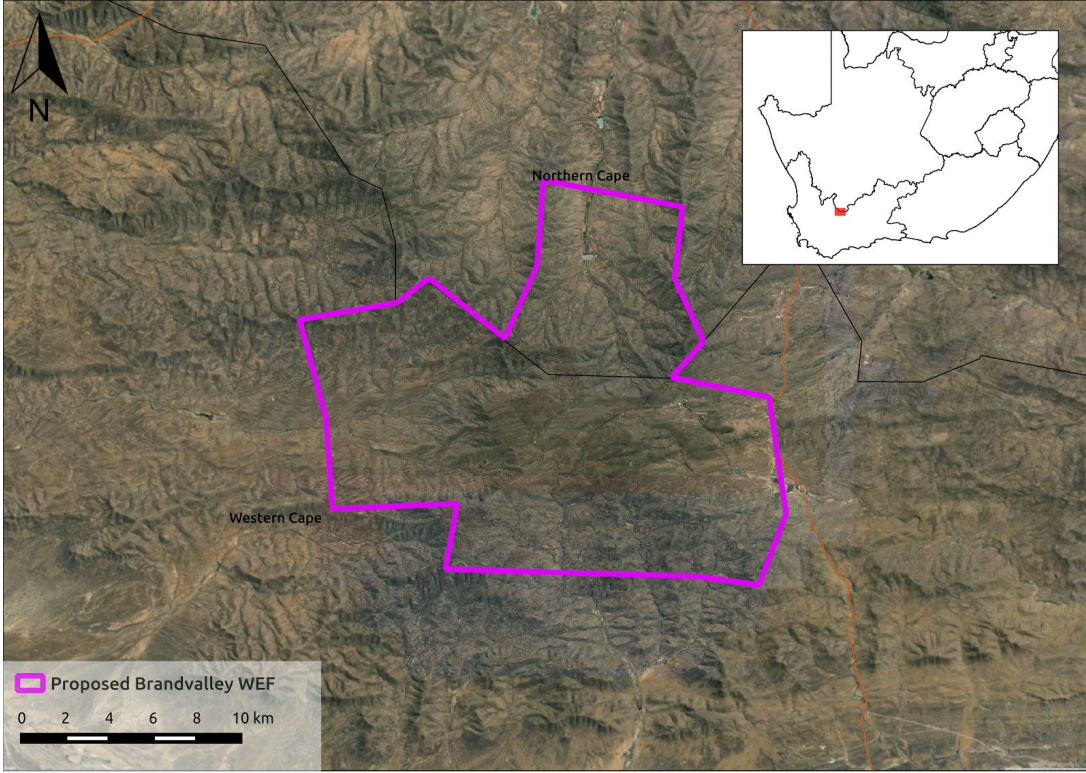




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## HERITAGE SCREENER

CTS Reference Number:	CTS15_015b Amended_NC	
Client:	EOH Coastal & Environmental Services	
Date:	9 March 2016	
Title:	Brandvalley Wind Energy Facility	
Recommendation by CTS Heritage Specialists: (Type 2)	<p><b>(2) The heritage resources and the area proposed for development are only partially recorded - It is recommended that:</b></p> <ul style="list-style-type: none"><li>- a Heritage Impact Assessment (HIA) be conducted inclusive of an Archaeological Impact Assessment (AIA) by a Stone Age and Historical archaeologist familiar with the area in Area B (Figure 5), and a Visual Impact Assessment (VIA) on the WEF in its entirety</li><li>- an archaeological walk-through be conducted in Area A (Figure 5) to inspect the impact footprint of turbines and additional infrastructure once their position has been determined</li><li>- a monitoring brief by a palaeontologist to be set up before construction starts. Fresh exposures of highly sensitive formations to be monitored by a palaeontologist during construction as set out in the brief.</li></ul>	

## 1. Proposed Development Summary

EOH Coastal & Environmental Services is undertaking the Environmental Impact Assessment process for the proposed Brandvalley Wind Energy Facility bordering the Western and Northern Cape Provinces.

## 2. Application References

<b>Name of relevant heritage authorities</b>	Heritage Western Cape (HWC) South African Heritage Resources Agency (SAHRA)
<b>Name of decision making authority(s)</b>	Department of Environmental Affairs (DEA)

## 3. Property Information

<b>Farm Name and Number</b>	The Remainder and Portion 1 of Barendskraal 76; Remainder and Portion 1 of Farm Brandvalley 75; Remainder and Portion 3 of Farm Fortuin 74; The Remainder of Kabeltouw 160; Remainder and Portion 1 of Farm Muishond River 161; Portion 1 of Fortuin 74 (Ou Mure); The Farm Rietfontein 197
<b>Local Municipality</b>	Karoo Hoogland, Witzenberg, Laingsburg
<b>District Municipality</b>	Namakwa, Cape Winelands, Central Karoo
<b>Previous Magisterial District</b>	Ceres, Sutherland, Laingsburg
<b>Province</b>	Western Cape and Northern Cape Provinces
<b>Current Use</b>	Mostly livestock grazing (sheep farming)
<b>Current Zoning</b>	Agricultural
<b>Total Extent</b>	Approximately 270km <sup>2</sup>

#### 4. Nature of the Proposed Development

Surface area to be affected/destroyed	NA
Depth of excavation (m)	Approximately 5m
Height of development (m)	Up to 120m
Expected years of operation before decommission	Approximately 20 years

#### 5. Category of Development

Triggers: Section 38(8) of the National Heritage Resources Act	X
Triggers: Section 38(1) of the National Heritage Resources Act	
1. Construction of a road , wall, powerline, pipeline, canal or other similar form of linear development or barrier over 300m in length.	X
2. Construction of a bridge or similar structure exceeding 50m in length.	
3. Any development or activity that will change the character of a site-	
a) exceeding 5 000m <sup>2</sup> in extent	X
b) involving three or more existing erven or subdivisions thereof	X
c) involving three or more erven or divisions thereof which have been consolidated within the past five years	
4. Rezoning of a site exceeding 10 000m <sup>2</sup>	X
5. Other (state):	

#### 6. Additional Infrastructure Required for this Development

- Underground 33kV cabling between turbines buried along access roads, where feasible.
- Internal access roads up to 12m wide, including structures for storm-water control required to access each turbine location. Where possible, existing roads will be upgraded.
- 33kV overhead power lines linking groups of wind turbines to onsite 33/132kV substation(s).

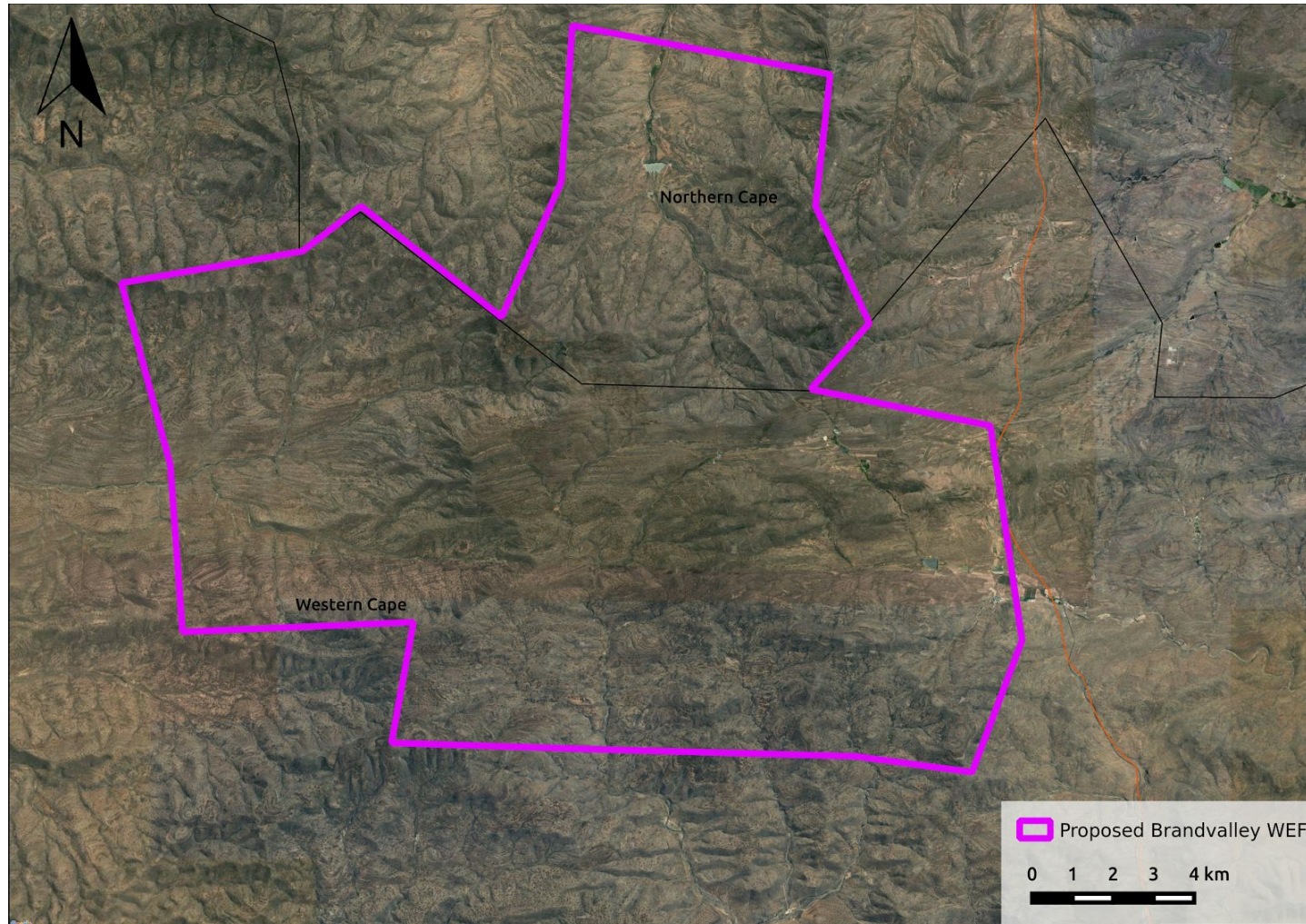


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- Temporary infrastructure including a large construction camp (~10ha) and an on-site concrete batching plant (~1ha) for use during the construction phase.
- Fencing around the construction camp up to 4m; the entire facility would not necessarily need to be fenced off.
- Temporary infrastructure to obtain water from available local sources/ new or existing boreholes including a potential temporary aboveground pipeline (approximately 35cm diameter) to feed water to site / batching plant. Water will potentially be stored in temporary water storage tanks.
- 132kV overhead distribution lines to connect the WEF from the onsite 33/132kV substation to the Eskom 400kV Komsberg substation.
- Extension of the existing 400kV Komsberg substation



## 7. Mapping - Please see Appendices 3 and 4 for legend keys and methodology.



**Figure 1b. Overview Map.** Satellite image with proposed development indicated. The R354 is indicated in white on the map.

