

HERITAGE SCOPING REPORT

For the proposed Kaladokhwe Wind Energy Facility 2, Cradock, Eastern Cape Province.

Applicant:

Kaladokhwe Wind 2 (Pty) Ltd

Environmental Consultant:

The Council for Scientific and Industrial Research (CSIR)

Report prepared by:



Beyond Heritage

Private Bag X 1049
Suite 34
Modimolle
0510

Tel: 082 373 8491

Fax: 086 691 6461

E-Mail: jaco@heritageconsultants.co.za

Report Author:

Mr. J. van der Walt

Project Reference:

22113


Report date:

29 August 2022

Revised 8 September 2022

DOCUMENT PROGRESS
Heritage Scoping Report

Document status

Document Version	v1.0		
Report Purpose	Draft for review		
Report Ref. No.	22113		
	Name	Signature	Date
Document Compilation	J. van der Walt		August 2022

Distribution List

Date	Report Reference number	Document Distribution	Number of Copies
29/8/2022	22113	CSIR	Electronic Copy
8/9/2022	22113	CSIR	Electronic Copy

Amendments on document

Date	Report Reference Number	Description of Amendment
8 September 2022	22113	Lay out and project description changes

Indemnity and Conditions Relating to this Report

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information. The report is based on survey and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken and Beyond Heritage and its staff reserve the right to modify aspects of the report including the recommendations if and when new information becomes available from ongoing research or further work in this field or pertaining to this investigation.

Although all possible care is taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. Beyond Heritage and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.

This report must not be altered or added to without the prior written consent of the author. This also refers to electronic copies of this report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

Copyright

Copyright on all documents, drawings and records, whether manually or electronically produced, which form part of the submission and any subsequent report or project document, shall vest in Beyond Heritage.

The Client, on acceptance of any submission by Beyond Heritage and on condition that the Client pays to Beyond Heritage the full price for the work as agreed, shall be entitled to use for its own benefit:

- » The results of the project;
- » The technology described in any report; and
- » Recommendations delivered to the Client.

Should the Client wish to utilise any part of, or the entire report, for a project other than the subject project, permission must be obtained from Beyond Heritage to do so. This will ensure validation of the suitability and relevance of this report on an alternative project.

EXECUTIVE SUMMARY

The applicant, Kaladokhwe Wind 2 (Pty) Ltd is proposing the development of a commercial Wind Energy Facility (WEF) and associated infrastructure on a site located approximately 30km North of Cradock in the Eastern Cape Province. Two additional WEF's are concurrently being considered on the surrounding properties known as Kaladokhwe WEF 1 and Kaladokhwe WEF 3. This scoping report focuses on the Kaladokhwe WEF 2 project.

The Council for Scientific and Industrial Research (CSIR) has been appointed as the independent Environmental Assessment Practitioner (EAP) to undertake the requisite Environmental Impact Assessment (EIA) process for the Project. Beyond Heritage was appointed to assess the potential impact to heritage resources by the Project and will be conducted in two phases. The first is the heritage scoping phase based on the results and findings of a desk-top study, wherein potential issues associated with the proposed project is identified, and those issues requiring further investigation through the EIA Phase (second phase) highlighted. Key findings include:

- The study area itself has not been subjected to previous heritage surveys or archaeological research;
- Heritage Assessments in the larger area however recorded Stone Age material including rock art and engraving sites, burial sites, and ruins (e.g., Binneman, 2007, Van Ryneveld,.2007, Webley. & Hart 2010, Booth, 2012,) and similar sites can be expected in the study area;
- This expectation is further enforced by an assessment of 1:50 000 topographical maps of the Project area where potential heritage features are indicated consisting of homesteads that could potentially be older than 60 years, and that might contain burial sites, a grave site, ruins and kraals. None of these features will be directly impacted on based on the current layout;
- Hornfels occur in the area that is a preferred raw material for making lithics (Parkington et al 2008) by Stone Age knappers. Topographical features such as koppies, dykes and water sources could also be focal points for occupation in antiquity and it is expected that several unrecorded Stone Age sites occur in the study area;
- The study area is of low to very high paleontological sensitivity further studies will be required for this aspect in the EIA phase.

The scoping study did not identify any fatal flaws in the study area and the project is acceptable from a heritage point of view. It is expected that if any sites are identified during the second phase of study within the development footprint, the sites can be mitigated, either by avoidance or by a Phase 2 assessment. To comply with the National Heritage Resources Act (NHRA) and with cognisance of known heritage resources in the greater area it is recommended that the study area should be subjected to a field-based Heritage Impact Assessment (HIA) and a Visual Impact Assessment (VIA). During this study the potential impact on heritage resources will be determined as well as levels of significance of recorded heritage resources. The HIA should also provide management and mitigation measures should any significant sites be impacted upon, ensuring that all the requirements of the SAHRA are met.

Contents

Indemnity and Conditions Relating to this Report	3
EXECUTIVE SUMMARY	4
ABBREVIATIONS	7
GLOSSARY	7
1. INTRODUCTION	8
1.1 Terms of Reference	12
1.2 Nature of the development	12
1.2.1. Background information	12
1.3 The receiving environment	14
2. APPROACH AND METHODOLOGY	15
2.1 Literature search	15
2.2 Information collection	15
2.3 Public consultation	15
2.4 Google Earth and mapping survey	15
2.5 Genealogical Society of South Africa	15
3. LEGISLATION	16
3.1 Heritage Site Significance and Mitigation Measures	17
4. REGIONAL OVERVIEW	18
4.1 General Information	18
4.1.1. Literature search	18
4.1.2. Public consultation	18
4.1.3. Google Earth and mapping survey	18
4.1.4. Genealogical Society of South Africa	18
4.2. Palaeontology	19
4.3 Archaeological and Historical Information Available on the Study Area”	20
4.3.1. Stone Age	20
4.3.3. Historical Information	21
4.3.4. Graves and Burial sites	21
4.3.5. Cultural Landscape	21
5. PROBABILITY OF OCCURRENCE OF SITES	22
6. ASSUMPTIONS AND LIMITATIONS	23
7. FINDINGS	23
8. POTENTIAL SIGNIFICANCE OF HERITAGE RESOURCES	25
9. CONCLUSION AND PLAN OF STUDY FOR EIA	25
10. LIST OF PREPARERS	25
11. STATEMENT OF COMPETENCY	25
12. STATEMENT OF INDEPENDENCE	26
13. REFERENCES	27

