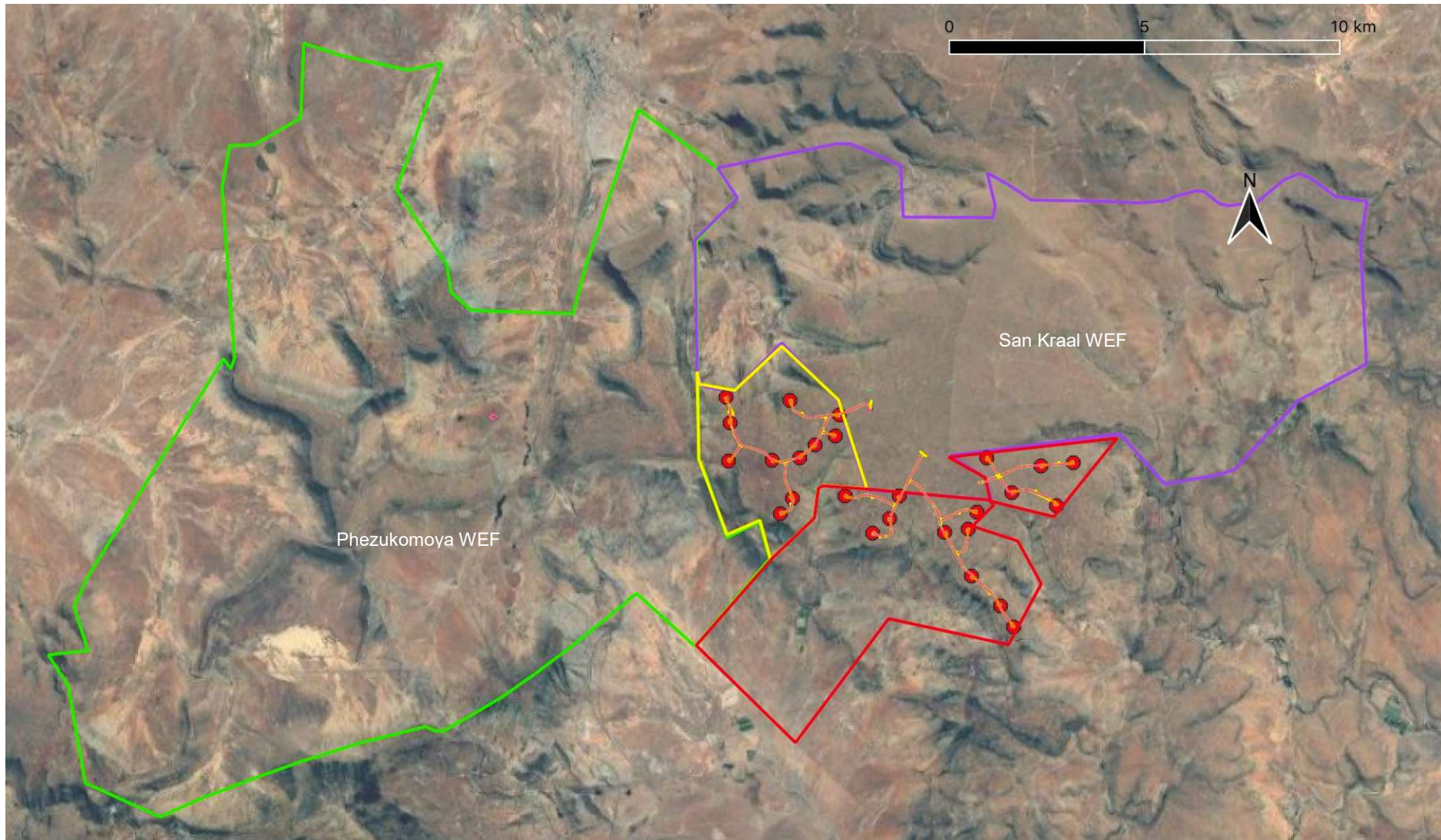


Figure 1: Location and final layout of the Hartebeesthoek East and West WEFs (red and yellow polygons respectively) and the extents of adjacent San Kraal and Phezukomoya WEFs (Source: Google Earth).