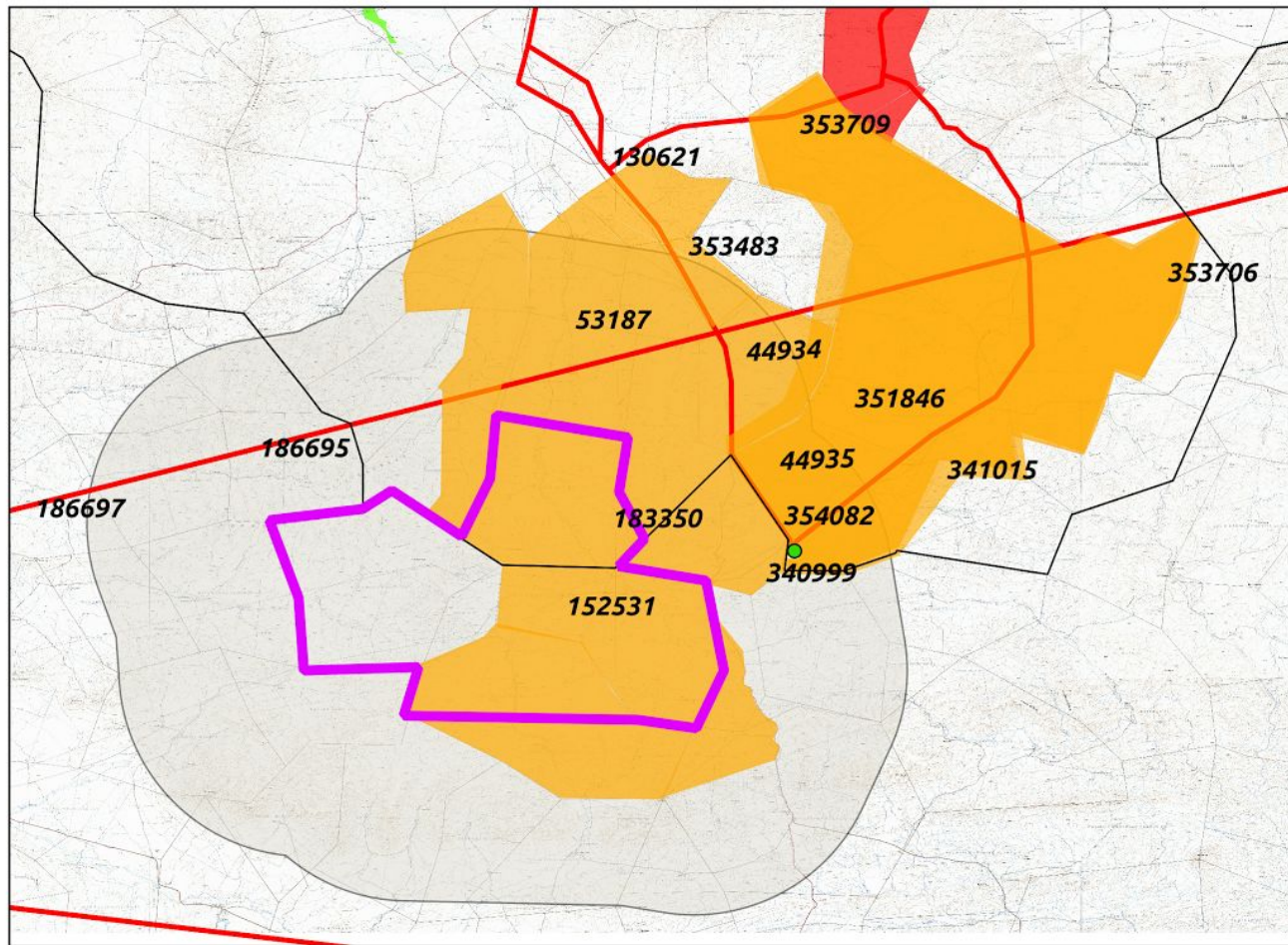








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## Legend

Proposed development

Inclusion zone - 10km

### Line surveys

Low coverage

### Area surveys

Medium coverage

Low coverage

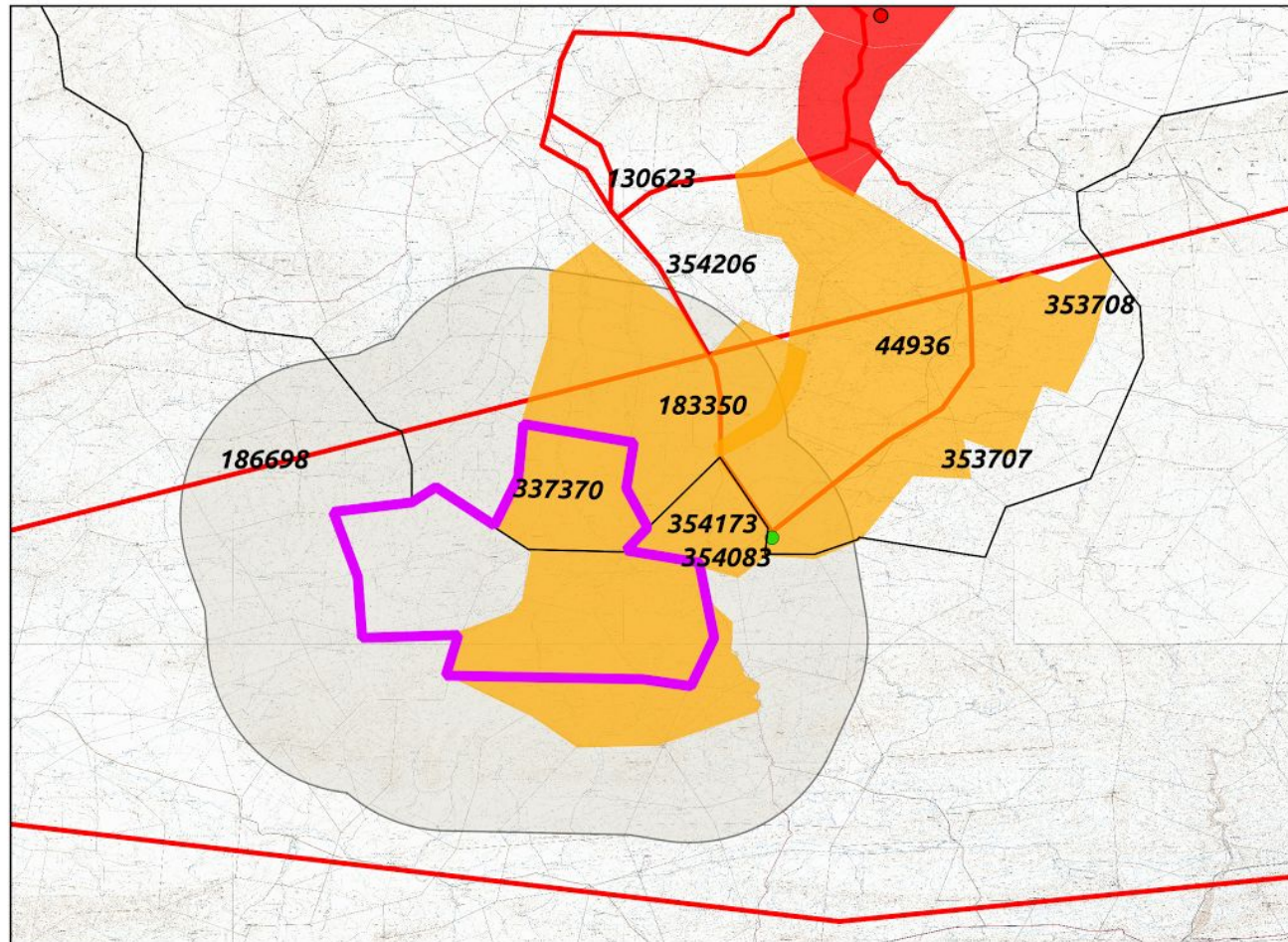
### Point surveys

High coverage

**Figure 2a. HIAs Map.** Previous Heritage Impact Assessments done in and near the proposed development area with SAHRIS NID labels indicated (PIAs excluded).