Figures

Figure 1.1. Regional setting of the study area showing the location of the WEF's	9
Figure 1.2. Local setting of the Project.	10
Figure 1.3. Aerial setting of the Project	11
Figure 4.1. Palaeontological sensitivity map of the approximate study area (yellow polygon)	19

Figure 7.1. Potential historical resources (orange dot) in relation to the study area. 24

Tables

Table 1. Heritage significance and field ratings 17
Table 2. Selected heritage reports conducted in the greater study area. 18
Table 3. Recorded sites in the study area 24

ABBREVIATIONS

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BIA: Basic Impact Assessment
CRM: Cultural Resource Management
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Plan
ESA: Early Stone Age
GPS: Global Positioning System
HIA: Heritage Impact Assessment
LIA: Late Iron Age
LSA: Late Stone Age
MEC: Member of the Executive Council
MIA: Middle Iron Age
MPRDA: Mineral and Petroleum Resources Development Act
MSA: Middle Stone Age
NEMA: National Environmental Management Act
PRHA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency

**Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.*

GLOSSARY

Archaeological site (remains of human activity over 100 years old)

Early Stone Age (2 million to 300 000 years ago)

Middle Stone Age (300 000 to 30 000 years ago)

Late Stone Age (30 000 years ago until recent)

Historic (approximately AD 1840 to 1950)

Historic building (over 60 years old)

Lithics: Stone Age artefacts

1. INTRODUCTION

Beyond Heritage was appointed by the CSIR to conduct a heritage scoping study for the proposed Kaladokhwe WEF 2. The site is situated approximately 30km North of Cradock within the Inxuba Yethemba Local Municipality and the Chris Hani District Municipality in the Eastern Cape Province (Figure 1.1 to 1.3). The heritage scoping report forms part of the EIA for the proposed project.

The aim of the scoping report is to identify possible heritage resources within the project area and to submit appropriate recommendations with regards to the responsible cultural resources management measures that might be required within the framework provided by Heritage legislation.

The report outlines the approach and methodology utilized for the scoping phase of the Project. The report includes information collected from various sources and consultations. Possible impacts are identified, and mitigation measures are proposed in the following report.

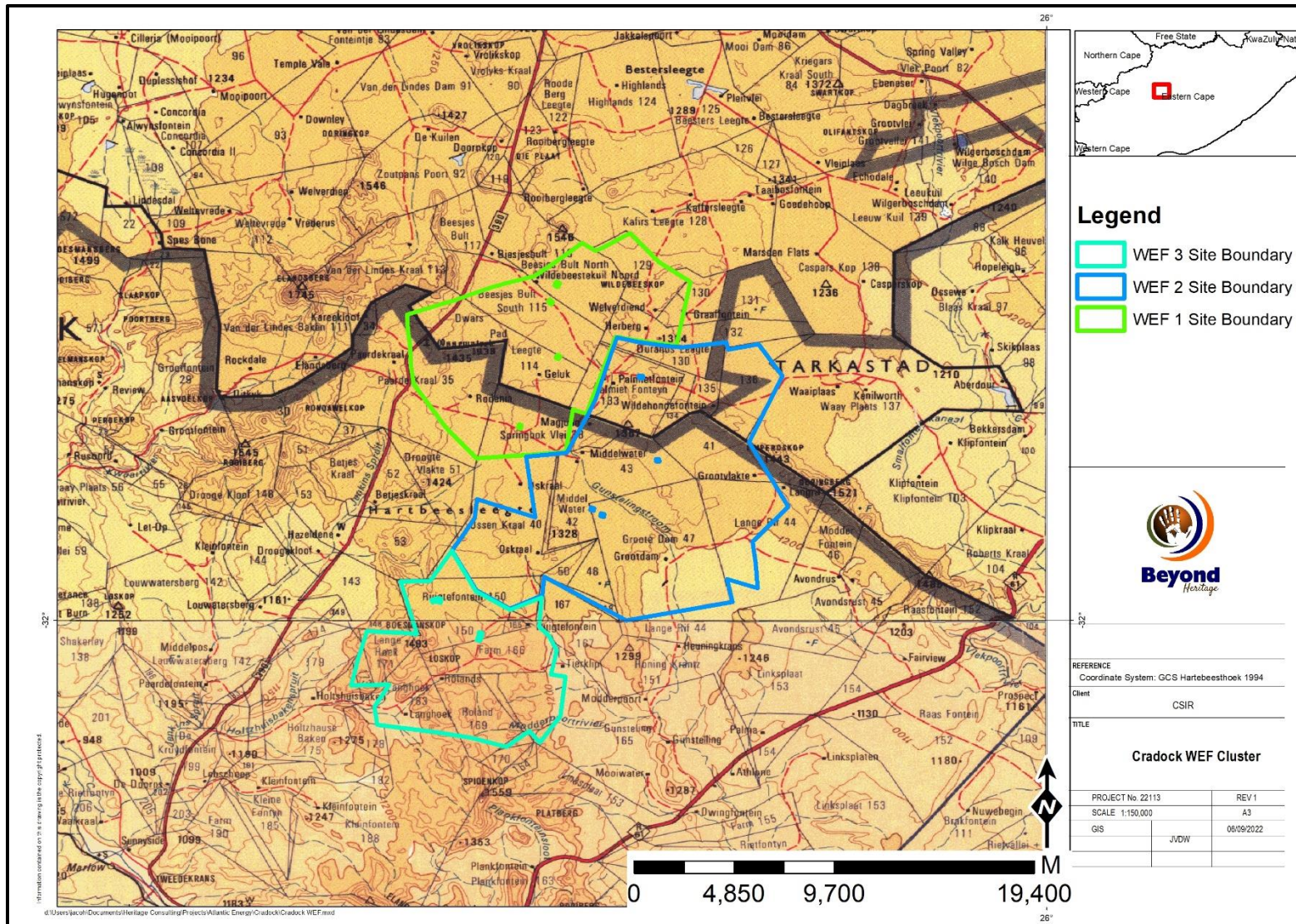


Figure 1.1. Regional setting of the study area showing the location of the WEF's.

