

PRE-CONSTRUCTION ARCHAEOLOGICAL WALKDOWN REPORT FOR THE SAN KRAAL 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

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DETAILS OF THE SPECIALIST

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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', with a large, stylized flourish at the end.

Name of company (if applicable): ACO Associates CC

Date: 16 February 2022

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 walkdown survey of the authorised San Kraal Wind Energy Facility located outside Noupoot in the Northern Cape.

The San Kraal WEF has been subject to two previous archaeological assessments as part of the Environmental Impact Assessment in 2017 and a Part 2 Environmental Authorisation Amendment Application in 2019 when the authorised WEF was split into two: the San Kraal and Hartebeesthoek East WEFs.

Given these previous assessments of the site, the coverage already achieved, 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 in accessible areas where there was the potential for archaeological sites and material to be present.

Findings: The three surveys, which took place in 2017, 2019 and 2021, of the San Kraal WEF indicate that there are very few archaeological sites on the Kikvorsberge, which tends to confirm what has proved to generally be the case across the Karoo: that high ridges, which are dry, windswept and very cold in winter, seldom attracted more than passing prehistoric human occupation.

The surveys identified a small number of archaeological occurrences or sites and a number of historical period kraals and ruins within the proposed WEF area. The majority of the archaeological sites consisted of surface scatters of small numbers of heavily patinated hornfels stone artefacts of Middle Stone Age origin and of low archaeological significance. No rock engravings or San rock paintings were identified. The historical period sites included the ruins of three stone-built farm complexes on top of the mountains containing dwelling and kraals, and the surviving farm buildings at Hartebeeshoek.

The final design and layout of the San Kraal WEF has taken the results of the 2017 and 2019 archaeological assessments into account and the reduction in the number of archaeological sites likely to be affected by the WEF is a clear advantage of the revised San Kraal layout.

With respect to the sites identified within the WEF area in 2017, the Heritage Impact Assessment (HIA) made the following recommendation:

- JG017-JG019: The HIA recommended that a collection of the artefactual material from this MSA stone scatter, located within 30 m of a proposed turbine location (WTG 78), should be take place prior to commencement of the construction of the WEF.

In the current layout of the WEF, WTG78 has been replaced with WTG 607 which is now more than 200 m distant from JG017-JG019. It is unlikely therefore that this site will now be impacted by the construction of the WEF and it is recommended that instead of a collection of the artefactual material, a 50 m no-go area is implemented around the site.

- As part of the constraints mapping for the WEF during the EIA process, an exclusion zone / no-go area was placed around the historical farm complex JR003, JR004, JR006 and JR007 (J143-148, J149-155, J156-166, G032-040 in 2021). It is recommended that this complex of sites remains a no-go area and that the better-defined exclusion zone, created from the more detailed mapping carried out as part of the 2021 survey is implemented.

The 2019 EA Amendment report for San Kraal found that the stone 'wolwehok' (J036) and the isolated MSA flake (J037) were likely to be impacted by one of the WTGs and recommended the following in respect of the former:

- The packed stone 'wolwehok' (JG036) will be affected by the construction of WTG 409 and must either be recorded by an archaeologist prior to construction work, or the turbine location must be adjusted to avoid the site. If the latter option is chosen, the site must be cordoned off during construction activities and treated as a no-go area by WEF staff and contractors.

In the current layout of the WEF, the position of WTG 409 has not changed and the 'wolwehok' may thus still to be subject to impact during the construction of the WEF. The 2019 recommendation to either fully record the structure before construction or to cordon it off as a no-go area thus remains valid. If it is a no-go area, it is further recommended that the buffer should be no less than 30 m around the structure.

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.

Based on the current WEF layout, the remainder of the archaeological and historical sites identified in 2017 and 2019 are sufficiently distant from WEF infrastructure not to be affected, or of sufficiently low heritage significance (i.e. not conservation-worthy), such as the MSA flake (J037), that their loss, should it occur, would be tolerable. Furthermore, neither of the two new archaeological occurrences recorded in 2021 (J167-169 and G041) will be at risk from the WEF: the former because this Later Stone Age Lockshoek scatter lies in an area that will not be subject to impacts from the WEF and the latter because the WTG 101-104 line, which passed close to this site, has been removed from the latest version of the WEF layout since the survey took place.

It is likely that archaeological sites and artefacts that have not been identified will be present within the San Kraal WEF and may be subject to impacts arising from its the construction. However, the extensive survey work carried out on the WEF site and the nature of the sites that have been recorded within the WEF 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.

The Environmental Management Programme Report for the San Kraal 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 revised mitigation measures recommended in this report.

Conclusion: This assessment has found that while a small number of significant heritage resources may be impacted by the construction of the San Kraal 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 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

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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 San Kraal Wind Energy Facility (WEF) located outside Noupoot in the Northern Cape (Figure 1).

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

The pre-construction was required as a condition (No. 39, 40, and 139) of the Environmental Authorisation for the WEF issued in October 2021, 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).

Given the previous assessments of the site, the coverage already achieved 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 in accessible areas where there was the potential for archaeological sites and material to be present.

2 METHODOLOGY

A survey of areas of the WEF not previously surveyed was undertaken by John Gribble and Gail Euston-Brown of ACO Associates on 16 October 2021.

Both 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 3) and record the positions of any new heritage resources identified.

This was the third and second visit to the site by John Gribble and Gail Euston-Brown, respectively, and both 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.