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## Legend

Proposed development

Inclusion zone - 10km

### Line surveys

Low coverage

### Area surveys

Medium coverage

Low coverage

### Points\_only\_PIA's

High coverage

Low coverage



0 10 20 km

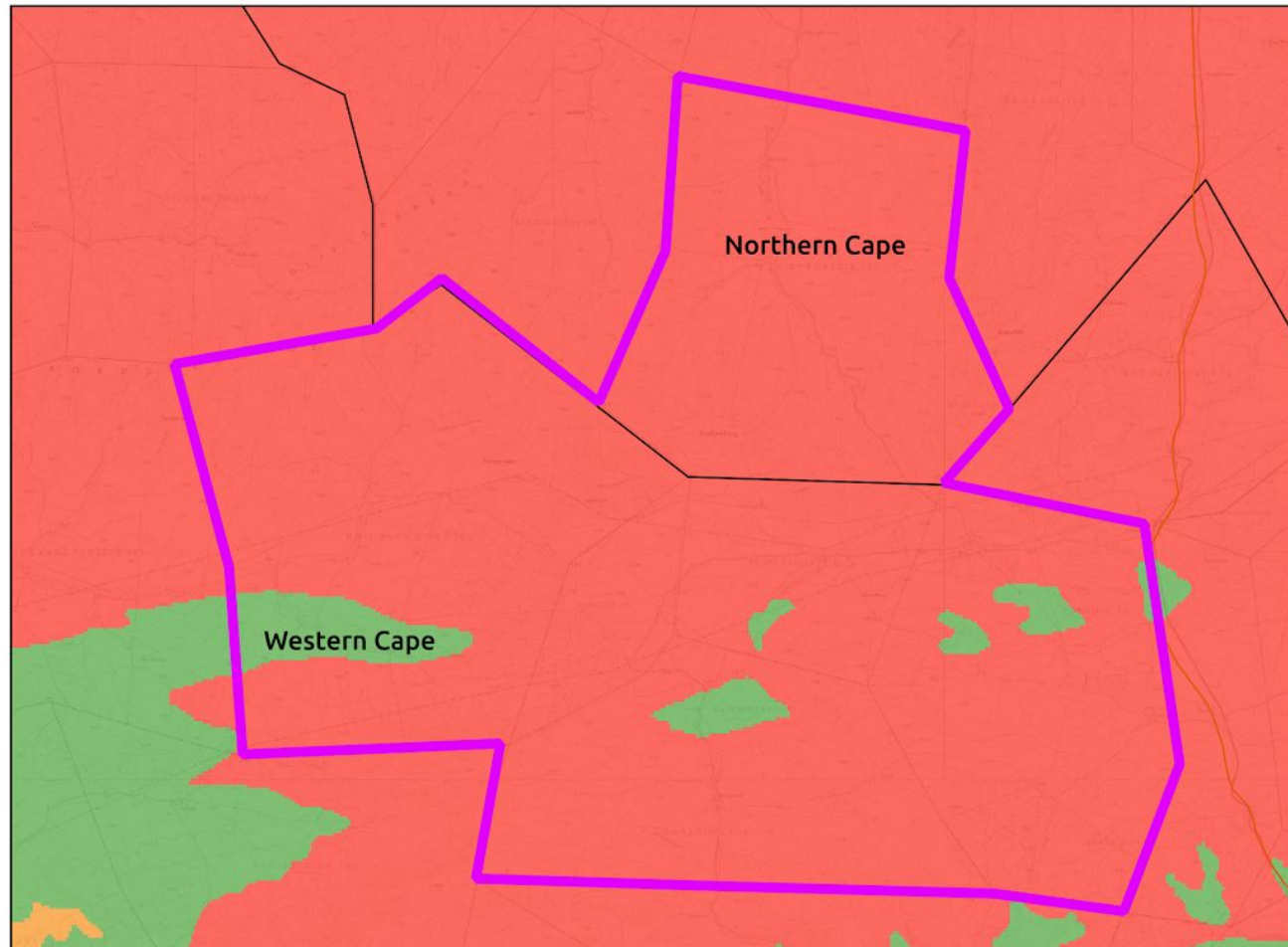


**Figure 2b. PIAs Map.** Previous Palaeontological Impact Assessments done in and near the proposed development (with SAHRIS NID labels indicated).





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### Legend

 Proposed Brandvalley WEF

### Palaeontological sensitivity

RED	Very high
ORANGE	High
GREEN	Moderate

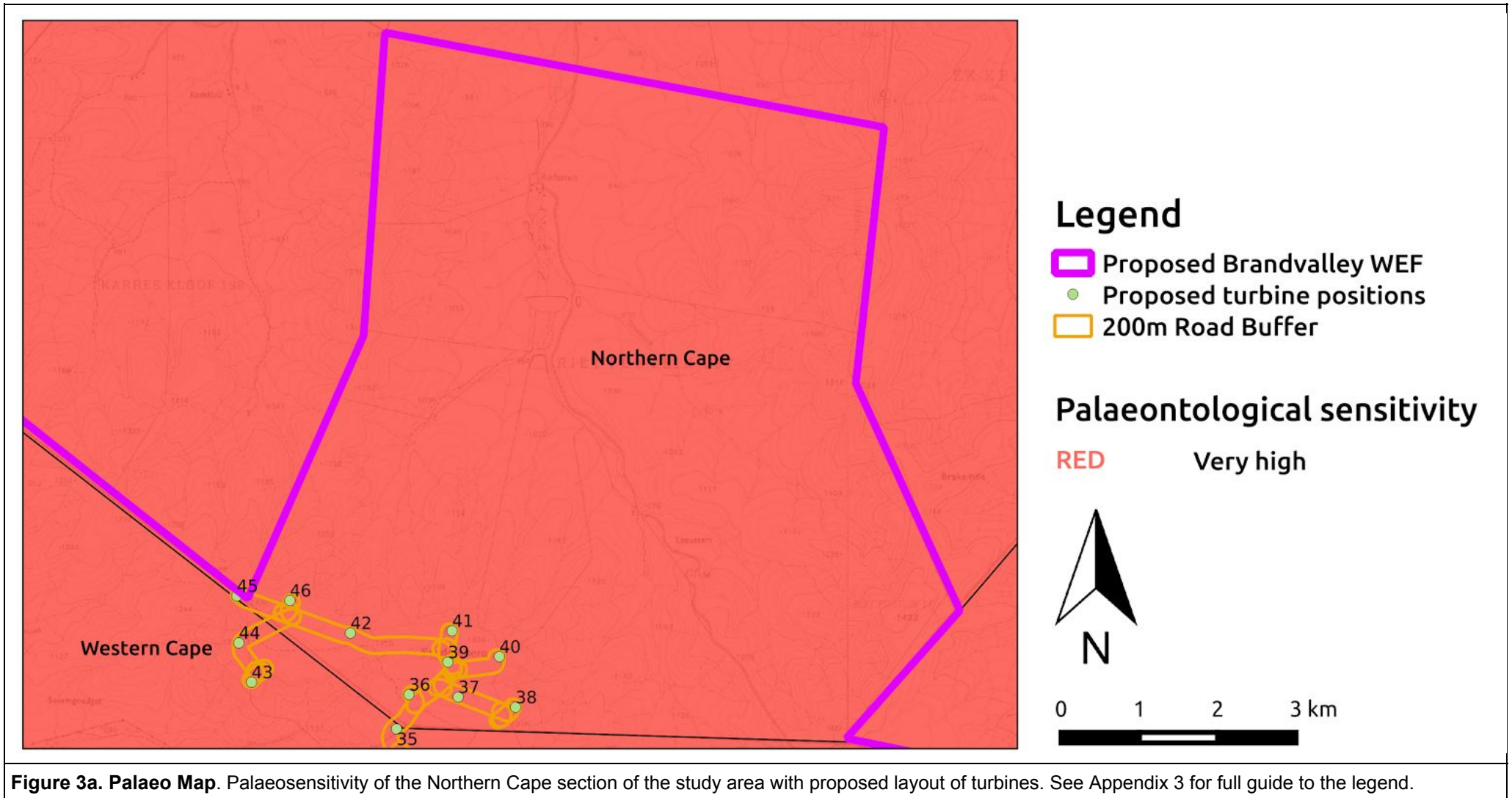


0 5 10 km

**Figure 3. Palaeo Map.** Palaeosensitivity of the study area. See Appendix 3 for full guide to the legend.



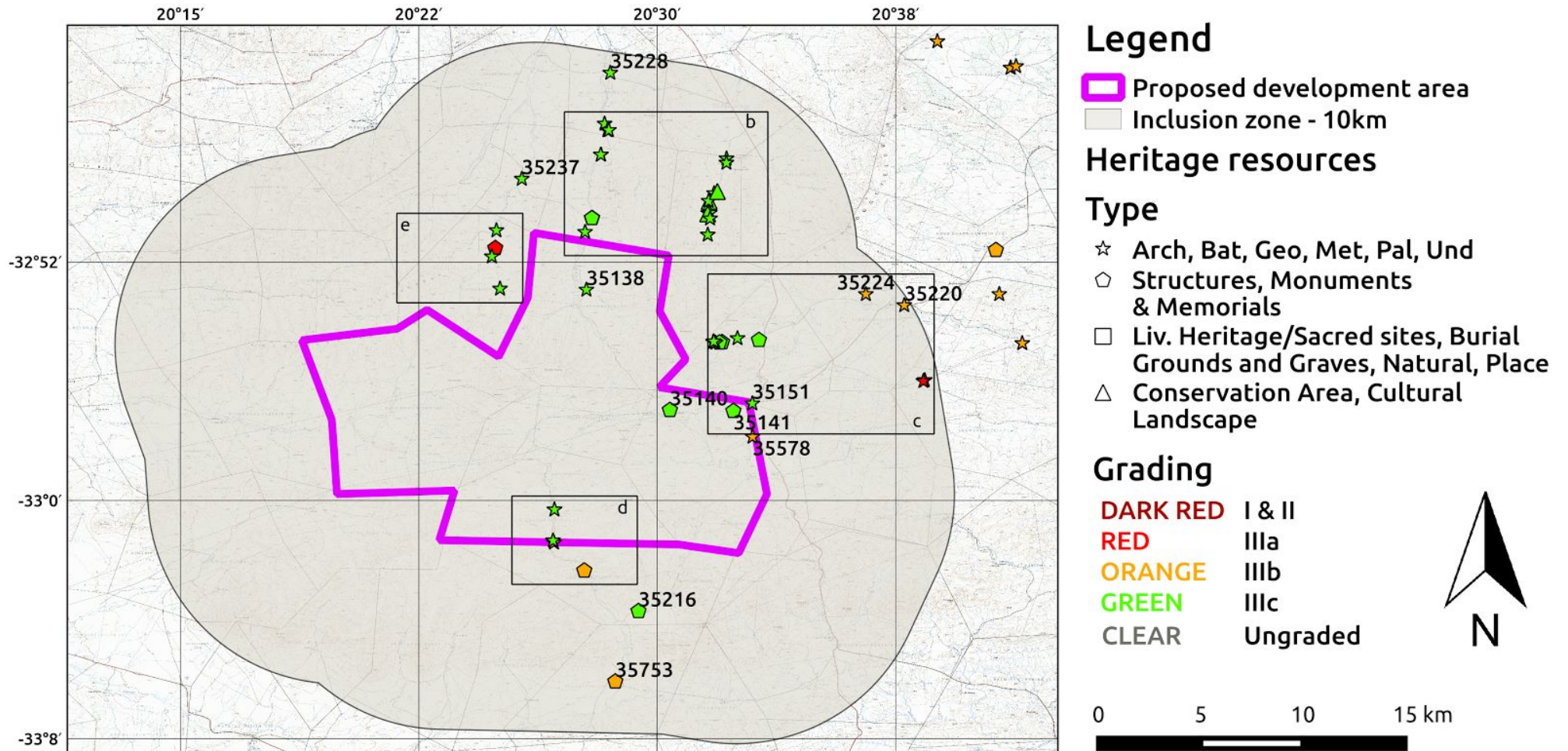
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**Figure 4a. Heritage Resources Map.** Heritage resources previously identified in and near the study area, with SAHRIS Site IDs indicated (see Figures 4b-e for insets).