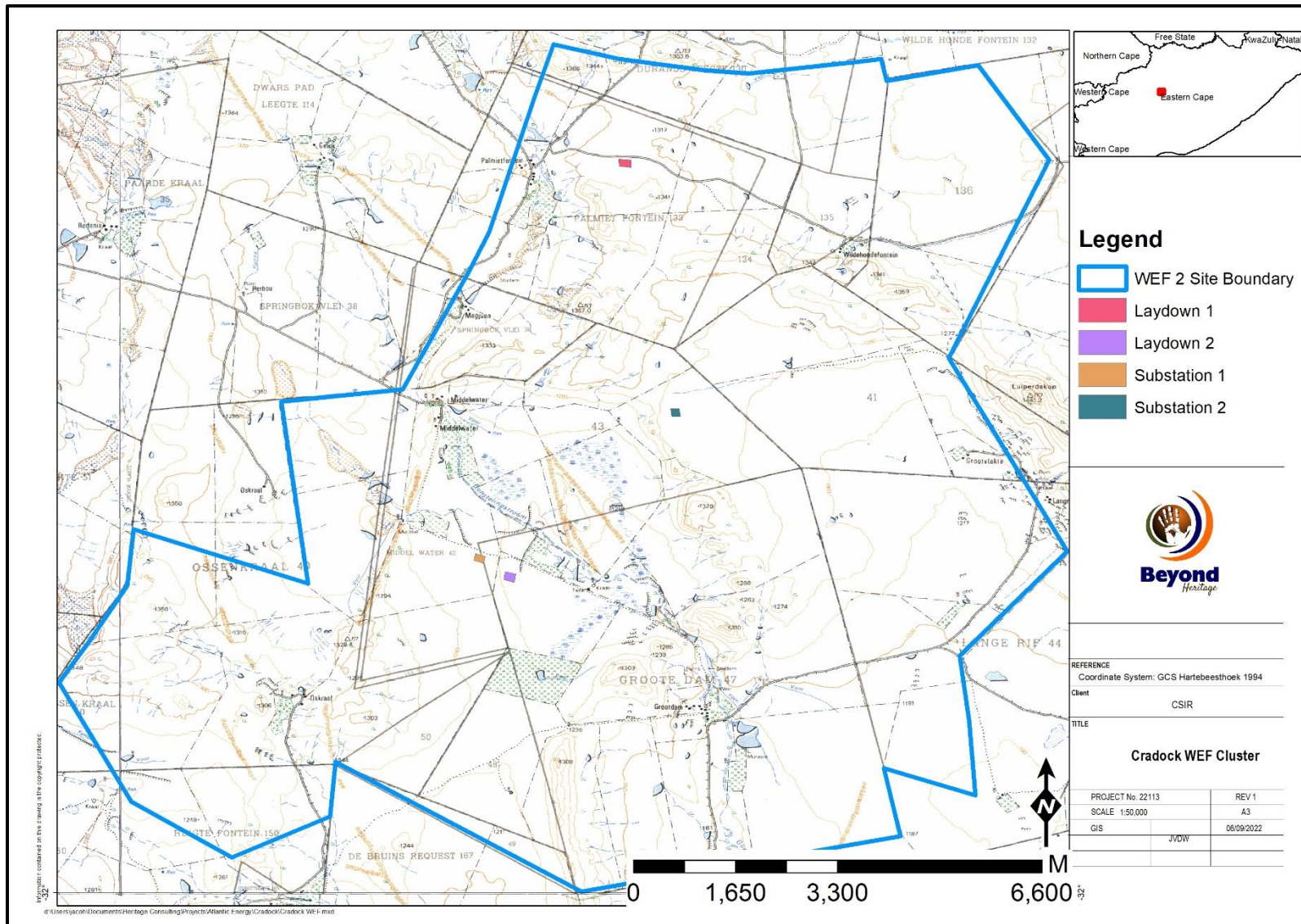


Figure 1.2. Local setting of the Project.