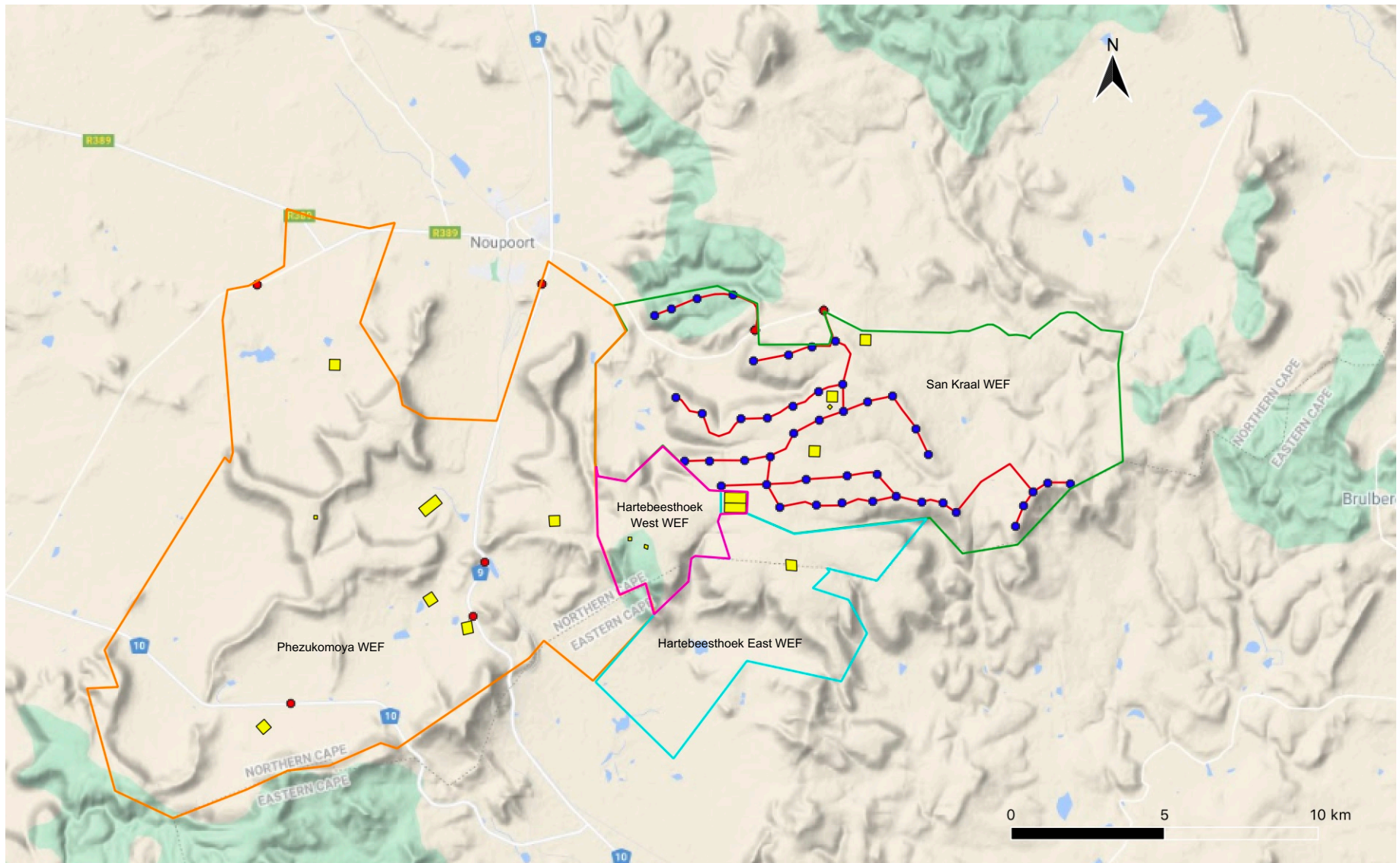


Figure 1: Location and final layout of the San Kraal WEF and the extents of adjacent Phezukomoya, and Hartebeethoek East and West WEFs (Source: Google Earth).