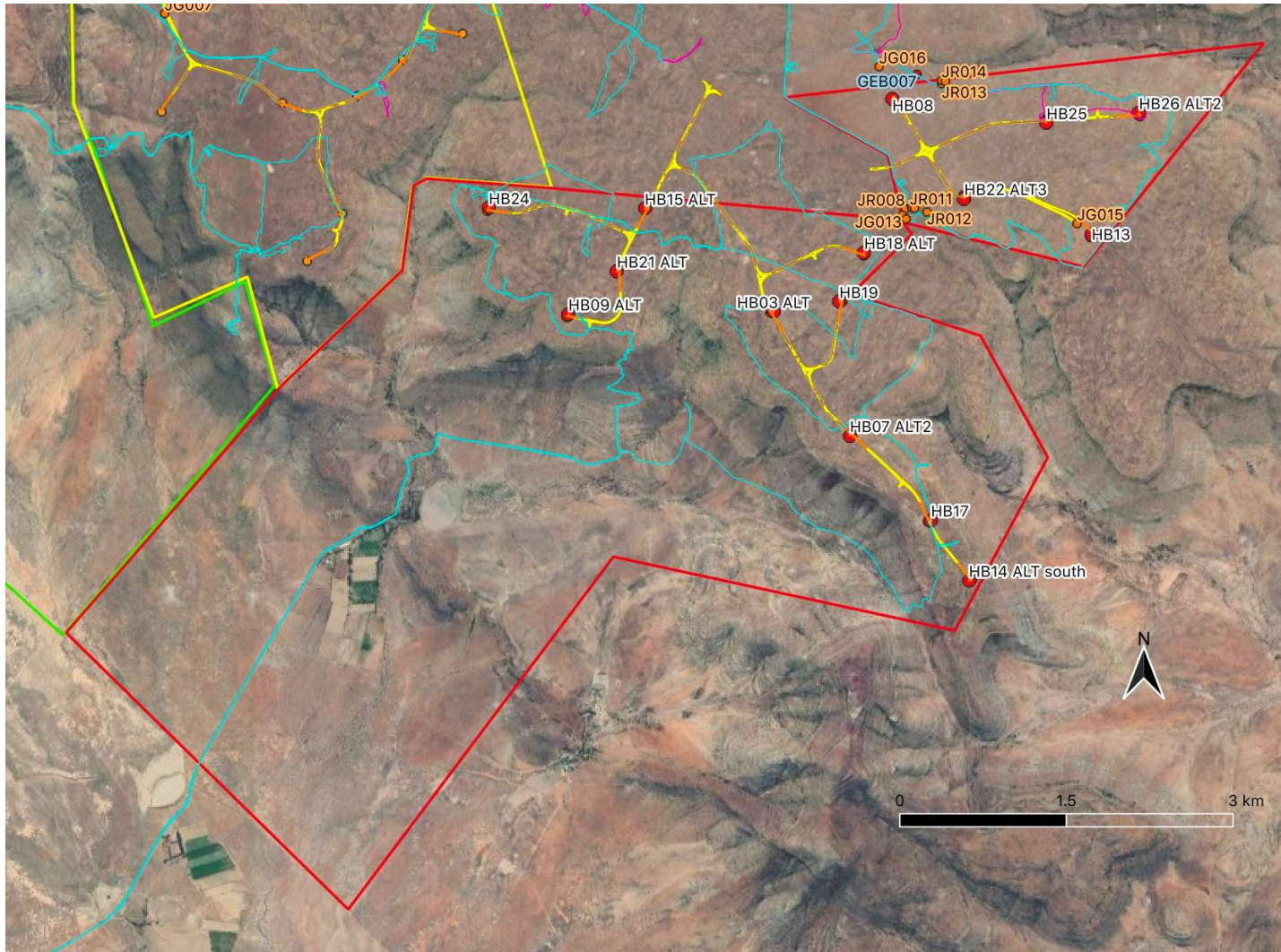


Figure 2: 2017 (pale blue lines) and 2019 (pink lines) archaeological survey track plots and sites (blue and orange numbers respectively) superimposed on the current layout of the Hartbeesthoek East WEF (Source: Google Earth).

2.1 Restrictions and Assumptions

Time constraints meant that it was not possible to revisit this WEF during the 2021 survey programme. The pre-construction assessment below is based therefore on existing survey data collected in 2017 and 2019.