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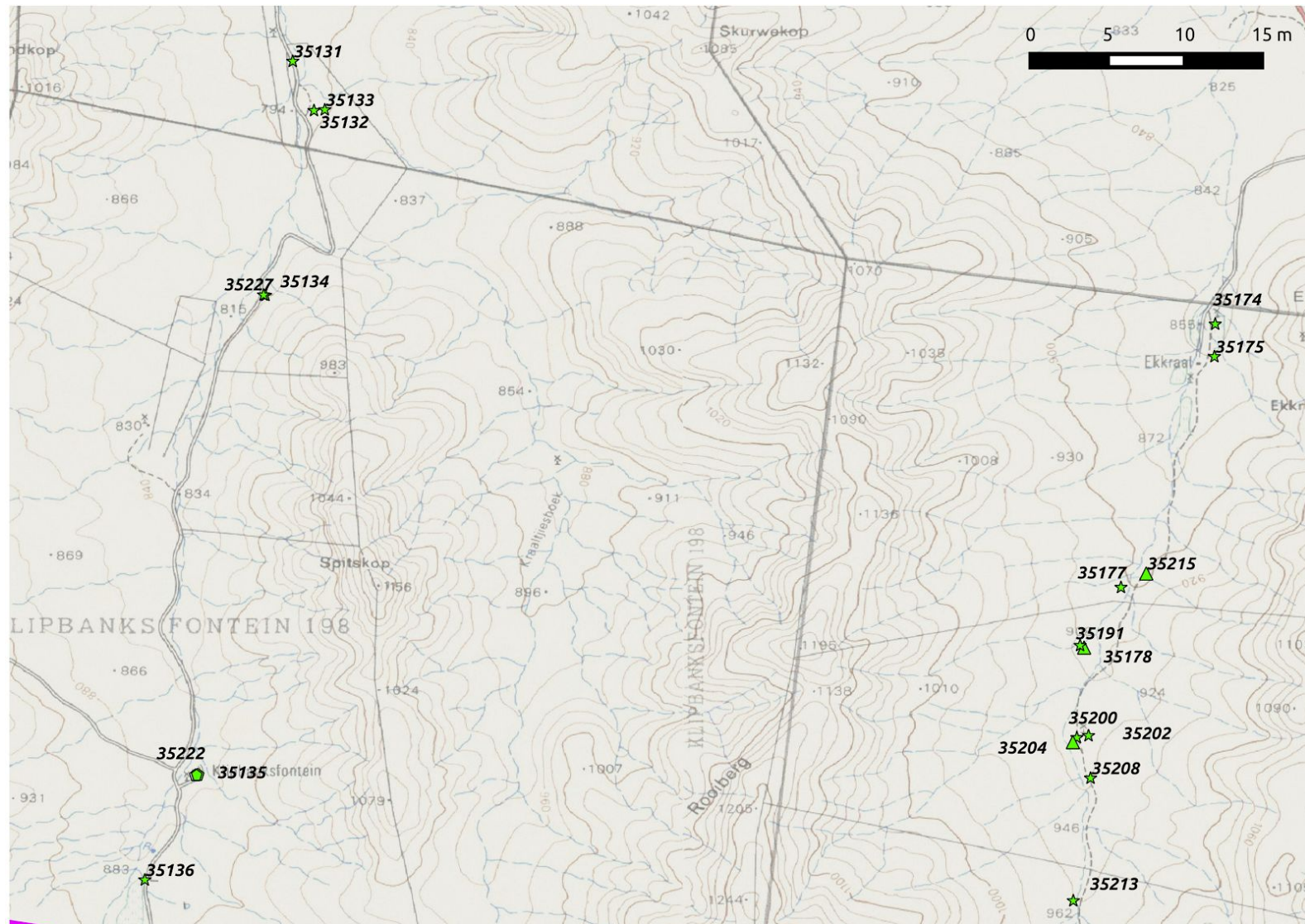


Figure 4b. Inset Map.





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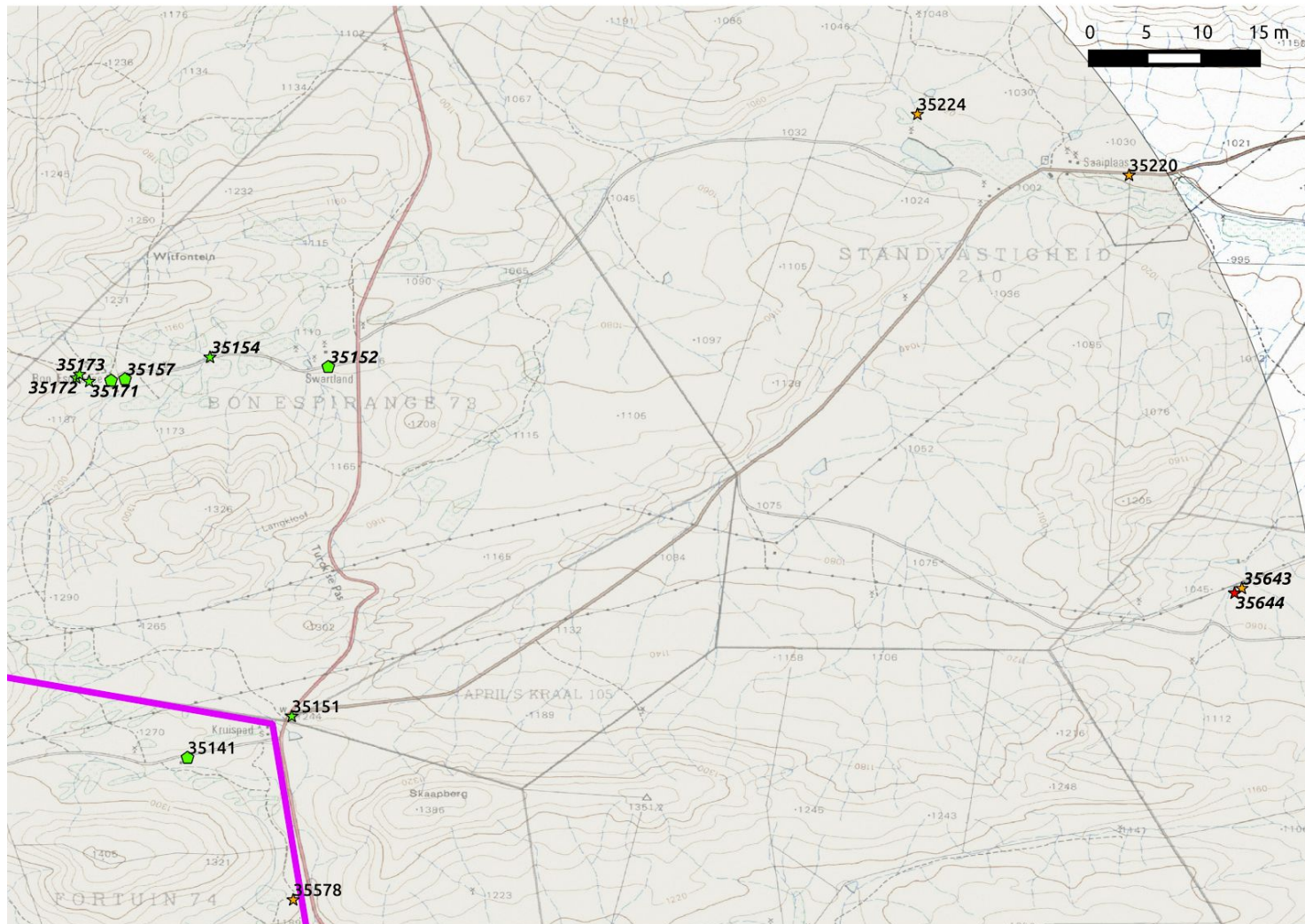
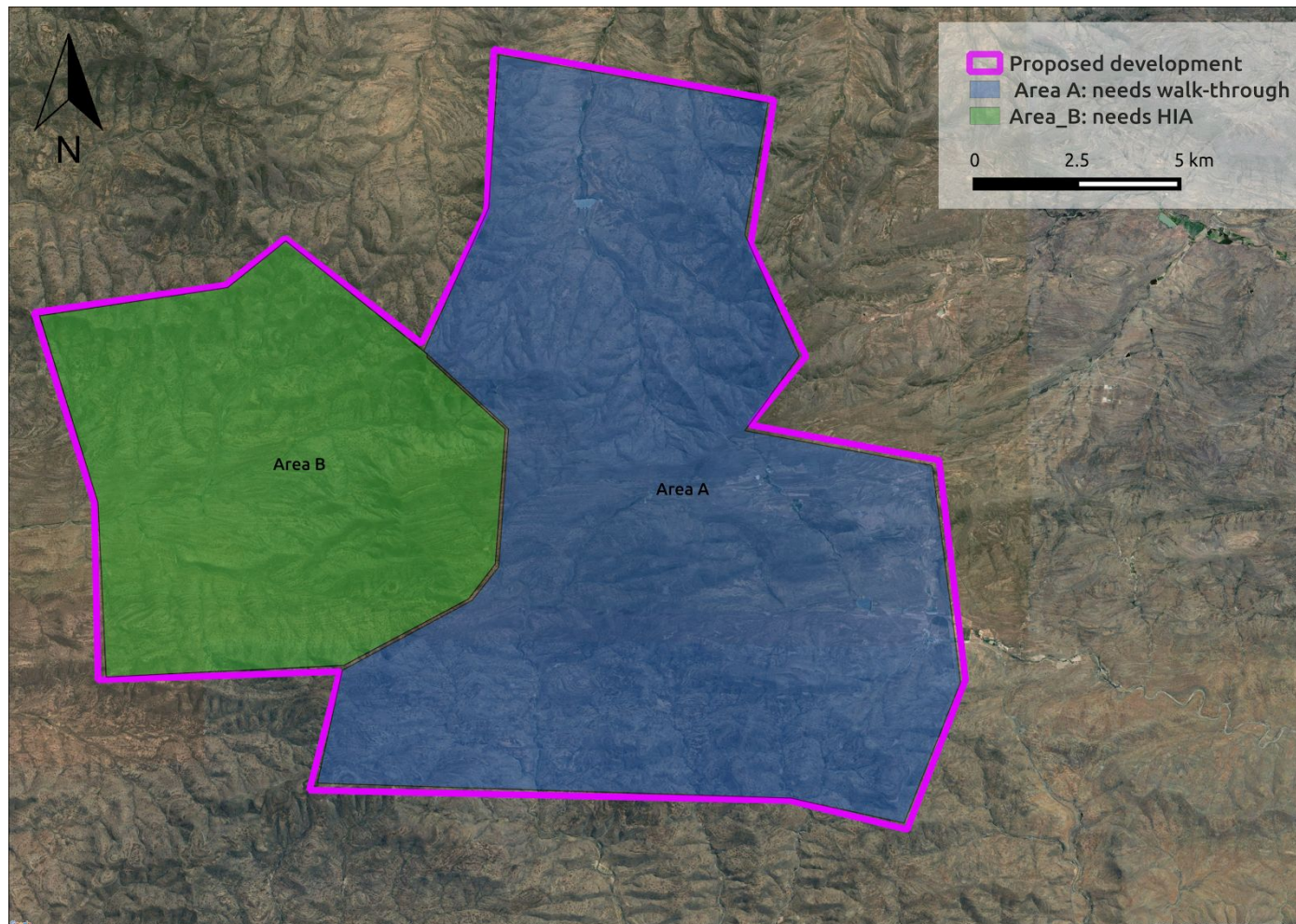