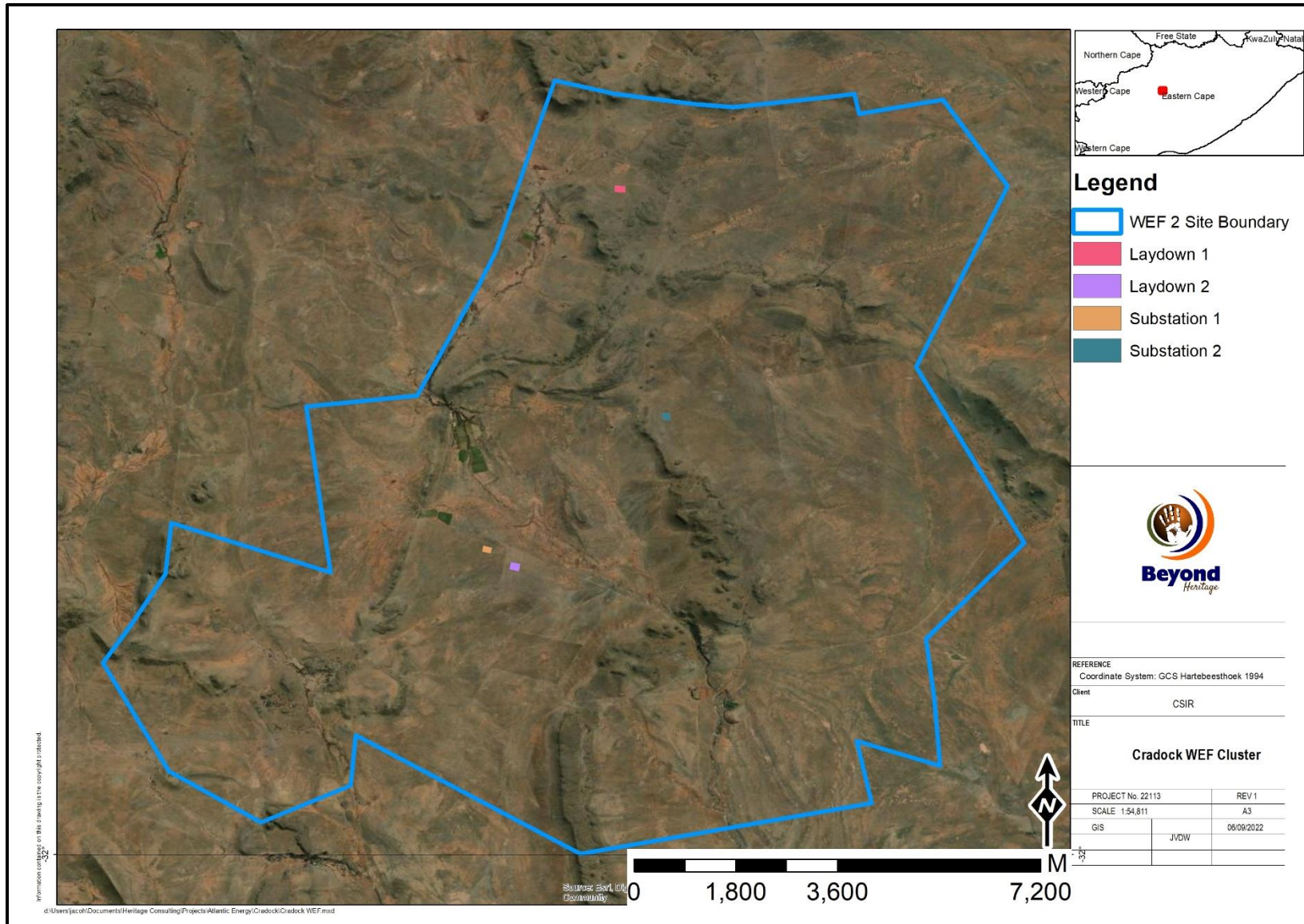


Figure 1.3. Aerial setting of the Project.

1.1 Terms of Reference

The main aim of this scoping report is to determine if any known heritage resources occur within the study area and to predict the occurrence of any possible heritage significant sites that might present a fatal flaw to the proposed project. The objectives of the scoping report were to:

- » Conduct a desktop study:
 - * Review available literature, previous heritage studies and other relevant information sources to obtain a thorough understanding of the archaeological and cultural heritage conditions of the area;
 - * Gather data and compile a background history of the area;
 - * Determine whether the area is renowned for any cultural and heritage resources, such as Stone Age sites, Iron Age sites, informal graveyards or historical homesteads.

- » Report

The reporting of the scoping component is based on the results and findings of the desk-top study, wherein potential issues associated with the proposed project will be identified, and those issues requiring further investigation through the IA Phase highlighted. Reporting will aim to identify the potential impacts of the proposed project activity on heritage resources. Reporting will also consider alternatives should any significant sites be impacted on by the proposed project. This is done to assist the developer in managing heritage resources in a responsible manner, in order to protect, preserve and develop them within the framework provided by Heritage Legislation.

1.2 Nature of the development

1.2.1. Background information

The applicant Kaladokhwe Wind 2 (Pty) Ltd is proposing the development of a commercial Wind Energy Facility (WEF) and associated infrastructure on a site located approximately 30 km North East of Cradock within the Inxuba Yethemba Local Municipality and the Chris Hani District Municipality in the Eastern Cape Province.

Two additional WEF's are concurrently being considered on the surrounding properties and are assessed by way of separate impact assessment processes contained in the 2014 Environmental Impact Assessment Regulations (GN No. R982, as amended) for listed activities contained in Listing Notices 1, 2 and 3 (GN R983, R984 and R985, as amended). These projects are known as Kaladokhwe WEF 1 and Kaladokhwe WEF 3.

A preferred project site with an extent of approximately 28 000 ha has been identified as a technically suitable area for the development of the three WEF projects. It is proposed that each WEF will have a contracted capacity of up to 240 MW. It is anticipated that the Kaladokhwe WEF 2 will have an actual (permanent) footprint of up to 70 ha.

The Kaladokhwe WEF 2 project site covers approximately 11 800 ha and comprises the following farm portions:

- Portion 1 of the Farm Ossen kraal No. 40;
- Remaining Extent (Portion 0) of the Farm Groote Dam, No. 48,
- Remaining Extent (Portion 0) of the Farm Wilde Honde Fontein No. 132
- Portion 1 of the Farm Ruigte Fontein No. 150;
- Remaining Extent of the Farm Ruigte Fontein No. 150;
- Portion 2 (a portion of Portion 1) of the Farm No. 43;
- Remaining Extent the Farm Middel Water Farm No. 42;
- Portion 1 of the Farm Middel Water Farm No. 42
- Portion 4 of the Farm Groote Dam No. 47;
- Remaining Extent of the Palmietfontein Farm No. 133;
- Remaining Extent of the Palmietfontein Farm No. 134;
- Remainder of Portion 6, of Farm DuRands Leegte Number 130;
- Remaining Extent of the Farm No. 50;
- Remaining Extent of the Farm No. 136
- Remaining Extent of the Farm No. 568;
- Remaining Extent of the Farm Groote Dam No. 47
- Remaining Extent of Farm No. 135;
- Remaining Extent of Farm No. 136
- Portion 5 of the Farm Groote Dam No. 47;
- Remaining Extent of the Farm Ossen kraal No. 40;
- Remaining Extent of Farm Roland No. 41;
- Portion 1 of the Farm Lange Rif No.44;
- Portion 3 of the Farm Lange Rif No.44;
- Portion 6 of the Farm Lange Rif No.44;
- Farm 137/5
- Portion 4 of the Farm Lange Rif No.44;
- Portion 7 of the Farm Lange Rif No.44;
- Remaining Extent of Farm No. 49;

The Kaladokhwe WEF 2 project site is proposed to accommodate the following infrastructure, which will enable the wind farm to supply a contracted capacity of up to 240 MW:

- Up to 43 wind turbines with a maximum hub height of up to 160 m and a rotor diameter of up to 200 m;
- A transformer at the base of each turbine;
- Concrete turbine foundations;
- Turbine, crane and blade hardstands;
- Temporary laydown areas (with a combined footprint of up to 18 ha) which will accommodate the boom erection, storage and assembly area;
- Battery Energy Storage System (with a footprint of up to 2 ha);
- Cabling between the turbines, to be laid underground where practical;
- One on-site substations up to 3 ha in extent to facilitate the connection between the wind farm and the electricity grid;

- Access roads to the site and between project components inclusive of stormwater infrastructure. A 12 m road corridor may be temporarily impacted upon during construction and rehabilitated to 6m wide after construction. The WEF will have a total road network of up to 50 km.
- A temporary site camp establishment and concrete batching plants (with a combined footprint of up to 2 ha); and
- Operation and Maintenance buildings (with a combined footprint of up to 2 ha) including a gate house, security building, control centre, offices, warehouses, and a workshop.