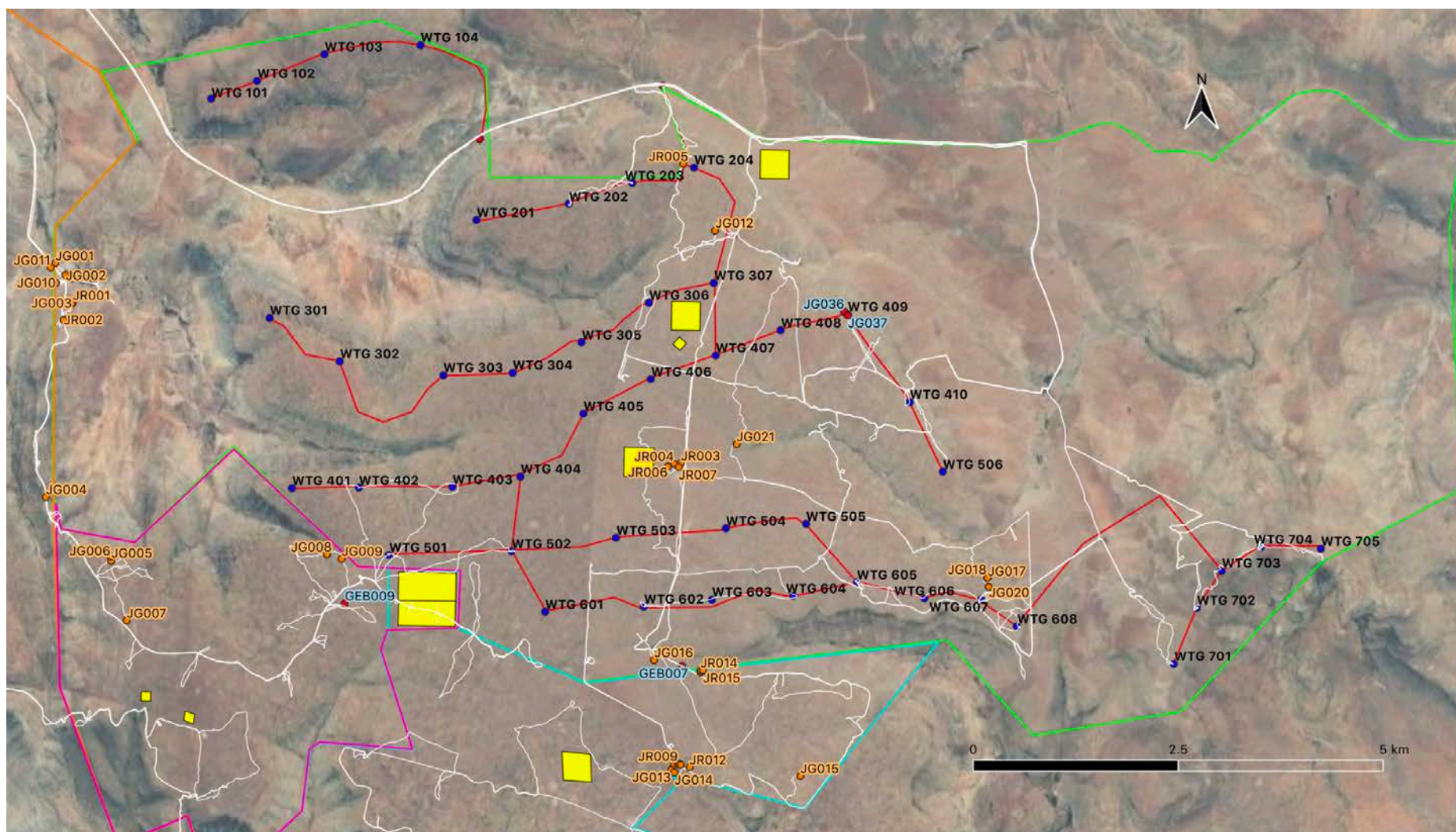
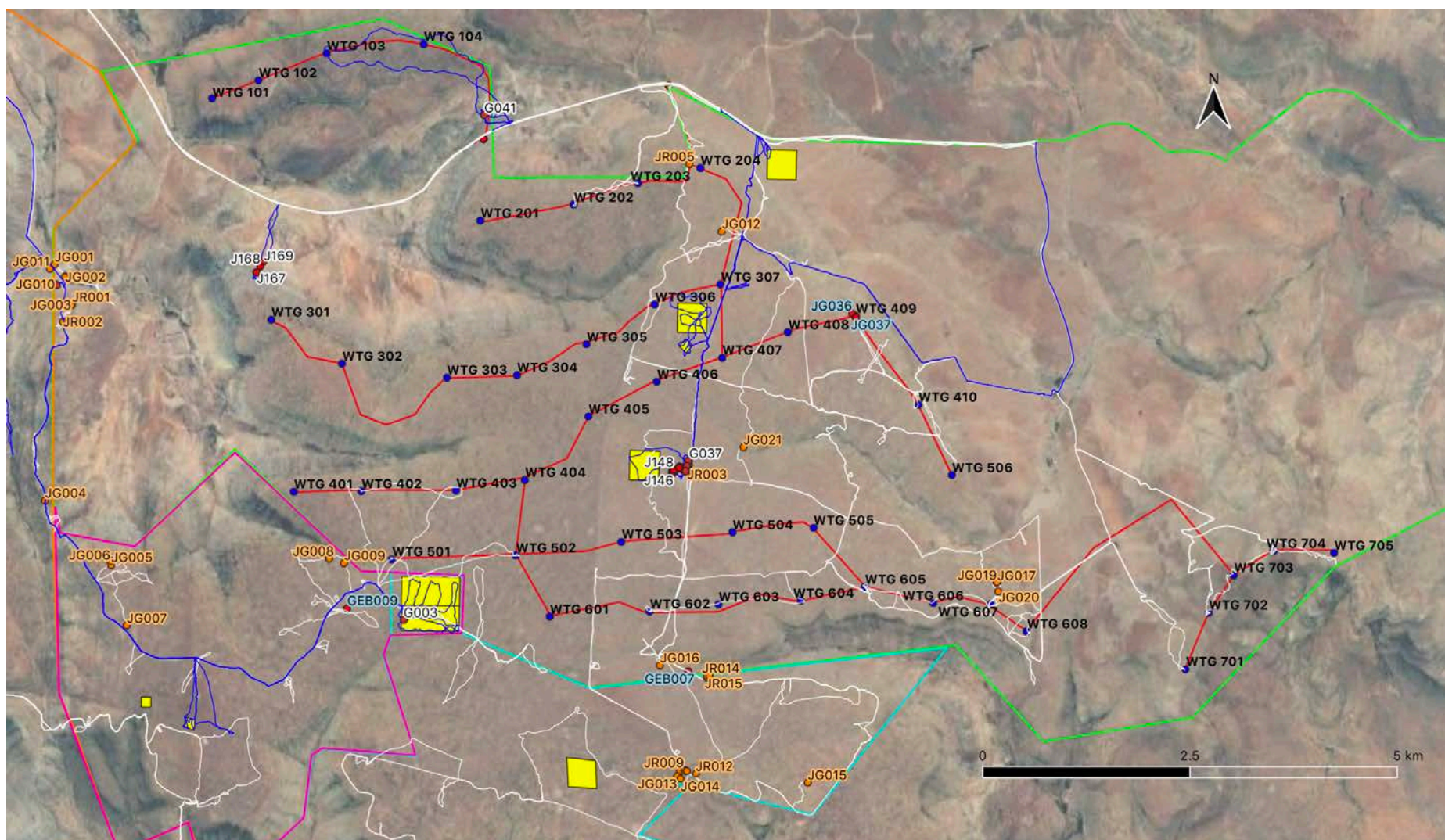


Figure 2: 2017 and 2019 archaeological survey track plots (white lines) and sites (blue and orange numbers) superimposed on the current layout of the San Kraal WEF (Source: Google Earth).



2.1 Restrictions and Assumptions

Access to the WEF site was generally good, as was ground visibility, with vegetation cover not unduly affecting the survey outcome. However, some areas of the site were very remote and inaccessible, both by vehicle and on foot and could not be reached in the time available.

While it was thus not possible to visit all current project components during this survey, the combined overall coverage of the 2017 and 2019 surveys, coupled with the most recent site visit information has provided a good baseline understanding of the archaeological potential of the WEF area, which is generally very low.

Many of the proposed WTG positions, as well as a good portion of infrastructure alignments for the San Kraal WEF have, however, been archaeologically surveyed and the confidence in the findings set out later in this report is thus high.