These surveys found that ground visibility on the site was generally good, with vegetation cover not unduly affecting the survey outcome.

The combined coverage of the 2017 and 2019 surveys provides a good baseline understanding of the archaeological potential of the WEF area and the potential impacts of the project on heritage resources. Despite not being able to visit the site in 2021, the confidence in the findings set out later in this report is high.

3 SUMMARY OF FINDINGS OF THE 2017 AND 2019 STUDIES

The two survey visits to the Hartebeesthoek East WEF indicate that the pre-colonial heritage sensitivities are typical of what has been found in the area before: that like the Karoo in general, there are very few archaeological sites on the Kikvorsberge. These high ridges where the Hartebeesthoek East WEF infrastructure will be situated are dry, windswept and very cold in winter and seldom attracted more than passing prehistoric human occupation. Unless there is a rock shelter, a source of water or of stone raw material, these areas are not likely to be archaeologically sensitive.

Valley bottoms were more favoured by pre-colonial people for occupancy. Here there are normally sources of water, shelter from the prevailing winds as well as the potential for grazing small stock on or close to the sandy river beds. Also important were low ridges on or adjacent to flat plains. Khoikhoi kraals were almost always built adjacent to or against low ridges and cliffs. Anywhere there is a cluster of rock that provided shelter from the wind or a shallow cave inevitably has archaeological material associated with it.

3.1 2017 Survey

The 2017 EIA survey for the then San Kraal WEF identified two (2) clusters of historical structures and a single stone cairn within the footprint of what is now the Hartebeesthoek East WEF (see Hart et al 2017a). No archaeological material, rock engravings or San rock paintings were identified.

The historical clusters (**JR008-JR012/ JG013-JG014** and **JR013-JR015**) were located on or at the head of two ravines leading east off the mountaintop plateau where the WEF will be situated (Figure 2). They consisted of a series of stone-walled kraals of various sizes and the second complex included the remains of a shepherds' cottage (**JG014**) adjacent to the kraal. The stone cairn (**JG015**) may be the remains of a historical farm boundary marker. The sites are listed in Appendix 1 below.

3.2 2019 Survey

The 2019 field assessment took place as part of an EA Amendment Application when the Hartebeesthoek East WEF was split off from the authorised San Kraal WEF.

The site visit identified no further heritage sites in the areas surveyed.

4 POTENTIAL IMPACTS AND RECOMMENDED MITIGATION MEASURES

The design and layout of that portion of the San Kraal WEF which now comprises the Hartebeesthoek East WEF avoided the heritage sites recorded in the 2017 HIA and no significant impacts on archaeological sites and materials were expected. No specific mitigation measures were recommended.

The reduced number of WTGs in the layout of the Hartebeesthoek East WEF also avoids the identified heritage sites in the WEF area and the 2019 EA Amendment Report did not expect significant impacts on archaeological sites and materials. There is not likely to be any impact on identified archaeological sites or remains, and the likelihood of sites or material being found during earthworks is extremely low. No specific mitigation measures were proposed.

It is possible that archaeological sites and artefacts that have not yet been identified will be present within the Hartebeesthoek East WEF and may be subject to impacts arising from its construction. However, the survey work carried out on the site in 2017 and 2019, and the nature of the sites that have been recorded within the WEF area suggest that should such sites occur, they will tend to be isolated archaeological artefacts or thin open scatters of mainly MSA lithics on deflated erosion surfaces, which are of limited archaeological value and significance. It is unlikely that significant archaeological sites will be impacted by the construction of the WEF.

With regard to rock art and rock engravings, the geology of the WEF site does not lend itself to rock shelters where rock art may be present, and the type of patinated dolerite boulders which often have rock engravings were not noted on the site during the various surveys. It is recommended, however, that in the unlikely event that either rock art or rock engravings are encountered during the construction of the WEF, work must cease in their vicinity, they must be cordoned off and left *in situ* and SAHRA must be informed of the discovery so that a decision can be made about how to deal with them.

Should any human remains be encountered at any stage during earthworks associated with the project, work in the vicinity must cease immediately, the remains must be left *in situ* but made secure and the project archaeologist and SAHRA must be notified immediately so that a decision can be made about how to mitigate the find.