In order to evacuate the energy generated by the WEF to the national grid, a separate Scoping & EIR report will be undertaken to assess the grid connection route which consists of a 132 / 400kV overhead powerline (OHL) within a 300 m assessment corridor from the Switching Station on site to a proposed new 132/400 kV MTS located north east of the WEF and adjacent to the two Hydra – Poseidon 400 kV lines.

The EA Application for the wind farm project and grid connection infrastructure are being undertaken in parallel as they are co-dependent, i.e. one will not be developed without the other.

1.3 The receiving environment

Cradock is located in the Central Midland section of the East Cape Midlands (Skead 2007). The main drainage channel comprises the Great Fish River and its tributaries to the south west of the study area. The area is characterised by short karoo bushes and grasses, and the vegetation is known as False Karroid Broken Veld.

The mountains and kopjes in the East Cape Midlands are comprised of horizontally bedded, fossiliferous shales and mudstones of the Beaufort Group of the Karoo Supergroup (Webley and Halkett 2010 and Skead 2007). These are intersected at numerous locations by dolerite dykes and sills that are more resistant to erosion than the surrounding sedimentary rocks. Dykes and sills have baked the surrounding shales in areas containing high quality hornfels that are a preferred raw material for making lithics (Parkington et al 2008). Topographical features such as koppies, dykes and water sources could be focal points for occupation in antiquity.

2. APPROACH AND METHODOLOGY

The assessment is to be undertaken in two phases, a scoping phase and an HIA phase as part of the Environmental Impact Assessment process, this report concerns the scoping phase. The aim of the scoping phase is to assess the study area at a desktop level to compile a background history of the study area, to identify possible heritage issues or fatal flaws that should be avoided during development.

This was accomplished by means of the following phases (the results are represented in section 7 of this report):

2.1 Literature search

A literature search was conducted utilising data from published articles on the archaeology and history of the area. The aim of this is to extract data and information on the area in question, looking at archaeological sites, historical sites and graves of the area.

2.2 Information collection

SAHRIS was consulted to collect data from CRM practitioners who undertook work in the area to provide the most comprehensive account of the history of the area where possible.

2.3 Public consultation

A full public consultation process will be facilitated by the CSIR. Any heritage concerns raised during this process will be addressed in the HIA.

2.4 Google Earth and mapping survey

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where archaeological sites might be located.

2.5 Genealogical Society of South Africa

The database of the genealogical society was consulted to collect data on any known graves in the area.

3. LEGISLATION

For this project the National Heritage Resources Act, 1999 (Act No. 25 of 1999) is of importance and the following sites and features are protected:

- a. Archaeological artefacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

The national estate includes the following:

- 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 features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Archaeological and palaeontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g., archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

Section 34 (1) of the act deals with structures which is older than 60 years. Section 35(4) of this act deals with archaeology, palaeontology and meteorites. Section 36(3) of the National Heritage Resources Act deals with human remains older than 60 years. Unidentified/unknown graves are also handled as older than 60 until proven otherwise.

3.1 Heritage Site Significance and Mitigation Measures

The presence and distribution of heritage resources define a Heritage Landscape. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface.

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. National and Provincial Monuments are recognised for conservation purposes. The following interrelated criteria were used to establish site significance:

- » The unique nature of a site;
- » The integrity of the archaeological/cultural heritage deposit;
- » The wider historic, archaeological and geographic context of the site;
- » The location of the site in relation to other similar sites or features;
- » The depth of the archaeological deposit (when it can be determined or is known);
- » The preservation condition of the site;
- » Potential to answer present research questions.

The criteria above will be used to place identified sites with in SAHRA's (2006) system of grading of places and objects which form part of the national estate. This system is approved by ASAPA for the SADC region. The recommendations for each site should be read in conjunction with section 9 of this report.

Table 1. Heritage significance and field ratings

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP. A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP. B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

4. REGIONAL OVERVIEW

4.1 General Information

4.1.1. Literature search

The reports indicated in Table 2 were conducted in the greater study area and were consulted for this report:

Table 2. Selected heritage reports conducted in the greater study area.

Author	Year	Project	Findings
Van Ryneveld, K.	2007	Phase 1 Archaeological Impact Assessment – Cradock Weir Residential Development, Portion of REF 1, Cradock, Eastern Cape, South Africa.	Historical farmstead ruins, MSA scatter, graveyard, portion of Cain's MSA site
Van Ryneveld, K.	2006	Phase 1 Archaeological Impact Assessment - Portion Of Erf 1, Cradock, Cradock District, Eastern Cape, South Africa.	No sites
Webley, L. & Hart, T.	2010	Scoping Archaeological Impact Assessment: Proposed Prospecting On Denmark 119 And Groene Vallei 226 North And South (Site 37), Cradock, Eastern Cape.	Stone Age quarrying sites
Nel, J.	2008	Heritage resources scoping survey & preliminary assessment Transnet Freight Line EIA, Eastern Cape and Northern Cape.	No sites were found along Cradock
Booth, C.	2012	A Phase 1 Archaeological Impact Assessment: Upgrade of N10 Section 3 from the Riet River (Km45.2) to Tarka Bridge (Km 68.5).	A historical distance marker which marked the early route between Cradock and Grahamstown, Stone Age artefacts.
Binneman, J.	2007	Phase 1 Archaeological Heritage Impact Assessment for the Proposed Construction of an Overhead Powerline to Lkcf001 (Frs 143) on the Farm Samekoms 392, Cradock District.	Several concentrations of rock engravings.

4.1.2. Public consultation

A public participation process is facilitated by the EAP and potential heritage concerns raised will be included in the HIA.

4.1.3. Google Earth and mapping survey

Google Earth and 1:50 000 maps of the area was utilised to identify possible places where archaeological sites might be located.

4.1.4. Genealogical Society of South Africa

No grave sites are indicated within the study area.