3 SUMMARY OF FINDINGS OF THE 2017, 2019 and 2021 STUDIES

The three surveys of the San Kraal WEF indicate that there are very few archaeological sites on the Kikvorsberge which tends to confirm what has proved to generally be the case across the Karoo: that high ridges, which are dry, windswept and very cold in winter, 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.

3.1 2017 Survey

The 2017 EIA survey identified 19 archaeological occurrences or sites and a number of historical period kraals and ruins within the proposed WEF area (see Hart et al, 2017b).

The majority of the archaeological sites consisted of surface scatters of small numbers of heavily patinated (indicating long exposure to the elements) hornfels stone artefacts of Middle Stone Age (MSA) origin of low archaeological significance. No rock engravings or San rock paintings were identified.

The historical period sites included the ruins of three stone-built farm complexes on top of the mountains containing dwelling and kraals, and the surviving farm buildings at Hartebeeshoek.

Of these sites, 16 remain within the current footprint of the San Kraal WEF established by the 2019 EA amendment application and these are listed in Appendix 1 along with the sites recorded in 2019 and 2021.

3.2 2019 Survey

The 2019 field assessment took place as part of a EA Amendment Application which split the authorised San Kraal WEF into two separate WEFs: San Kraal and Hartebeesthoek East. This meant a reduction in the area covered by the San Kraal WEF, the number of WTGs and changes to the layout, and required ground-truthing as part of the EA amendment process.

The 16 sites found in 2017 and listed in Appendix 1 remained within the new boundary of the amended San Kraal WEF, although changes to the layout and cable/ road alignments, and the discarding of the San Kraal 132kV Option 2 overhead line meant that the WEF would now impact none of these sites.

The 2019 archaeological field survey identified one additional archaeological occurrence (**J037** - an isolated MSA stone flake) and two further historical structures (**GEB007**, **J036**), one of which is the remains of a 'wolwehok', within the footprint of the San Kraal WEF.

These sites are listed in Appendix 1 along with the sites recorded in 2017 and 2021.

3.3 2021 Pre-Construction Survey

The 2021 pre-construction survey concentrated on visiting a number of infrastructure areas within the WEF and a new WTG line (WTG101-104) for input into the final EMPr and final microsituated turbine layout.

Aside from two additional archaeological occurrences (**J167-169**; **G041**) and detail of the extent of the ruined historical farm complex located in 2017 near one of the WEF infrastructure areas (**J143-148**, **J149-155**, **J156-166**, **G032-040**), no further heritage resources were identified within the San Kraal WEF by the survey (Figure 4).

The sites recorded in 2021 are listed in Appendix 1 along with those previously recorded in 2017 and 2019.

4 POTENTIAL IMPACTS AND RECOMMENDED MITIGATION MEASURES

The current design and layout of the San Kraal WEF has taken the results of the 2017 and 2019 archaeological assessments into account and the reduction in the number of archaeological sites likely to be affected by the WEF is a clear advantage of the revised San Kraal layout.

With respect to the sites identified within the WEF area in 2017, the HIA made the following recommendation:

- **JG017-JG019**: The HIA recommended that a collection of the artefactual material from this MSA stone scatter, located within 30 m of a proposed turbine location (WTG 78), should be take place prior to commencement of the construction of the WEF.

In the current layout of the WEF, WTG78 has been replaced with WTG 607 which is now more than 200 m distant from **JG017-JG019**. It is unlikely therefore that this site will now be impacted by the construction of the WEF and it is recommended that instead of a collection of the artefactual material, a 50 m no-go area is implemented around the site (Figure 5).