Figure 4c. Inset Map.



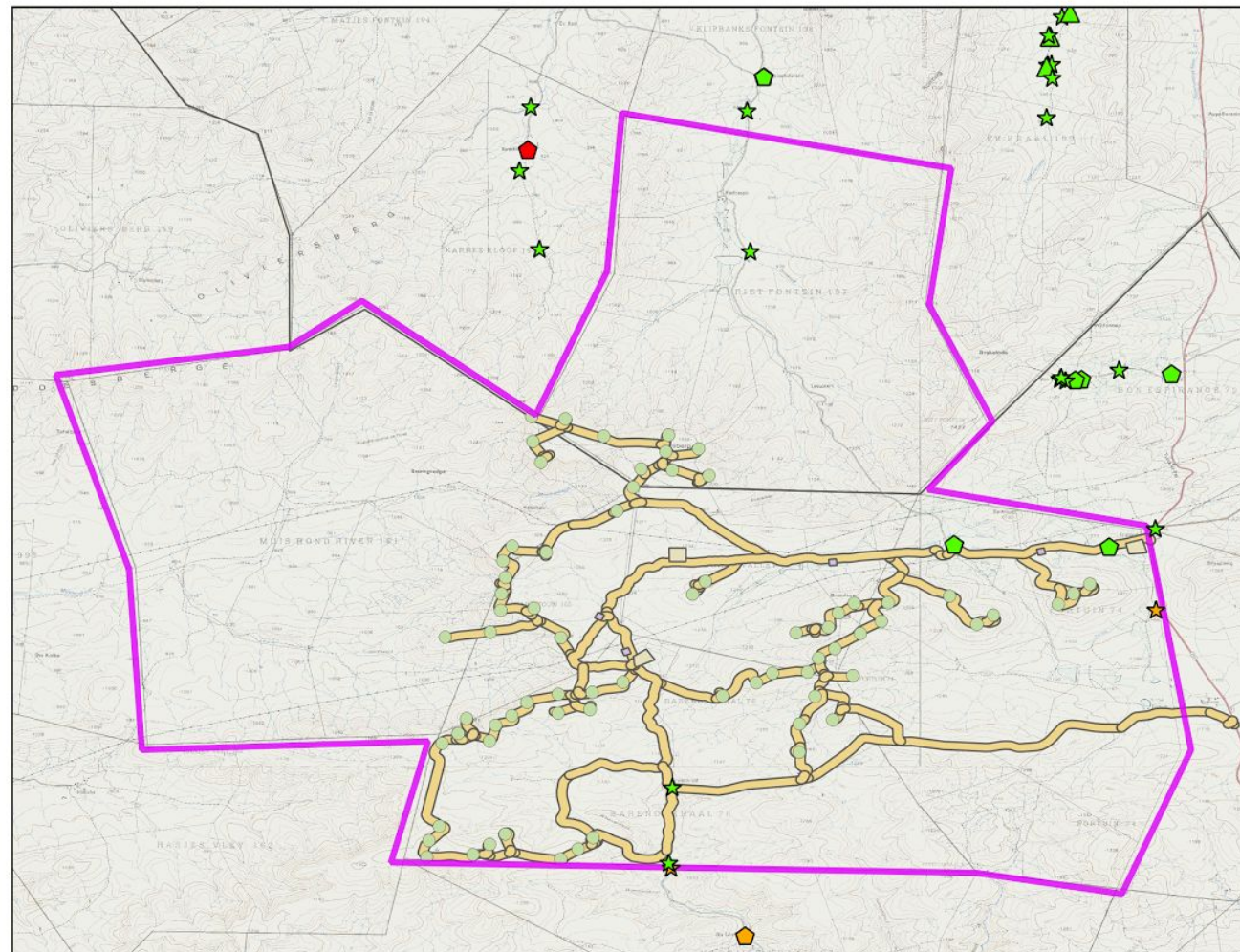


**Figure 5. Survey map.** Areas in blue (AREA A) require only a walk-through by an archaeologist once the position of the turbines is finalised. Areas in green (AREA B) require an HIA. Please refer to the cover page recommendations and the heritage statement for more detailed information.





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Proposed development  
**Turbine Infrastructure**

200m Road Buffer  
Construction Camp Options  
Turbine Layout

**Heritage resources**

**Type**

- ☆ Arch, Bat, Geo, Met, Pal, Und
- ⬡ Structures, Monuments & Memorials
- Liv. Heritage/Sacred sites, Burial Grounds and Graves, Natural, Place
- △ Conservation Area, Cultural Landscape

**Grading**

DARK RED	I & II
RED	IIIa
ORANGE	IIIb
GREEN	IIIc
CLEAR	Ungraded

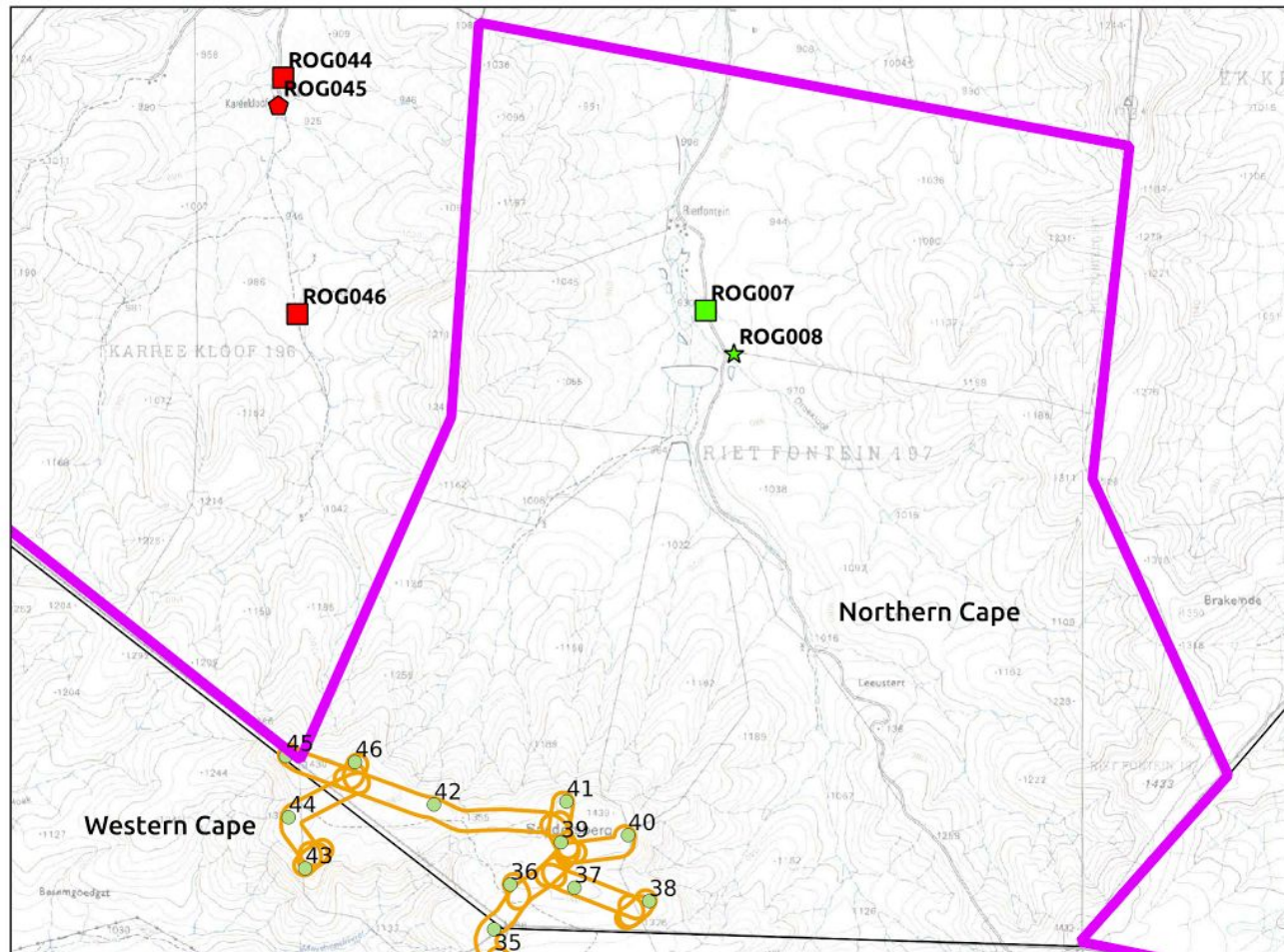


0 5 10 km

**Figure 7. Infrastructure map, indicating turbine and road layout in relation to heritage resources.**



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## Legend

Proposed Brandvalley WEF

Turbine Layout

200m Road Buffer

## Type of heritage resources

- Arch, Bat, Geo, Met, Pal, Und
- Structures, Monuments & Memorials
- Liv. Heritage/Sacred sites, Burial Grounds and Graves, Natural, Place