4.2. Palaeontology

The study area ranges from low to very high palaeontological sensitivity (Figure 4.1). A desktop palaeontological study by Almond (2013), identified the region around Cradock and headed south as being underlain by the Lower Beaufort Group including the Adelaide Subgroup and Karoo Supergroup. The Lower Beaufort Group is of high palaeontological sensitivity due to the findings of very rich deposits of land-dwelling plants and animals of the Permo-Triassic age. Additional studies will be required for this aspect in the impact assessment phase.



Colour	Sensitivity	Required Action
RED	VERY HIGH	Field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study; a field assessment is likely
GREEN	MODERATE	Desktop study is required
BLUE	LOW	No palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	No palaeontological studies are required
WHITE/CLEAR	UNKNOWN	These areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

Figure 4.1. Palaeontological sensitivity map of the approximate study area (yellow polygon).

4.3 Archaeological and Historical Information Available on the Study Area”

The archaeological record for the greater study area consists of the Stone Age and Historical period.

4.3.1. Stone Age

The Stone Age is divided in the Early; Middle and Late Stone Age. It refers to the earliest people of South Africa who mainly relied on stone for their tools.

Earlier Stone Age (ESA): The period from ± 2.5 million yrs. - $\pm 250\ 000$ yrs. ago. Acheulean stone tools are dominant. No Acheulean sites are on record near the study area, but isolated finds may be possible. However, isolated finds have little value. Therefore, the project is unlikely to disturb a site of significance. The region surrounding the project footprint has shown through archaeological surveys to have early hominid occupation since the Early Stone Age. Sampson (1985) recorded many Stone Age sites in the area of Cradock with hand axes and cleavers found as some sites dating to the ESA. Many of these Stone Age artefacts he found in the Cradock area are currently housed in the Albany Museum.

Middle Stone Age (MSA): The Middle Stone Age includes various lithic industries in SA dating from $\pm 250\ 000$ yrs. – 25 000 yrs. before present. This period is first associated with archaic *Homo sapiens* and later *Homo sapiens sapiens*. Material culture includes stone tools with prepared platforms and stone tools attached to handles. Among Sampson’s (1985) recorded Stone Age sites are Middle Stone Age sites with tools belonging to flake and blade lithic industries being identified. MSA scatters of mostly long blades and points have commonly been found within the larger region in archaeological surveys (Binneman and Booth 2008, Brooker 1977, van Ryneveld 2007). Multiple MSA scatters identified in the region surrounding the project area general occur in open areas, making it difficult to accurately pinpoint their precise geographical origin. As such context of MSA finds may be lost through disturbances in the landscape.

Later Stone Age (LSA): The period from $\pm 25\ 000$ -yrs before present to the period of contact with either Iron Age farmers or European colonists. This period is associated with *Homo sapiens sapiens*. Material culture from this period includes: microlithic stone tools; ostrich eggshell beads and rock art. Sites located in the open are usually poorly preserved and therefore have less value than sites in caves or rock shelters. The greater landscape is seen to have been occupied by San hunter-gatherers in rock shelters, caves, as well as open areas and are dated to the past 10 000 years. Research conducted in the Mountain Zebra National Park, south-west of the study area, identified 22 sites relating to the LSA period with multiple sites containing rock art paintings (Brooker 1977). East of the project area, various rock art and rock engravings were found along rocky outcrops which are speculated to be related to the LSA period (Binneman 2007, Booth 2012a). Low density LSA pottery scatters were also identified and are associated with hunter-gatherers of the period. Multiple freshwater shell middens were also identified along the banks of the Great Fish River, with records thereof housed at the Albany Museum (Booth 2012a). Around 2000 years ago, Khoekhoen pastoralists settled into the region and brought with them the domestication of sheep, goats and cattle as well as pottery (Booth 2012). Sites related to their settlements are more often found along riverbanks.

4.3.3. Historical Information

The Eastern Cape saw an influx of European settlers from the late 17th century where pastoralists and agropastoralists mainly occupied the landscape now known as the Eastern Cape Province (Hall 1986). Interactions between the settlers and Hunter-gatherers were rare in Eastern Cape and not many accounts of such have been made.

The Cape Frontier Wars between the Dutch and the Xhosa caused tensions to rise in the Cape provinces. During 1818 and 1819, tensions rose between the British and Xhosa east of the Great Fish River. The Cape Colony governor of the time, Sir John Cradock then ordered for the establishment of a fort on the Buffelshoek farm in 1813. The fort itself never saw any battles as the tensions had already subsided in the region. Thereafter in 1814, a town nearby the fort was established and was named Cradock, after Sir John Cradock.

During the Great Trek of the 1830s and 1840s, multitudes of Boers were emigrating from the Cape Colony into the inland regions of South Africa as to break away from the British power (Giliomee & Mbenga 2007). Cradock was along the route taken out of the Cape Colony. In 1877, after the Cape Colony was given some independence, a railway line was commissioned to connect inland towns to Port Elizabeth. The railway which passed through the town of Cradock, allowed for further expansion and economic growth of the town which is today a large producer of wool in the Cape.

During the Angle Boer War (1899 – 1902) Cradock was under British Control and although there were not major battles in the area according to KarooSpace.co.za British soldiers dotted at various lookout posts in the mountains around Cradock played heliograph chess against each other. The soldiers also made their mark in etchings on the rocks close to the lookout point outside of the town called Oukop and a mass grave of unknown soldiers is located in the nearby Mountain Zebra Park well away and to the south of the study area.

4.3.4. Graves and Burial sites

Graves have been identified outside of the study area (van Ryneveld 2007), and more graves might occur within the study area. No grave sites are indicated on the Genealogical Society of South Africa's Database.

4.3.5. Cultural Landscape

The study area is rural and development in the area is limited to farmsteads, small scale cultivation activities and agricultural infrastructure as well as infrastructure developments like roads and powerlines. Cradock and the surrounding environment forms part of a scenic historic landscape ranging from the Stone Age to historic settlement.

5. PROBABILITY OF OCCURRENCE OF SITES

Based on the above information, it is possible to determine the probability of finding archaeological and cultural heritage sites within the study area to a certain degree. For the purposes of this section of the report the following terms are used – low, medium, and high probability. Low indicates that no known occurrences of sites have been found previously in the general study area, medium probability indicates some known occurrences in the general study area are documented and can therefore be expected in the study area and a high probability indicates that occurrences have been documented close to or in the study area and that the environment of the study area has a high degree of probability having sites.