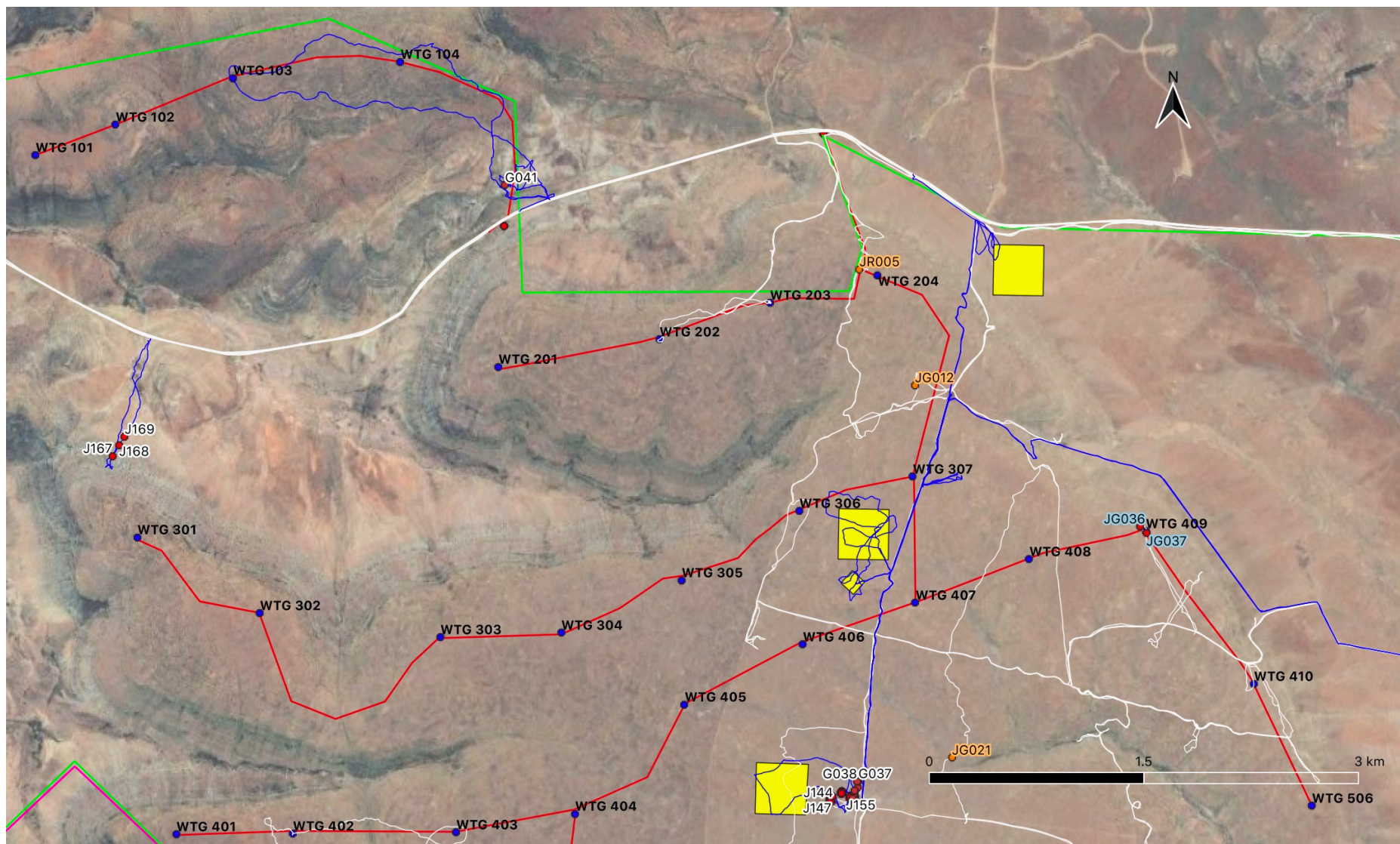


Figure 4: Detail of the sites recorded in the 2021 pre-construction survey (white numbers). (Source: Google Earth)



Figure 5: Proposed 50 m no-go area to be implemented around the cluster of MSA lithics scatters J017-J019 (Source: Google Earth).

As part of the constraints mapping for the WEF during the EIA process, an exclusion zone / no-go area was placed around the historical farm complex **JR003, JR004, JR006 and JR007 (J143-148, J149-155, J156-166, G032-040** in 2021) (see Figure 6).

It is recommended that this complex of sites remains a no-go area and that the better-defined exclusion zone, created from the more detailed mapping carried out as part of the 2021 survey and shown on Figure 6, is implemented.

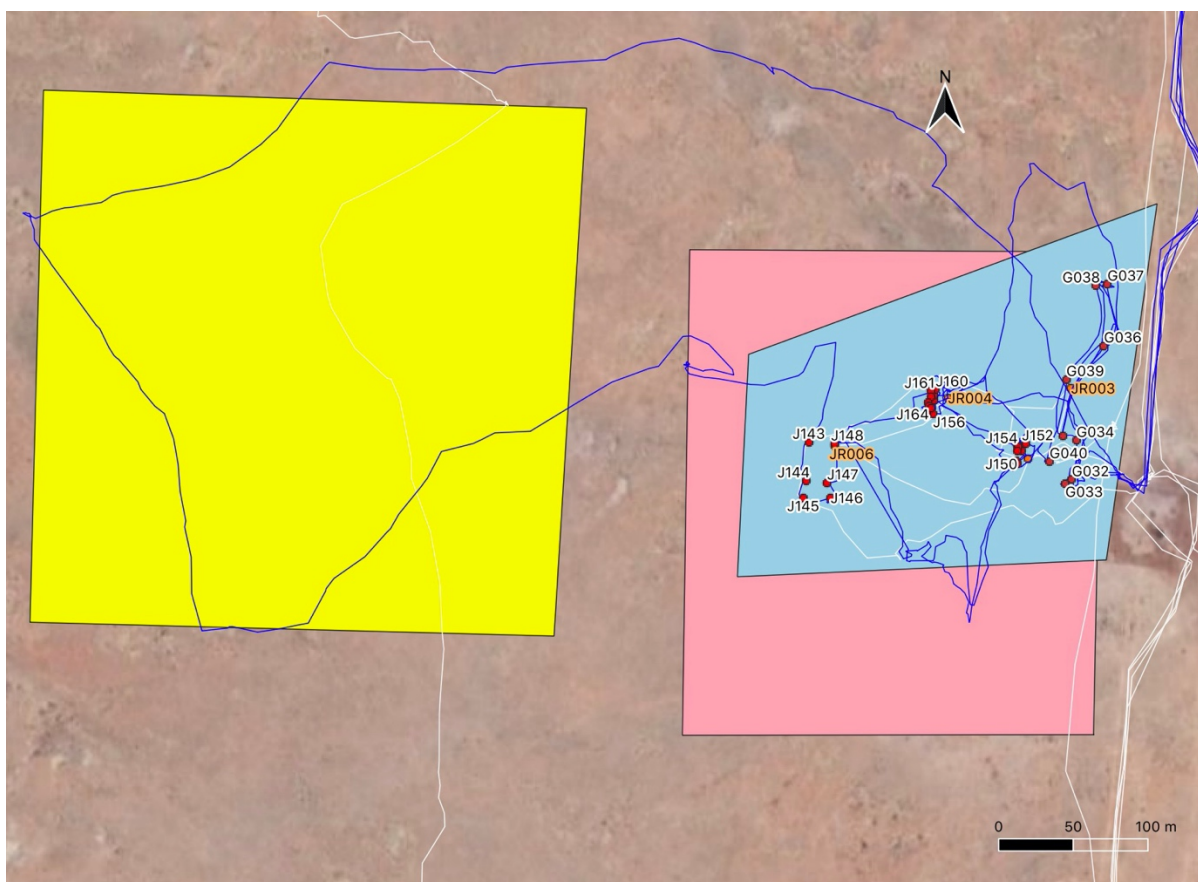


Figure 6: No-go area proposed around historical farm complex in 2017 (pink polygon) with the revised no-go area proposed following the 2021 survey (blue polygon). The adjacent substation site is shown as the yellow polygon (Source: Google Earth).

The 2019 EA Amendment report for San Kraal found that the stone ‘wolwehok’ (**J036**) and the isolated MSA flake (**J037**) were likely to be impacted by one of the WTGs and recommended the following in respect of the former:

- The packed stone 'wolwehok' (**JG036**) will be affected by the construction of WTG 409 and must either be recorded by an archaeologist prior to construction work, or the turbine location must be adjusted to avoid the site. If the latter option is chosen, the site must be cordoned off during construction activities and treated as a no-go area by WEF staff and contractors.