## Grading

<b>DARK RED</b>	I & II
<b>RED</b>	IIIa
<b>ORANGE</b>	IIIb
<b>GREEN</b>	IIIc

0 1 2 3 km



**Figure 7a. Infrastructure map**, indicating turbine and road layout in relation to heritage resources in the Northern Cape section of the proposed development.



## 8. Heritage statement and character of the area

The Brandvalley Wind Energy Facility (WEF) is proposed on the border of the Northern Cape and Western Cape along the R354 road which connects Matjiesfontein to Sutherland.

This project is the third phase (Phase 3) of a series of projects which started in 2011 with the proposed establishment of the Roggeveld Wind Energy Facility (CaseID 473). The original Roggeveld WEF project was broken down into smaller WEFs in 2013. The first of these was the Roggeveld Wind Farm Phase 1 (CaseID 4503). This was followed by the Karreebosch Wind Energy Project (Roggeveld Phase 2) (CaseID 6884) in 2014/2015. The proposed Brandvalley and Rietkloof WEFs are Phases 3 and 4 of the original project although the extent of the farms affected by the various developments have changed since the inception of the project.

CTS assessed an inclusion zone of 10km around the proposed Brandvalley WEF in order to better characterise the heritage resources of the area. Besides the Roggeveld phases, several other WEFs have previously been proposed within this 10km inclusion zone, namely: the Hidden Valley Phase 1 Karusa, the Hidden Valley Phase 2 Soetwater and the Hidden Valley Phase 3, Great Karoo. All of these WEFs are located on the eastern side of the R354.

Several Heritage Impact Assessments (HIAs) have already been undertaken and the possible impacts of the proposed WEFs on the archaeology, built environment, palaeontology and sense of place of the area have been assessed. This heritage statement specifically addresses the Northern Cape section of the Brandvalley WEF (which only includes Farm Rietfontein 197) and is being submitted to SAHRA. A second screener for the Western Cape portions has been submitted and endorsed by Heritage Western Cape.

An HIA for the Roggeveld Wind Energy Facility was conducted by the ACO in 2011 (Hart & Webley 2011) which included, amongst others, Farm Rietfontein 197. The sites identified during the 2011 survey included a series of stone piles consisting mostly of small cobbles. These sites (ROG008) were rated as having low significance. Six rock piles in proximity to these stone cairns were identified as possible graves (ROG007). In 2013, the ACO re-assessed the previous report in light of the new proposed Phase 1 Roggeveld WEF. **No further field work was undertaken** as the footprint of the two developments was very similar.

In 2014, the Karreebosch WEF (Roggeveld Phase 2) was proposed on the same area. Some of the turbines included in Karreebosch were located on ridges further west than those in the original Roggeveld Phase 1 WEF. Yet another HIA was conducted which included a survey (Hart & Kendrick 2014). No new sites were identified within Rietfontein 197 but a few sites were recorded in the river valley on the adjacent farm (Portion 1 of Farm 196). These sites consisted of a grave and cemetery (ROG044 and 046) and a brak dak huis (ROG045) worthy of conservation. **No sites were identified on any of the ridges during Phase 1 or Phase 2 of the Roggeveld WEF.**

After these two assessments the ACO found that *“Stone Age heritage and archaeology is extremely scarce in the areas that were searched. No archaeological sites of these kinds were recorded, despite the fact that 8 experienced archaeologists were involved in scouring the landscape”* (Hart & Webley 2013). Although some sites were identified, their density was not as high as anticipated by the specialists. The authors argued that this may be related to less favourable conditions for occupation in areas up on the higher ridges where the wind turbines are normally proposed. Sites identified in the wider area also include structures older than 100 years (such as stone walling related to pastoralism and Anglo Boer War fortifications) and burial grounds and graves. Most of the sites besides the burials are of low archaeological significance.





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The recommendations and comments made by SAHRA have also been summarised here for Roggeveld (06/01/2012, and 18/04/2013), Roggeveld Phase 1 (13/02/2014 and 10/04/2014) and Roggeveld Phase 2 - Karreebosch (19/02/2016):

- *No turbines are to be located within 3km of the R354 in order to create a visual buffer between the road and the development.*
- *Ancillary infrastructure should be no closer than 500m to the R354.*
- *The archaeologist be informed of the final layout of the turbines for a possible final walk down*

All of these developments included Farm Rietfontein 197 in their layout.

#### *Summary of archaeological work required*

1. **A walk-through** of the position of the turbines and ancillary infrastructure should be undertaken for the turbines proposed **in Area A** (see Figure 5). This walk-through can be conducted by an archaeologist as part of the Environmental Impact Assessment process. Area A comprises of Rietfontein 197 (Northern Cape), Remainder and Portion 1 of Barendskraal 76, Remainder and Portion 1 of Farm Brandvalley 75, Remainder and Portions 1, 2 and 3 of Farm Fortuin 74 and Portion 1 of Fortuin 74 (Ou Mure) (Western Cape). Area A has already been assessed by various archaeologists.
2. **An Archaeological Impact Assessment**, assessing both the position of the turbines and the general area, must be undertaken **in Area B** (see Figure 5). Area B comprises the Remainder of Kabeltouw 160 and Remainder and Portion 1 of Farm Muishond River 161. No previous heritage studies have yet been done in Area B. It is recommended that an archaeologist familiar with the Historical and Stone Age archaeology of the Western Cape be commissioned to do the study.

#### *Palaeontology*

The broader WEF area is underlain by formations of moderate (Waterford Formation of the Eccca Group) and very high fossil sensitivity (Abrahamskraal Formation of the Beaufort Group). Farm Rietfontein 197 is underlain solely by the Abrahamskraal Formation. Several Palaeontological Impact Assessments (PIAs) have been conducted in the last five years over this area. The first assessment was done by Duncan Miller who surveyed the area with the ACO team in 2011. He concluded that no further studies were required since very few fossils were found (Miller 2011). However, he suggested that monitoring be undertaken during excavations for footings of turbines, trenches, borrow pits and deep rock excavations since palaeontological material may be affected during the construction phase. These recommendations were endorsed by SAHRA for the Roggeveld and Roggeveld Phase 1 projects.

Several palaeontological site visits were later conducted in the area for the Karreebosch Wind Energy Facility (NID 183350), Komsberg substation (NID 354083) and the Soetwater (NID 353707) and Karusa (NID 353708) WEFs (Almond 2014, 2015a, 2015b, 2015c). The outcome of these surveys was that **bedrock excavations deeper than 1m should be monitored for fossil remains by the responsible ECO during the construction phase**. These recommendations were informed by the fact that the bedrock of the Lower Beaufort Group in this area is normally of low palaeontological sensitivity and is overlain by thick superficial sediments. These recommendations were supported by SAHRA in their comments on the Karreebosch WEF (19/02/2016).

#### *Summary of palaeontological work required*

CTS therefore agrees with the ACO (Hart & Kendrick 2014) that, *“while the geology of the study area is potentially palaeontologically sensitive, very few fossils were found*



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by either Dr Duncan Miller or Dr John Almond in the study area. No further work in this respect is recommended". Considering the number of palaeontological studies already undertaken in the area, the paucity of fossil material identified so far and the previous recommendations made by SAHRA in adjacent areas with the same geological formations, CTS recommends that **a monitoring brief by a palaeontologist be set up before construction starts. This brief will indicate where fresh exposures of highly sensitive formations (e.g. Abrahamskraal Formation) should be monitored by a palaeontologist during construction.** The monitoring brief will be prepared after the final position of turbines and infrastructure is decided.

It is furthermore recommended that **a Visual Impact Assessment (VIA) be conducted on Areas A and B to assess the visual impact of the WEF in its entirety.** An initial comment by HWC on the Roggeveld WEF had requested that the turbines be removed from the ridges of the mountains along the R354. A final comment in January 2013 had rescinded this requirement but maintained that **no turbines are to be located on Tafelkop or Spitskop.** Moreover, comments by SAHRA dated April 2013 maintained that:

- *No turbines are to be located within 3km of the R354 in order to create a visual buffer between the road and the development.*
- *Ancillary infrastructure should be no closer than 500m to the R354.*

The developer should be aware of these recommendations during the planning of the layout of the proposed WEF. However, these recommendations do not directly apply to Rietfontein 197 since it is located more than 3.5 km from the R354.