» Palaeontological landscape

Fossil remains. *Low to High probability.*

» Archaeological And Cultural Heritage Landscape

NOTE: *Archaeology is the study of human material and remains (by definition) and is not restricted in any formal way as being below the ground surface.*

Archaeological remains dating to the following periods can be expected within the study area:

» **Stone Age finds**

ESA: *Low to Medium Probability*
 MSA: *Medium to High Probability*
 LSA: *Medium to High Probability*
 LSA –Herder: *Medium to High Probability*
 Rock Art Sites – *Medium to High Probability*

» **Iron Age finds**

EIA: *Low Probability*
 MIA: *Low Probability*
 LIA: *Low Probability*

» **Historical finds**

Historical period: *Medium to High Probability*
 Historical dumps: *Low Probability*
 Structural remains: *Medium to High Probability*
 Cultural Landscape: *Low probability*

» **Living Heritage**

For example, rainmaking sites: *Low Probability*

» **Burial/Cemeteries**

Burials over 100 years: *Medium to High Probability*
 Burials younger than 60 years: *Medium Probability*

Subsurface excavations including ground levelling, landscaping, and foundation preparation can expose any number of these.

6. ASSUMPTIONS AND LIMITATIONS

The study area was not subjected to a field survey as this will be conducted in the EIA phase. It is assumed that information obtained for the wider area is applicable to the study area and the authors acknowledge that the brief literature review is not exhaustive on the literature of the area. This study did not assess the impact on medicinal plants and intangible heritage as it is assumed that these components would be highlighted through the public consultation process if relevant. It is possible that new information could come to light in future, which might change the results of this scoping report.

7. FINDINGS

Based on an assessment of 1:50 000 topographical maps of the Project area potential heritage features are indicated consisting of homesteads that could potentially be older than 60 years, and that might contain burial sites. These are not listed in the scoping report as these will be avoided by the Project. A few other potential heritage features are indicated consisting of ruins and kraals and are spatially illustrated in Figure 7.1 and their locations included in Table 3. These features allude to historical occupation of the area and surrounding area but will not be affected by the current layout. The shales and mudstones of the Beaufort Group of the Karoo Supergroup are intersected at numerous locations by dolerite dykes and sills that are more resistant to erosion than the surrounding sedimentary rocks and these locations could be of high archaeological potential. Hornfels occur in the area that is a preferred raw material for making lithics (Parkington et al 2008) by Stone Age knappers and it is expected that several unrecorded Stone Age sites occur in the study area, but their locations cannot be verified at a scoping level.

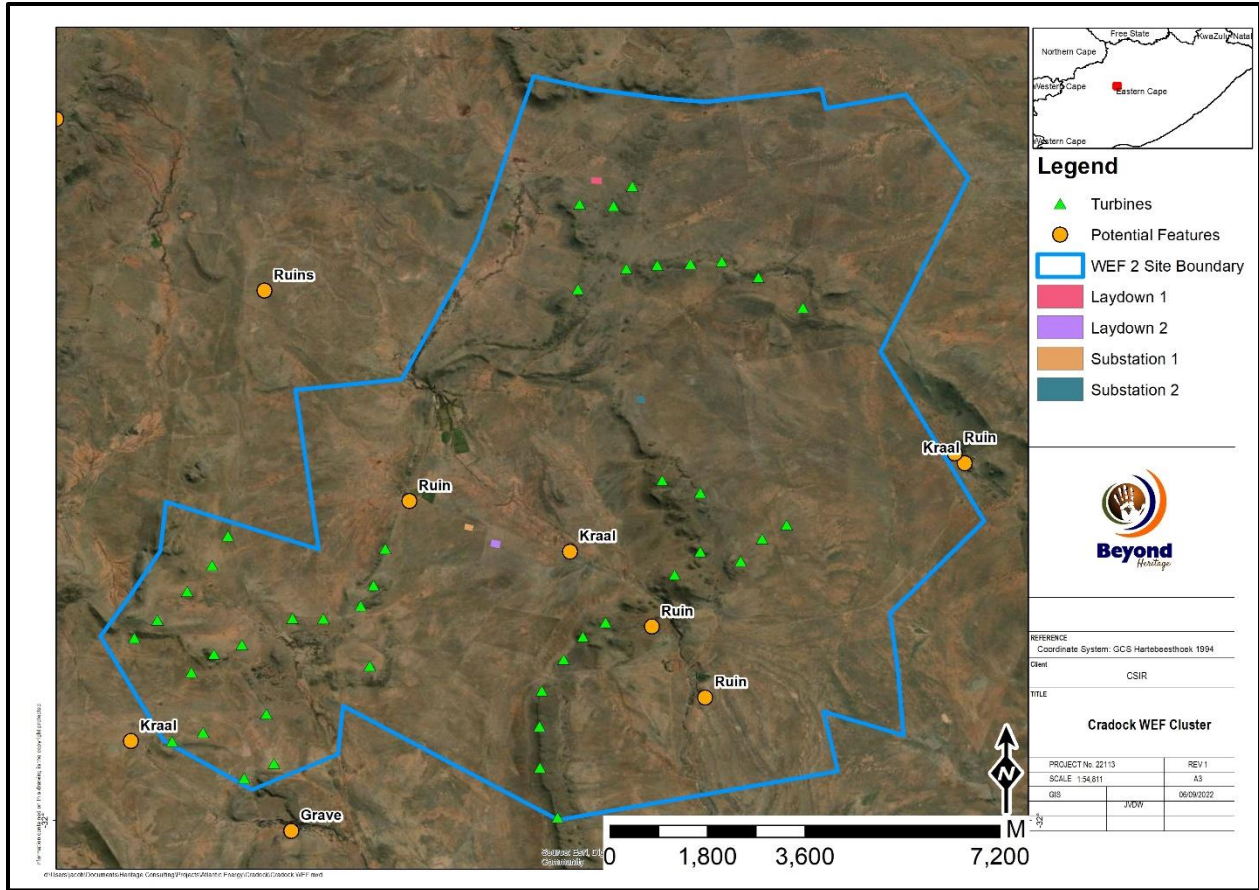


Figure 7.1. Potential historical resources (orange dot) in relation to the study area.