In the current layout of the WEF, the position of WTG 409 has not changed and the 'wolwehok' may thus still be subject to impact during the construction of the WEF. The 2019 recommendation to either fully record the structure before construction or to cordon it off as a no-go area thus remains valid. If it is a no-go area, it is further recommended that the buffer should be no less than 30 m around the structure.

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.

Based on the current WEF layout, the remainder of the archaeological and historical sites identified in 2017 and 2019 are sufficiently distant from WEF infrastructure not to be affected.

or of sufficiently low heritage significance (i.e. not conservation-worthy), such as the MSA flake (**J037**), that their loss, should it occur, would be tolerable. Furthermore, neither of the two new archaeological occurrences recorded in 2021 (**J167-169** and **G041**) will be at risk from the WEF: the former because this Later Stone Age Lockshoek scatter lies in an area that will not be subject to impacts from the WEF and the latter because the WTG 101-104 line, which passed close to this site, has been removed from the latest version of the WEF layout since the survey took place.

It is likely that archaeological sites and artefacts that have not been identified will be present within the San Kraal WEF and may be subject to impacts arising from its the construction. However, the extensive survey work carried out on the WEF site and the nature of the sites that have been recorded within the WEF 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.

The Environmental Management Programme Report for the San Kraal 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 revised 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 San Kraal 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 San Kraal WEF identified in the HIA and this pre-construction walkdown report are listed in Appendix 1 below and consist of MSA and LSA archaeological occurrences or sites and a number of historical period kraals and ruins.

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 San Kraal 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 San Kraal WEF, is key to the management of such resources.

5.2 Responsibility for the Management of Heritage Resources

The San Kraal WEF is located in the Northern Cape and therefore, falls under the jurisdiction of the Northern Cape Provincial Heritage Resources Authority.

However, the management of archaeological resources in the Northern Cape is currently undertaken by SAHRA, on behalf of the provincial agency. Any management of heritage resources within the 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

Sixteen (16) sites found in 2017 and listed in Appendix 1 remain within the final boundary of the amended San Kraal WEF, although changes to the layout and cable/ road alignments, mean that the WEF will now not impact any of these sites.

Two of the three additional sites identified in the 2019 field survey within the footprint of the San Kraal WEF (**JG036** and **JG037**) were located close to the proposed position of WTG 409. This WTG has been shifted slightly to the west in the final WEF layout and the likelihood of impact to the packed stone 'wolwehok' (**JG036**) is thus reduced.

No further heritage occurrences that will be subject to impact from the final layout of the San Kraal WEF were recorded during the 2021 walkdown survey.

Thus there are unlikely to be impacts to any of the identified heritage resources arising from the construction, operation and decommissioning of the WEF but the following no-go areas/ exclusion zones must be implemented:

- A 50 m no-go area around the **JG017-JG019**;
- A 30 m no-go area around the **JG036**; and
- The exclusion zone/ no-go area placed around the historical farm complex **JR003**, **JR004**, **JR006** and **JR007** (**J143-148**, **J149-155**, **J156-166**, **G032-040** in 2021) must be retained and implemented, although using the better-defined configuration shown in Figure 6 above.

No other site-specific archaeological mitigation measures have been recommended for the WEF, but 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 San Kraal 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, 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 be 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 small number of significant heritage resources may be impacted by the construction of the San Kraal 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 low significance and tolerable from an archaeological perspective and that the proposed activity is acceptable.

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APPENDIX 1: DETAILS OF RECORDED ARCHAEOLOGICAL SITES AND OCCURRENCES – SAN KRAAL WEF

Green highlights = mitigation required.

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					
JG001	-31.218311°	24.976559°	Historical Building	Historical homestead complex, rock wall building.	3C
JG002	-31.219443°	24.977702°	Historical Building	Farmhouse, not in use. Wooden floor, matchboard ceilings, double glass front door. Ash heap in the field out the front.	3C
JG003/ JR001	-31.222025° / - 31.21870°	24.978396° / 24.97648°	Stone Kraal	Semicircular stone walled kraal built against a low rocky ridge. Likely to be Khoi rather than historical. No artefacts found.	3C
JG010	-31.220126°	24.976634°	Stone Structure	Building foundation. Upslope from a ruin. Age hard to determine. Behind packed stone historical kraal and barn complex. Stone age lithics noted in vicinity of the ruin and barn/ kraal complex.	3C
JR002	-31.223593°	24.977483°	Lithics	Hornfels core, radial. Found on ascent of mountain above farm. Retouched flakes, hornfels.	NCW
JR003	-31.237027°	25.045103°	Historical Farm Complex	Historical homestead complex, rock wall building.	3C
JR004	-31.237077°	25.044362°		Ruin of a house, two rooms, rock walls. Re-recorded as J149-J155 in 2021	
JR006	-31.237321°	25.043682°		Large kraal rock wall behind (west) of JR003 and JR004. No stone artefacts present. Re-recorded as J143-J148 in 2021	
JR007	-31.237388°	25.044846°		Stone wall and ruined house directly west of JR003 and east of JR004. No stone artefacts observed. Re-recorded as J156-J166 in 2021	
JG012	-31.215235°	25.048868°	Lithics	Rocky deflation with scatter of weathered MSA flakes.	NCW