## APPENDIX 1 - Site List

### List of sites within 10km inclusion zone but outside proposed development area

Site id	Site no	Full site name	Site type	Heritage Significance/Grading
35644	GK121	Gamma Kappa 121	Stone walling	Grade IIIa
35240	ROG045	Roggeveld 045	Building	Grade IIIa
35214	ROG032	Roggeveld 032	Building	Grade IIIb
35220	HDV002	Hidden Valley 02	Stone walling	Grade IIIb
35224	HDV003	Hidden Valley 03	Stone walling	Grade IIIb
35643	GK120	Gamma Kappa 120	Stone walling	Grade IIIb
35753	ROG050	Roggeveld 050	Building	Grade IIIb
35131	ROG001	Roggeveld 001	Artefacts	Grade IIIc
35132	ROG002	Roggeveld 002	Artefacts	Grade IIIc
35133	ROG003	Roggeveld 003	Ruin >100 years	Grade IIIc
35134	ROG004	Roggeveld 004	Ruin >100 years	Grade IIIc
35135	ROG005	Roggeveld 005	Building	Grade IIIc
35136	ROG006	Roggeveld 006	Ruin >100 years	Grade IIIc
35151	ROG011	Roggeveld 011	Ruin >100 years	Grade IIIc
35152	ROG012	Roggeveld 012	Building	Grade IIIc
35154	ROG013	Roggeveld 013	Stone walling	Grade IIIc
35157	ROG014	Roggeveld 014	Transport infrastructure	Grade IIIc
35159	ROG015	Roggeveld 015	Building	Grade IIIc





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35171	ROG016	Roggeveld 016	Stone walling	Grade IIIc
35172	ROG017	Roggeveld 017	Stone walling	Grade IIIc
35173	ROG018	Roggeveld 018	Ruin >100 years	Grade IIIc
35174	ROG019	Roggeveld 019	Stone walling	Grade IIIc
35175	ROG020	Roggeveld 020	Stone walling	Grade IIIc
35177	ROG021	Roggeveld 021	Stone walling	Grade IIIc
35178	ROG022	Roggeveld 022	Conservation Area	Grade IIIc
35191	ROG025	Roggeveld 025	Ruin >100 years, Artefacts	Grade IIIc
35200	ROG026	Roggeveld 026	Ruin >100 years	Grade IIIc
35202	ROG028	Roggeveld 028	Artefacts	Grade IIIc
35204	ROG029	Roggeveld 029	Cultural Landscape	Grade IIIc
35208	ROG030	Roggeveld 030	Stone walling	Grade IIIc
35213	ROG031	Roggeveld 031	Ruin >100 years	Grade IIIc
35215	ROG033	Roggeveld 033	Cultural Landscape	Grade IIIc
35216	ROG034	Roggeveld 034	Building	Grade IIIc
35227	ROG039	Roggeveld 039	Ruin >100 years	Grade IIIc
35228	ROG040	Roggeveld 040	Artefacts	Grade IIIc
35237	ROG042	Roggeveld 042	Ruin >100 years	Grade IIIc
35238	ROG043	Roggeveld 043	Stone walling	Grade IIIc
35242	ROG047	Roggeveld 047	Ruin >100 years	Grade IIIc
35244	ROG049	Roggeveld 049	Ruin >100 years	Grade IIIc
35222	ROG037	Roggeveld 037	Building	Ungraded

## List of sites intersecting proposed development area and/or associated infrastructure

Site id	Site no	Full site name	Site type	Grading	Latitude	Longitude	Description	Recommendations
<b>Sites that will not be directly affected by infrastructure:</b>								
35578	GK056	Gamma Kappa 056	Artefacts	IIIb	-32.966667	20.55	MSA scatter at Fortuin	No further mitigation necessary. Will not be impacted by infrastructure.
35188	ROG024	Roggeveld 024	Ruin > 100 years	IIIb	-33.022167	20.445861	Trapvloer 8m ø with 1.5x2m 'room' on one side	No further mitigation necessary. Will not be impacted by infrastructure.
35217	ROG035	Roggeveld 035	Ruin > 100 years	IIIc	-33.021111	20.445361	Stone ruin 0.5m from road and a few metres from river	No further mitigation necessary. Will not be impacted by infrastructure.
35138	ROG008	Roggeveld 008	Stone walling	IIIc	-32.889528	20.4628611	Many stone piles with mostly small cobbles, perhaps 30 - 40 of them. Spread	No further mitigation necessary. Will not be impacted by infrastructure.
<b>Sites that will be directly affected by infrastructure:</b>								
35218	ROG036	Roggeveld 036	Stone walling	IIIc	-33.004861	20.446111	Stone kraal. A second one occurs 200m east and a third 250m northwest	Not to be impacted - 25m buffer zone around each recording of the site is required if site is to be impacted - a workplan to be submitted to HWC for approval
35140	ROG009	Roggeveld 009	Building	IIIc	-32.952639	20.5066389	Ou Mure farm complex	Unlikely to be impacted, but if so a historical architect should be consulted for any sensitive re-adaptation or restoration of the structure - a workplan must be submitted to HWC for any alteration.
35141	ROG010	Roggeveld 010	Building	IIIc	-32.953139	20.539944	Small white building	A historical architect should be consulted for any sensitive re-adaptation or restoration of the structure - a workplan to be submitted to HWC for any alteration if the building is older than 60 years





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## APPENDIX 2 - Reference List

NID	Author	Date	Type	Title
44934	Booth, C.	Aug-11	AIA	An archaeological desktop study for the proposed establishment of the Hidden Valley wind energy facility and associated infrastructure on a site south of Sutherland, Northern Cape Province
44935	Booth, C.	Feb-12	AIA	A Phase 1 AIA for the proposed Hidden Valley Wind Energy Facility, near Sutherland, Northern Cape Province
44936	Rossouw, L.	Mar-12	PIA	Palaeontological desktop assessment of the proposed Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province
53187	Hart, T. and L. Webley	Mar-11	HIA	Heritage Impact Assessment Proposed Wind Energy Facility
130621	van der Walt, J.	Jun-13	AIA	Archaeological Scoping Report for the Proposed Gunstfontein Renewable Energy Project: Wind and Solar Energy Facilities and The Associated Grid Connection Infrastructure, Northern Cape
130623	Millsteed, B.	Jul-13	PIA	Desktop Palaeontological Heritage Impact Assessment Report on the Site of Proposed Solar and Wind Energy Generation Facilities (Gunsfontein Project) to be Located on Various Farms Near Sutherland, Northern Cape Province
152531	Hart, T. and L. Webley	Dec-13	HIA	Heritage Impact Assessment Report for the Phase 1 Roggeveld Wind Farm
183350	Hart, T. and N. Kendrick	Dec-14	HIA	Heritage Impact Assessment for the Karreebosch Wind Farm (Phase 2 Roggeveld Wind Farm)
183350	Almond, J.	Oct-14	PIA	Palaeontological Heritage Assessment: Combined Desktop & Field-Based Study. proposed Karreebosch Wind Farm (Roggeveld Phase 2) near Sutherland, Northern Cape Province
186695	Murimbika, M.	Aug-14	HIA	Proposed Gamma-Kappa 2nd 765kV Eskom Transmission Powerline and Substations Upgrade Development in Western Cape Phase 1 Heritage Impact Assessment Study Report
186697*	Bandama, F. and S. Chirikure	Aug-14	AIA	An Archaeological Scoping and Assessment report for the proposed Gamma (Victoria West, Northern Cape) - Kappa (Ceres – Western Cape) 765Kv (2) Eskom power transmission line
186698*	Durand, F.	Jun-13	PIA	GAMMA-KAPPA 765kV Transmission Line, Western Cape Province Scoping Report - Palaeontology
186703	Axis Landscape Architects	Jan-14	VIA	The Proposed Gamma-kappa 2nd 765KV transmission powerline and substations upgrade - Northern and Western Cape (NEAS reference DEA/EIA/0001267/2012 DEA reference 14/12/16/3/3/2/353)*
337370	Miller, D.	Mar-11	PIA	Palaeontological Impact Assessment Proposed Roggeveld Wind Energy Facility
340999	Booth, C.	Oct-15	AIA	A Phase 1 Archaeological Impact Assessment for the Proposed Karusa Facility Substation and



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				Ancillaries, near Sutherland, Karoo Hoogland Local Municipality, Namakwa District Municipality, NC Province
341015	Booth, C.	Oct-15	AIA	A Phase 1 Archaeological Impact Assessment for the Proposed Eskom Karusa Switching Station, Ancillaries and a 132kV Double Circuit Overhead Power Line, Near Sutherland, Karoo Hoogland Local Municipality, Namakwa District Municipality, Northern Cape Province
351846	Kaplan, J.	Dec-15	AIA	Proposed borrow pit (Karusa North) on the Farm Rheeboeke Fontein 209 Remainder near Sutherland, Northern Cape Assessment conducted under Section 38 (3) of the National Heritage Resource Act (No. 25 of 1999)
353483	Kaplan, J.	Dec-15	AIA	Proposed borrow pit (Karusa R354) on the Farm Karreebosch 200/1 near Sutherland, Northern Cape Assessment conducted under Section 38 (3) of the National Heritage Resource Act (No. 25 of 1999)
353706	Booth, C.	Oct-15	AIA	An Archaeological Walk-Through For The Proposed Soetwater Wind Energy Facility Situated On The Farms: The Remainder Of And Portion 1, 2 And 4 Of Farm Orange Fontein 203 And Annex Orange Fontein 185, Farm Leeuwe Hoek 183 And Farm Zwanepoelshoek 184, Near Sutherland, Karoo Hoogland Local Municipality, Namakwa District Municipality, Northern Cape Province.
353707	Almond, J.	Oct-15 (b)	PIA	Palaeontological Heritage Assessment: Combined Desktop & Field-Based Study: Authorised Soetwater Wind Farm Near Sutherland, Northern Cape Province
353708	Almond, J.	Oct-15 (c)	PIA	Palaeontological Heritage Assessment: Combined desktop & field-based study: authorised Karusa Wind Farm near Sutherland, Namaqua District Municipality, Northern Cape Province
353709	Booth, C.	Oct-15	AIA	An Archaeological Walk-Through For The Proposed Karusa Wind Energy Facility Situated On The Farms: De Hoop 202, Standvastigheid 210, Portion 1 Of The Farm Rheeboeke Fontein 209, Portion 2 Of The Farm Rheeboeke Fontein 209, Portion 3 Of The Farm Rheeboeke Fontein 209 And The Remainder Of The Farm Rheeboeke Fontein 209, Near Sutherland, Karoo Hoogland Local Municipality, Namakwa District Municipality, Northern Cape Province.
354082	Booth, C.	Aug-15	AIA	Phase 1 Archaeological Impact Assessment for the proposed extension of the existing Komsberg Substation (two alternative areas) and widening of the access road, near Sutherland, NC Province
354083	Almond, J.	Aug-15 (a)	PIA	Palaeontological Heritage Assessment: Combined Desktop and Field-Based Study (Basic Assessment) for the proposed expansion of the existing Komsberg MTS on farm Standvastigheid 210 near Sutherland, NC Province
354173	Almond, J.	Jan-16	PIA	Recommended exemption from further palaeontological studies: Proposed Construction of the Eskom Karusa Switching Station Complex, 132kV Double Circuit Overhead Power Line, Karusa Facility Substation Complex and Ancillary Developments near Sutherland, NC Province





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354206	Almond, J.	Dec-15 (d)	PIA	Recommended exemption from further palaeontological studies: Proposed exploitation of fresh and weathered dolerite from four quarry sites near Sutherland, Namaqua District Municipality, Northern Cape
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\*The VIA was undertaken on the same project as 186697 and 186698.