Table 3. Potential sites in the study area and surrounds

LABEL	LONGITUDE	LATITUDE
Kraal	25° 43' 59.9347" E	31° 53' 01.3993" S
Ruins	25° 46' 04.4488" E	31° 54' 43.8846" S
Kraal	25° 48' 35.0373" E	31° 52' 03.9039" S
Ruin	25° 47' 30.8572" E	31° 56' 49.4272" S
Kraal	25° 49' 06.9709" E	31° 57' 19.4823" S
Ruin	25° 50' 27.7439" E	31° 58' 46.5168" S
Ruin	25° 49' 55.8104" E	31° 58' 04.2518" S
Kraal	25° 53' 02.7155" E	31° 56' 26.8859" S
Ruin	25° 52' 56.7671" E	31° 56' 20.9375" S

8. POTENTIAL SIGNIFICANCE OF HERITAGE RESOURCES

Based on the current information obtained for the area at a desktop level it is anticipated that any heritage resources that occur within the proposed development area will have a Generally Protected B (GP. B) or lower field rating and all sites should be mitigatable either by *in-situ* preservation or phase 2 mitigation. Graves are of high social significance and can be expected anywhere on the landscape.

9. CONCLUSION AND PLAN OF STUDY FOR EIA

The scoping study did not identify any fatal flaws to the Project from a heritage point of view. To comply with the National Heritage Resources Act (Act 25 of 1999) it is recommended that a Phase 1 HIA must be undertaken for the study area. During the HIA the potential impact on heritage resources will be determined as well as levels of significance of recorded heritage resources. The HIA will also provide management and mitigation measures should any significant sites be impacted upon, ensuring that all the requirements of the SAHRA are met. The study area is of low to very high paleontological sensitivity and a specialist palaeontological assessment will be required in the EIA phase. During the Public participation and stakeholder consultation process (advertisements & site notices) must reference the National Heritage Resources Act.

10. LIST OF PREPARERS

Jaco van der Walt (Archaeologist and Project Manager)

Lara Kraljevic (Archaeological support)

11. STATEMENT OF COMPETENCY

The author of the report is a member of the Association of Southern African Professional Archaeologists and is also accredited in the following fields of the Cultural Resource Management (CRM) Section (#159): Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation. He is also a member of the Association of Professional Heritage Practitioners (#114). Jaco is also an accredited CRM Archaeologist with SAHRA and AMAFA.

Jaco has been involved in research and contract work in South Africa, Afghanistan, Botswana, Mozambique, Zimbabwe, Zambia, Guinea, Tanzania, and the DRC and conducted well over 500 AIAs and HIAs since he started his career in CRM in 2000. This involved several mining operations, Eskom transmission and distribution projects, and renewable energy developments. The results of several of these projects were presented at international and local conferences.

12. STATEMENT OF INDEPENDENCE

I, Jaco van der Walt as duly authorised representative of Beyond Heritage, hereby confirm my independence as a specialist and declare that neither I nor the Beyond Heritage have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which the client was appointed as Environmental Assessment practitioner, other than fair remuneration for work performed on this project.

A handwritten signature in black ink, appearing to read 'Jaco van der Walt', is positioned above a horizontal line.

SIGNATURE:

13. REFERENCES

- Almond, J.E. 2012. Palaeontological specialist assessment: desktop study: Proposed 16 Mtpa Expansion of Transnet's Existing Manganese Ore Export Railway Line & Associated Infrastructure between Hotazel and the Port of Ngqura, Northern & Eastern Cape. Part 2: De Aar to the Coega IDZ, Northern and Eastern Cape.
- Binneman, J. 2007. Phase 1 Archaeological Heritage Impact Assessment for the Proposed Construction of an Overhead Powerline to Lkcf001 (Frs 143) On The Farm Samekoms 392, Cradock District.
- Binneman, J.N.F., & Booth, C. 2008. A Phase 1 Archaeological Heritage Impact Assessment for the proposed construction and operation of an ethanol production plant on Erven 31, 32, 33 and the remaining extent of Erf 1, Cradock, Inxuba Yethemba Local Municipality, Eastern Cape Province
- Booth, C. 2012a. A Phase 1 Archaeological Impact Assessment for the Proposed 75mw Dobbin Photovoltaic Solar Farm on the Farm Het Fontein 1/66, Near Cradock, Inxuba Yethemba District Municipality, Eastern Cape Province.
- Booth, C. 2012. A Phase 1 Archaeological Impact Assessment: Upgrade of N10 Section 3 from the Riet River (Km45.2) to Tarka Bridge (Km 68.5).
- Brooker, M. 1977. The archaeology of the mountain Zebra National Park. *Koedoe*, 20(1): 77-93.
- Giliomee, H., & Mbenga, B. 2007. New history of South Africa. Cape Town: Tafelberg Publishers.
- Hall, S.L. 1986. Pastoral Adaptations and Forager Reactions in the Eastern Cape. *Goodwin Series* 5:42-49.
- Nel, J. 2008. Heritage resources scoping survey & preliminary assessment Transnet Freight Line EIA, Eastern Cape and Northern Cape.
- Parkington, J., Morris, D. & Rusch, N. 2008. Karoo rock engravings. Cape Town: Creda Communications. Sahara Report Mapping Project Version 1.0, 2009.
- Sampson, C. G. 1985. Atlas of Stone Age Settlement in the Central and Upper Seacow Valley. *Memoirs van die Nasionale Museum Bloemfontein*, Vol. 20:1-116.
- Skead, C.J. 2007. Historical Incidence of the larger land mammals in the broader Eastern Cape. Port Elizabeth: Centre for African Conservation Ecology.
- Van Ryneveld, K. 2006. Phase 1 Archaeological Impact Assessment - Portion Of Erf 1, Cradock, Cradock District, Eastern Cape, South Africa.
- Van Ryneveld, K. 2007. Phase 1 Archaeological Impact Assessment – Cradock Weir Residential Development, Portion of REF 1, Cradock, Eastern Cape, South Africa.
- Webley, L, & Hart, T. 2010. Scoping Archaeological Impact Assessment: Proposed Prospecting On Denmark 119 And Groene Valleie 226 North And South (Site 37), Cradock, Eastern Cape.