JG016	-31.255417°	25.042180°	Stone Kraal	Packed stone kraal. Approx. 30 x 20 m	3C
JG017	-31.247626°	25.078736°	Lithics	Artefact scatter MSA silcrete core, located on NE side of rocky outcrop 30m from WTG78.	3C
JG018	-31.247650°	25.078614°		Small scatter of MSA artefacts patinated including thumbnail scraper.	3C
JG019	-31.247760°	25.078694°			
JG020	-31.248576°	25.078860°	Lithics	Further scatter of stone artefacts in the lee of rocky shelf.	3C
JG021	-31.235225°	25.051193°	Lithics	Single, patinated MSA flake	NCW
2019 Survey					
GEB007	-31.255957°	25.045228°	Stone Structure	Rectangular packed stone structure. Approx. 2 x 4 m	3C
JG036	-31.222813°	25.063023°	Stone Structure	Packed stone 'wolwehok' approx. 1 x 3 m in size	3C
JG037	-31.223181°	25.063396°	Lithics	Single heavily patinated hornfels flake. MSA	NCW
2021 Survey					
J143	-31.237303°	25.043525°	Stone Kraal	Large rectangular stone-walled kraal with smaller kraal attached to the southern end. Previously recorded as JR006	3C
J144	-31.237502°	25.043508°			
J145	-31.237589°	25.043491°			
J146	-31.237591°	25.043655°			
J147	-31.237513°	25.043635°			
J148	-31.237312°	25.043683°			
J149	-31.237400°	25.044774°	Stone Structure	Ruined stone-walled house. Three rooms. Previously recorded as JR004	3C
J150	-31.237416°	25.044782°			
J151	-31.237348°	25.044806°			
J152	-31.237311°	25.044831°			

J153	-31.237320°	25.044780°			
J154	-31.237325°	25.044784°			
J155	-31.237349°	25.044782°			
J156	-31.237157°	25.044272°	Stone Structure	Ruined stone-walled house. Previously recorded as JR007	3C
J157	-31.237103°	25.044262°			
J158	-31.237088°	25.044279°			
J159	-31.237061°	25.044279°			
J160	-31.237033°	25.044288°			
J161	-31.237041°	25.044261°			
J162	-31.237070°	25.044260°			
J163	-31.237098°	25.044244°			
J164	-31.237117°	25.044250°			
J165	-31.237156°	25.044233°			
J166	-31.237128°	25.044260°			
G032	-31.237496°	25.045108°	Stone Structure	Stone terracing below and beyond house J156-J166. Constructed of single line of large rectangular rocks. Crosses the low point of the shallow valley north of the ruined house before terminating at a large upright stone.	3C
G033	-31.237516°	25.045069°			
G034	-31.237294°	25.045136°			
G035	-31.237271°	25.045056°			
G036	-31.236807°	25.045301°			
G037	-31.236489°	25.045322°	Stone Structure		3C
G038	-31.236498°	25.045251°			

G039	-31.236980°	25.045075°		Stone terracing behind terrace G032-G037 but also below house. Less heavily constructed of single line of smaller stone blocks rectangular rocks. Crosses the low point of the shallow valley north of the ruined house and also terminating near the large upright stone.	
G040	-31.237403°	25.044974°			
G041	-31.204490°	25.023128°	Stone Scatter	Small open stone scatter ± 20 x 15 m in extent in an exposed gully between two rock outcrops. Unpatinated hornfels. LSA (Lockshoek). Core, some chunks and flakes (one with retouch) noted. About 2 pieces/m ²	3C
J167	-31.219035°	24.998483°	Stone Scatter	Scatter of lightly patinated hornfels lithics in gully and area of sheetwash exposed by erosion. Extends from J167 to at least J169 roughly 140 m down the slope. Number of endscrapers noted, core scraper, and large core. LSA, probably Lockshoek. On slope below a large collapsing overhang. No archaeology in overhang except for a single large piece of comb-stamped Khoi pottery.	3C
J168	-31.218469°	24.998897°			
J169	-31.218000°	24.999245°			

CV – JOHN GRIBBLE

(Last updated – 30 September 2021)

Name: John Gribble
Profession: Archaeologist (Maritime)
Date of Birth: 15 November 1965
Parent Firm: ACO Associates cc
Position in Firm: Senior Archaeologist
Years with Firm: 4
Years of experience: 32
Nationality: South African
HDI Status: n/a

Education:

1979-1983 Wynberg Boys' High School
1986 BA (Archaeology), University of Cape Town
1987 BA (Hons) (Archaeology), University of Cape Town
1990 Master of Arts, (Archaeology) University of Cape Town

Employment:

- September 2017 – present: ACO Associates, Senior Archaeologist and Consultant
- 2014-2017: South African Heritage Resources Agency, Manager: Maritime and Underwater Cultural Heritage Unit
- 2012-2018: Sea Change Heritage Consultants Limited, Director
- 2011-2012: TUV SUD PMSS (Romsey, United Kingdom), Principal Consultant: Maritime Archaeology
- 2009-2011: EMU Limited (Southampton, United Kingdom), Principal Consultant: Maritime Archaeology
- 2005-2009: Wessex Archaeology (Salisbury, United Kingdom), Project Manager: Coastal and Marine
- 1996-2005: National Monuments Council / South African Heritage Resources Agency, Maritime Archaeologist
- 1994-1996: National Monuments Council, Professional Officer: Boland and West Coast, Western Cape Office

Professional Qualifications and Accreditation:

- Member: Association of Southern African Professional Archaeologists (ASAPA) (No. 043)
- Principal Investigator: Maritime and Colonial Archaeology, ASAPA CRM Section
- Field Director: Stone Age Archaeology, ASAPA CRM Section
- Class III Diver (Surface Supply), Department of Labour (South Africa) / UK (HSE III)

Experience:

I have more than 25 years of professional archaeological and heritage management experience. After completing my postgraduate studies and a period of freelance

archaeological work in South Africa and aboard, I joined the National Monuments Council (NMC) (now the South African Heritage Resources Agency (SAHRA)) in 1994. In 1996 I became the NMC's first full-time maritime archaeologist and in this regulatory role was responsible for the management and protection of underwater cultural heritage in South Africa under the National Monuments Act, and subsequently under the National Heritage Resources Act.

In 2005 I moved to the UK to join Wessex Archaeology, one of the UK's biggest archaeological consultancies, as a project manager in its Coastal and Marine Section. In 2009 I joined Fugro EMU Limited, a marine geosurvey company to set up their maritime archaeological section. I then spent a year at TUV SUD PMSS, an international renewable energy consultancy, where I again provided maritime archaeological consultancy services to principally the offshore renewable and marine aggregate industries.