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### APPENDIX 3 - Keys/Guides

#### Key/Guide to Acronyms

<b>AIA</b>	Archaeological Impact Assessment
<b>DEA</b>	Department of Environmental Affairs
<b>HIA</b>	Heritage Impact Assessment
<b>NEMA</b>	National Environmental Management Act, no 107 of 1998
<b>NHRA</b>	National Heritage Resources Act, no 25 of 1999
<b>PIA</b>	Palaeontological Impact Assessment
<b>SAHRA</b>	South African Heritage Resources Agency
<b>SAHRIS</b>	South African Heritage Resources Information System
<b>VIA</b>	Visual Impact Assessment

#### Full guide to Palaeosensitivity Map legend

<b>RED:</b>	VERY HIGH - field assessment and protocol for finds are required
<b>ORANGE/YELLOW:</b>	HIGH - desktop study is required and based on the outcome of the desktop study, a field assessment is likely
<b>GREEN:</b>	MODERATE - desktop study is required
<b>BLUE/PURPLE:</b>	LOW - no palaeontological studies are required however a protocol for chance finds is required
<b>GREY:</b>	INSIGNIFICANT/ZERO - no palaeontological studies are required
<b>WHITE/CLEAR:</b>	UNKNOWN - these areas will require a minimum of a desktop study.

## APPENDIX 4 - Methodology

The Heritage Screener summarises the heritage impact assessments and studies previously undertaken within the area of the proposed development and its surroundings. Heritage resources identified in these reports are assessed by our team during the screening process.

The heritage resources will be described both in terms of **type**:

- Group 1: Archaeological, Underwater, Palaeontological and Geological sites, Meteorites, and Battlefields
- Group 2: Structures, Monuments and Memorials
- Group 3: Burial Grounds and Graves, Living Heritage, Sacred and Natural sites
- Group 4: Cultural Landscapes, Conservation Areas and Scenic routes

and **significance** (Grade I, II, IIIa, b or c, ungraded), as determined by the author of the original heritage impact assessment report or by formal grading and/or protection by the heritage authorities.

Sites identified and mapped during research projects will also be considered.

Grading of heritage sites which form part of the national estate is defined in s. 7 of the National Heritage Resources Act (NHRA) as:

*(a) **Grade I:** Heritage resources with qualities so exceptional that they are of special national significance; Examples of these sites are Mapungubwe Cultural Landscape, The Parliament of South Africa, Sarah Baartman Burial Site, Robert Sobukwe's grave, Lake Fundudzi, Voortrekker Monument, Union Buildings.*

*(b) **Grade II:** Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; they are normally declared Provincial Heritage Sites under s. 27 of the NHRA after the competent Provincial Heritage Resources Authority has established their significance. Many of the current Provincial Heritage Sites were declared National Monument under the previous heritage legislation and their status was changed to Provincial Heritage Sites when the National Heritage Resources Act was proclaimed in 1999. Amongst these sites, Mapoch's Caves in Limpopo, Umhlatuzana Rock Shelter in KwaZulu Natal, Van der Stel's Copper Mine in the Northern Cape, the old Cemetery in Grahamstown, Eastern Cape and Baboon Point, in the Western Cape.*

*(c) **Grade III:** Other heritage resources worthy of conservation, and which prescribes heritage resources assessment criteria, consistent with the criteria set out in section 3(3), which must be used by a heritage resources authority or a local authority to assess the intrinsic, comparative and contextual significance of a heritage resource and the relative benefits and costs of its protection, so that the appropriate level of grading of the resource and the consequent responsibility for its management may be allocated (...).*

The following sub-categories are currently in use for Grade III::





**Grade IIIa** sites are sites of such a high local significance that should be protected and retained. These sites should be included in the heritage register of each province as defined in s. 30 of the NHRA and should not be impacted upon. In the instance of buildings, any alteration must be regulated. Because of their nature, all human remains are considered of high significance. While relocation of graves is common practice, this should always be considered as the last option. Examples of these sites are all graves and burial grounds which have not been graded I or II, Peers Cave in Western Cape,

**Grade IIIb** sites are resources of medium local significance. They should preferably be retained where possible, but where not possible the site must be fully investigated and/or mitigated. After mitigation they may be impacted upon.

**Grade IIIc** sites are of low local significance. These resources must be satisfactorily studied before destruction. In many instances the recording and description of the site undertaken at the heritage impact assessment level is sufficient and further recording or mitigation may not be required. These sites include for instance small knapping sites which have been sufficiently recorded at the archaeological impact assessment level, palaeontological fossils of low significance which do not require recovery. In the case of the built environment, IIIc structures will only require protection and regulation if the significance of the environs in which they are located is sufficient to warrant protective measures.

The heritage specialist in the field should suggest a grading for the site, but it will then need to be ratified and accepted by the competent heritage authority.

Sites identified and mapped during research projects will also be considered.

#### **DETERMINATION OF THE EXTENT OF THE INCLUSION ZONE TO BE TAKEN INTO CONSIDERATION**

The extent of the inclusion zone to be considered for the Heritage Screener will be determined by CTS based on:

- the size of the development,
- the number and outcome of previous surveys existing in the area
- the potential cumulative impact of the application.

The inclusion zone will be considered as the region within a maximum distance of 50 km from the boundary of the proposed development.

#### **DETERMINATION OF THE PALAEONTOLOGICAL SENSITIVITY**

The possible impact of the proposed development on palaeontological resources is gauged by:

- reviewing the fossil sensitivity maps available on the South African Heritage Resources Information System (SAHRIS)
- considering the nature of the proposed development
- when available, taking information provided by the applicant related to the geological background of the area into account

#### **DETERMINATION OF THE COVERAGE RATING ASCRIBED TO A REPORT POLYGON**



Each report assessed for the compilation of the Heritage Screener is colour-coded according to the level of coverage accomplished. The extent of the surveyed coverage is labeled in three categories, namely low, medium and high. In most instances the extent of the map corresponds to the extent of the development for which the specific report was undertaken.

**Low coverage** will be used for:

- desktop studies where no field assessment of the area was undertaken;
- reports where the sites are listed and described but no GPS coordinates were provided.
- older reports with GPS coordinates with low accuracy ratings;
- reports where the entire property was mapped, but only a small/limited area was surveyed.
- uploads on the National Inventory which are not properly mapped.

**Medium coverage** will be used for

- reports for which a field survey was undertaken but the area was not extensively covered. This may apply to instances where some impediments did not allow for full coverage such as thick vegetation, etc.
- reports for which the entire property was mapped, but only a specific area was surveyed thoroughly. This is differentiated from low ratings listed above when these surveys cover up to around 50% of the property.

**High coverage** will be used for

- reports where the area highlighted in the map was extensively surveyed as shown by the GPS track coordinates. This category will also apply to permit reports.

## RECOMMENDATION GUIDE

The Heritage Screener includes a set of recommendations to the applicant based on whether an impact on heritage resources is anticipated. One of three possible recommendations is formulated:

**(1) The heritage resources in the area proposed for development are sufficiently recorded** - The surveys undertaken in the area adequately captured the heritage resources. There are no known sites which require mitigation or management plans. No further heritage work is recommended for the proposed development.

This recommendation is made when:

- enough work has been undertaken in the area
- it is the professional opinion of CTS that the area has already been assessed adequately from a heritage perspective for the type of development proposed

**(2) The heritage resources and the area proposed for development are only partially recorded** - The surveys undertaken in the area have not adequately captured the heritage resources and/or there are sites which require mitigation or management plans. Further specific heritage work is recommended for the proposed development.



This recommendation is made in instances in which there are already some studies undertaken in the area and/or in the adjacent area for the proposed development. Further studies in a limited HIA may include:

- improvement on some components of the heritage assessments already undertaken, for instance with a renewed field survey and/or with a specific specialist for the type of heritage resources expected in the area
- compilation of a report for a component of a heritage impact assessment not already undertaken in the area
- undertaking mitigation measures requested in previous assessments/records of decision.

**(3) The heritage resources within the area proposed for the development have not been adequately surveyed yet - Few or no surveys have been undertaken in the area proposed for development. A full Heritage Impact Assessment with a detailed field component is recommended for the proposed development.**

**Note:**

The responsibility for generating a response detailing the requirements for the development lies with the heritage authority. However, since the methodology utilised for the compilation of the Heritage Screeners is thorough and consistent, contradictory outcomes to the recommendations made by CTS should rarely occur. Should a discrepancy arise, CTS will immediately take up the matter with the heritage authority to clarify the dispute.

The compilation of the Heritage Screener will not include any field assessment. The Heritage Screener will be submitted to the applicant within 24 hours from receipt of full payment. **If the 24-hour deadline is not met by CTS, the applicant will be refunded in full.**