The Environmental Management Programme Report for the Hartebeesthoek East WEF requires no change in respect to the assessment of impacts on archaeological sites and materials. It will need to be updated, however, to reflect the mitigation measures recommended in this report.

5 HERITAGE MANAGEMENT PLAN

The purpose of this heritage management plan (HMP) is to provide a framework, under the EMP, for the management of heritage resources during the construction, operation and

decommissioning of the Hartebeesthoek East WEF. The management of the palaeontological resources present within the WEF is dealt with in separate HMP.

The objective of the HMP is to put in place clear and practical management actions to ensure that heritage resources within the WEF development are protected and conserved and, where they occur, impacts to these resources are appropriately managed and mitigated.

The HMP below identifies:

- What heritage resources require management;
- Who will carry out the management of heritage resources;
- Appropriate management and mitigation actions to be implemented to ensure that heritage resources are not negatively impacted during the construction, operation and decommissioning of the WEF; and
- Procedures and processes to follow in the event of negative impact to previously identified or new discovered heritage resources during the construction, operation and decommissioning of the WEF.

5.1 Heritage Resources Requiring Management

The known heritage resources within the Hartebeesthoek East WEF identified in the HIA and this pre-construction walkdown report are listed in Appendix 1 below and consist of several historical stone kraal complexes, a stone shepherd's hut, and a packed stone boundary marker.

These heritage sites and materials are protected by the National Heritage Resources Act (NHRA) (25 of 1999) which provides protection for various categories of heritage resource from unauthorised disturbance, damage, or destruction, thereby ensuring their protection and preservation for the future.

The identified heritage resources within the Hartebeesthoek East WEF have been graded, in terms of the provisions of section 3 of the NHRA and the gradings for each site are shown in Appendix 1 below. Grading provides an indication of the significance and heritage value of a heritage resource and, in the context of a development such as the Hartebeesthoek East WEF, is key to the management of such resources.

5.2 Responsibility for the Management of Heritage Resources

The Hartebeesthoek East WEF straddles the provincial border between the Eastern and Northern Cape and therefore, falls under the jurisdiction of both the Eastern Cape Provincial Heritage Resources Authority (ECPHRA) and the Northern Cape PHRA.

However, the management of archaeological resources in both the Eastern and Northern Cape is currently undertaken by SAHRA, on behalf of the two provincial agencies. Any management of heritage resources within the Eastern and Northern Cape must, therefore, follow the prescripts of the NHRA and the processes established by SAHRA.

The contact details for SAHRA are:

South African Heritage Resources Agency (SAHRA)	
Contact Person:	Mr P Hine (Manager: Archaeology, Palaeontology and Meteorites Unit)
Address:	111 Harrington Street, Cape Town, 8001
Tel:	021 462 4502
Email:	phine@sahra.org.za info@sahra.org.za
Website:	https://www.sahra.org.za

The ultimate responsibility for ensuring that heritage resources within the boundaries of the WEF are appropriately protected and managed during construction, operation, and decommissioning rests with the Project Company, EDF Renewables.

It is expected that the Project Company will appoint an independent environmental control officer (ECO) and/ or environmental officer (EO) to monitor the project compliance with the EMPr and conditions of the environmental authorisation.

The ECO and/or EO is expected to be in constant liaison with contractors and WEF staff and will be the key person(s) responsible for ensuring the effective day to day management of heritage resources for the project. The ECO and/ or EO will be expected to:

- Monitor the implementation of and compliance with the heritage management specifications and mitigation measures set out in the EMPr;
- Keep a register of compliance/non-compliance with the heritage management specifications;
- Identify and assess previously unforeseen, actual or potential impacts on heritage resources; and
- Ensure that regular heritage management monitoring reports are produced.

5.3 *Potential Impacts to Identified Heritage Resources: Construction, Operational and Decommissioning Phases*

The final layout of the WEF does not impact any recorded archaeological heritage resources and no site-specific archaeological mitigation measures have thus been recommended.

However, the following general measures must be implemented to ensure that there are no negative impacts to heritage resources during the various phases of the development:

Currently unidentified archaeological sites, artefacts and structures may be present within the Hartebeesthoek East WEF and may be subject to impacts arising from activities associated with the construction, operation and decommissioning of the WEF.