In August 2012 I established Sea Change Heritage Consultants Limited, a maritime archaeological consultancy. Sea Change traded until 2018, providing archaeological services to a range of UK maritime sectors, including marine aggregates and offshore renewable energy.

Relevant maritime experience includes specialist archaeological consultancy for more than two dozen offshore renewable energy projects and aggregate extraction licence areas in UK waters including:

- Lynn and Inner Dowsing OWF;
- Humber Gateway OWF;
- Sheringham Shoal OWF;
- Race Bank OWF;
- Docking Shoal OWF;
- Triton Knoll OWF;
- Neart na Gaoithe OWF;
- Dogger Bank OWF;
- Hornsea OWF;
- Navitus Bay OWF;
- Aggregate Area 392/393, Hilbre Swash;
- Area 478, East English Channel;
- Area 372/1, North Nab;
- Areas 401 & 2;
- Area 466, North West Rough; and
- Area 447, Cutline.

In the UK I was also involved in strategic projects which developed guidance and best practice for the UK offshore industry with respect to the marine historic environment. This included the principal authorship of two historic environment guidance documents for COWRIE and the UK renewable energy sector (*Historical Environment Guidance for the Offshore Renewable Energy Sector* (2007) and *Offshore Geotechnical Investigations and Historic Environment Analysis: Guidance for the Renewable Energy Sector* (2010)). I was also manager and lead author in the development of the archaeological elements of the first Regional Environmental Assessments for the UK marine aggregates industry, and in the 2009 *UK Continental Shelf*

Offshore Oil and Gas and Wind Energy Strategic Environmental Assessment for Department of Energy and Climate Change. In 2013-14 I was lead author and project co-ordinator on *The UNESCO Convention on the Protection of the Underwater Cultural Heritage 2001: An Impact Review for the United Kingdom* and in 2016 I was co-author of a Historic England / Crown Estate / British Marine Aggregate Producers Association funded review of marine historic environment best practice guidance for the UK offshore aggregate industry.

I returned to South Africa in mid-2014 where I was re-appointed to my earlier post at SAHRA: Manager of the Maritime and Underwater Cultural Heritage Unit. In July 2016 I was appointed as Acting Manager of SAHRA's Archaeology, Palaeontology and Meteorites Unit.

I left SAHRA in September 2017 to join ACO Associates as Senior Archaeologist and Consultant. Since being at ACO and in addition to a wide range of terrestrial archaeological assessments, I have carried a number of maritime heritage impact assessments, including:

- Proposed Aquaculture Areas 1, 6 And 7, Algoa Bay, Eastern Cape;
- Upgrade of the Ship Repair Facility, Port of Mossel Bay;
- Expansion of Diamond Coast Aquaculture Farm on Farm 654, Portion 1, Kleinsee, Northern Cape;
- Block ER236, Proposed Exploration Well Drilling;
- IOX Cable Route;
- ASN Africa METISS Subsea Fibre Optic Cable System;
- Equiano Cable System, landing at Melkbosstrand;
- Prospecting Right Applications: Sea Concession Areas 14b, 15b and 17b, West Coast;
- Prospecting Rights Applications: Sea Concession Areas 13C and 15C - 18C, West Coast;
- 2AFRICA/GERA (East) Submarine Fibre Optic Cable System, Landing at Duynefontein; and
- 2AFRICA/GERA (West) Submarine Fibre Optic Cable System, Landing at Yzerfontein.

In 2018 of the potential impacts of marine mining on South Africa's palaeontological and archaeological heritage for the Council for Geoscience, on behalf of the Department of Mineral Resources.

I have been a member of the Association of Southern African Professional Archaeologists (No. 043) for nearly thirty years and am accredited by ASAPA's Cultural Resource Management section.

I have been a member of the ICOMOS International Committee for Underwater Cultural Heritage since 2000 and served as a member of its Bureau between 2009 and 2018.

Since 2010 I have been a member of the UK's Joint Nautical Archaeology Policy Committee.

I am a member of the Advisory Board of the George Washington University / Iziko Museums of South Africa / South African Heritage Resources Agency / Smithsonian Institution 'Southern African Slave Wrecks Project'.

I have served on the Heritage Western Cape Archaeology, Palaeontology and Meteorites Committee since 2014.

Selected Project Reports:

Gribble, J. 2017. *Archaeological Assessment of Farm No 8/851, Drakenstein*. Unpublished report prepared for Balwin Properties Pty Ltd. ACO Associates.

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environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

File Reference Number:	(For official use only)
NEAS Reference Number:	DEA/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

FINAL EMPR FOR THE SAN KRAAL AND PHEZUKOMOYA WIND ENERGY FACILITIES, EASTERN AND NORTHERN CAPE PROVINCES

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.environment.gov.za/documents/forms>.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Environment House
473 Steve Biko Road
Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

1. SPECIALIST INFORMATION

Specialist Company Name:	ACO Associates cc		
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition
Specialist name:	John Gribble		
Specialist Qualifications:	MA Archaeology		
Professional affiliation/registration:	Association of South African Professional Archaeologists (Membership Number #043)		
Physical address:	c/o 8 Jacobs Ladder, St James		
Postal address:	As above		
Postal code:	7945	Cell:	078 616 2961
Telephone:	-	Fax:	-
E-mail:	john.gribble@aco-associates.com		

2. DECLARATION BY THE SPECIALIST

I, John Gribble, declare that –

- 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

ACO Associates cc

Name of Company:

16 February 2022

Date

Details of Specialist, Declaration and Undertaking Under Oath

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, John Gribble, ~~swear under oath~~ / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.



Signature of the Specialist

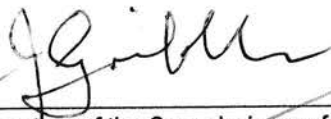
ACO Associates

Name of Company

16 February 2022

Date

Rev. James Gribble
COMMISSIONER OF OATHS
MARRIAGE OFFICER (V3146) - REPUBLIC OF SOUTH AFRICA
"Windfall", 123 Woodgate Road, Plumstead 7800



Signature of the Commissioner of Oaths

16 February 2022

Date