In the unlikely event that archaeological material, rock art or rock engravings or historical structures are encountered during the construction of the WEF, work must cease in the vicinity, and they must be cordoned off and left *in situ*. SAHRA must be informed of the discovery and a suitably qualified archaeologist must be called in to investigate the occurrence so that a decision can be made about how to deal with it.

The identified stone-built structures and any others encountered within the WEF must be protected from vandalism or damage and no stone may be robbed from such structures.

In the event that human remains are uncovered during the construction of the WEF, the Contractor must immediately stop work in that area and notify the ECO and/ or EO who must ensure that the remains are made secure and left in situ. The project archaeologist and SAHRA must immediately be informed of the find so that a decision can be made about how to mitigate the remains. This may require inspection by the archaeologist to determine whether mitigation should take place and what form that mitigation should take. An application to SAHRA for an emergency permit for the archaeologist to excavate and recover the remains may also be required.

5.4 Staff and Contractor Awareness

The ECO and / or EO must ensure that the Contractor(s) and all site crews / staff are made aware of the heritage resources on the site, the mitigation measures set out above, and the steps to take if human remains or new archaeological material is encountered on site.

It is recommended that this information is presented in the site induction programme for project staff and in any refresher programmes that may occur.

5.5 Revision of HMP

This HMP is a living document that can and must be reviewed and updated to reflect any changes to the heritage information for the site or the management protocols set out above.

The HMP must be revised every five (5) years, or more regularly should circumstances require it.

6 CONCLUSION

This assessment has found that while a number of significant heritage resources are present in Hartebeesthoek East WEF, these will not be impacted by the construction of the WEF. Provided the mitigation measures recommended in this report are implemented, the overall impact of the construction of the WEF is likely to be of very low significance and tolerable from an archaeological perspective and that the proposed activity is acceptable.

7 REFERENCES

Gribble, J. & Euston-Brown, G.L. 2019d. *Archaeological Amendment Report: Hartebeesthoek East Wind Energy Facility, Noupoort, Northern Cape*. Unpublished report prepared for Arcus Consulting. ACO Associates.

Hart, T.G., Gribble, J. and Robinson, J. 2017b. *Heritage impact assessment for the proposed San Kraal Wind Energy Facility to be situated in the Northern Cape*. Unpublished report prepared for Arcus Consulting. ACO Associates.

APPENDIX 1: DETAILS OF RECORDED ARCHAEOLOGICAL SITES AND OCCURRENCES – HARTEBEESTHOEK EAST WEF

Note: More than one coordinate has been recorded for certain sites below, to provide an indication of the extent of the site concerned.

Site	Lat S	Lon E	Type	Description	Grading
2017 Survey					
JR008	-31.265264°	25.044311°	Stone Kraal	Large kraal about 100m ² with track running through it. Crosses into HBHK farm, includes a spring.	3C
JR009	-31.265125°	25.044786°	Stone Kraal	Smaller rock kraal adjacent to JR008.	3C
JR010	-31.265135°	25.044889°	Stone Kraal	Kraal butted up against rock shelter used as natural kraal.	3C
JR011	-31.265184°	25.045084°	Stone Kraal	Smaller kraal adjacent to JR008.	3C
JR012	-31.265457°	25.046036°	Stone Kraal	Small rock shelter kraal SE of other kraals. Kraals seem to face erosion gully downstream from spring. Nice sense of place. No stone artefacts observed.	3C
JG013	-31.265672°	25.044031°	Stone Kraal	Historical kraal complex.	3C
JG014	-31.265915°	25.044392°	Stone Kraal	Large stone packed kraal on opposite side of stream to others in same complex	3C
JR013	-31.256548°	25.047231°	Stone Kraal	Large kraal stone wall about 50 x 50 m.	3C
JR015	-31.256386°	25.047534°			
JR014	-31.256381°	25.047226°	Stone Structure	Shepherds' cottage adjacent to kraal.	3C
JG015	-31.266264°	25.058187°	Stone Structure	Stone cairn on rocky platform. Historical.	3C
2019 Survey					
No sites recorded					

