

CTS HERITAGE

HERITAGE SCREENER

CTS Reference Number:	CTS20_145
SAHRIS Reference:	15700
Client:	Savannah Environmental (Pty) Ltd
Date:	September 2020
Title:	HERITAGE SCREENING ASSESSMENT FOR BASIC ASSESSMENT PROCESS FOR THE GRID CONNECTION INFRASTRUCTURE, INCLUDING 132KV OVERHEAD POWERLINE, SWITCHING STATION AND ANCILLARIES, FOR THE GREAT KAROO WIND FARM, NORTHERN CAPE.

Figure 1a. Satellite map indicating the location of the proposed development in the Northern Cape

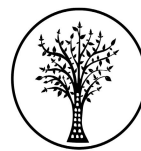
RECOMMENDATION

The heritage resources in the area proposed for development are sufficiently recorded - The surveys undertaken in the area adequately captured the heritage resources. There is one known sites which requires mitigation as indicated. No further heritage work is recommended for the proposed development. From a heritage perspective, the proposed OHL and switching station can be located anywhere within the 500m area and 300m corridor assessed in this screening assessment.

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1. Proposed Development Summary

Great Karoo Wind Farm (Pty) Ltd, proposes the development of specific grid connection infrastructure required to connect and evacuate the generated power of the authorised Great Karoo Wind Farm (DEA Ref No. 12/12/20/2370/3) to the national electricity grid. Following consultation with Eskom, it has been confirmed that the Great Karoo Wind Farm must connect to the Hidden Valley substation located at the ACED Renewables Hidden Valley (Karusa) Wind Farm, which is currently under construction, to the west of Great Karoo Wind Farm. The project is located ~44km south of Sutherland and ~50km north of Matjiesfontein within the Northern Cape Province and falls within the Namakwa District Municipality and the Karoo Hoogland Local Municipality.

The grid connection infrastructure required includes a switching station (up to 100m x 100m which is 2ha) to be developed adjacent to the authorised Great Karoo Wind Farm on-site substation. A 132kV double- or single-circuit overhead powerline, with a length of up to 14km, will connect the proposed switching station to the Eskom Hidden Valley substation. The pylon structures of the power line will be up to 32m high and the power line will be developed within the servitude of up to 40m wide.

A grid connection corridor of 300m has been identified for the power line, which widens to ~740m wide for the eastern section of the powerline to allow for consideration of alternatives. A 500m assessment area around the wind farm substation has been considered for the placement of the switching station. Collectively, these assessment areas are referred to as the “development envelope”. The proposed infrastructure will be appropriately placed within the development envelope, outside of identified environmental sensitive areas. Where possible, the switching station will be accessed via the authorised access road to the Great Karoo Wind Farm substation. However, where this is not feasible during construction a service track along the length of the power line servitude, of up to 4m wide, will be required to allow for large crane movement. This track will be rehabilitated following construction to a typical ‘jeep’ track (i.e. off-road track) for use during operation. Other associated infrastructure includes drainage line crossing infrastructure (culverts) and temporary laydown area/s that will be rehabilitated upon completion of the construction phase.

Two power line alternatives are being considered for the project which are near the starting point of the power line at the proposed switching station. Both alternatives are assessed equally as part of the Basic Assessment process. The alternative that will be developed will depend on the final placement of turbines at the Great Karoo Wind Farm, since the powerline will need to be routed between the turbines (the final turbine positions will only be confirmed closer to the time of wind farm construction in which Eskom setback requirements will also need to be catered for). It is therefore requested that both alternatives be approved, on condition that only one of the alternatives will be developed.

The grid connection infrastructure will be located within three affected properties:

- » Farm Kentucky No. 206;
- » Portion 1 of the Farm Orange Fontein No. 203; and
- » Remaining Extent of the Farm De Hoop No. 202.

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2. Application References

Name of relevant heritage authority(s)	SAHRA
Name of decision making authority(s)	DEFF

3. Property Information

Latitude / Longitude	32°48'36.74"S 20°37'24.20"E (Western-most point) 32°49'9.06"S 20°43'27.41"E (Eastern-most point)
Erf number / Farm number	Farm Kentucky No. 206; Portion 1 of the Farm Orange Fontein No. 203; and Remaining Extent of the Farm De Hoop No. 202.
Local Municipality	Karoo Hoogland Local Municipality
District Municipality	Namakwa District Municipality
Previous Magisterial District	Sutherland
Province	Northern Cape
Current Use	Agriculture
Current Zoning	Agriculture

4. Nature of the Proposed Development

Total Area	Approximately 14km x 300m and 500m assessment areas around both the switchyard and Hidden Valley substation
Depth of excavation (m)	Max 3m
Height of development (m)	Up to 32m

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5. Category of Development

x	Triggers: Section 38(8) of the National Heritage Resources Act
	Triggers: Section 38(1) of the National Heritage Resources Act
x	1. Construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier over 300m in length.
	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 ² in extent
	b) involving three or more existing erven or subdivisions thereof
	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 ²
	5. Other (state):

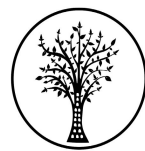
6. Additional Infrastructure Required for this Development

Laydown areas, a jeep track and a 8m wide road to provide access to the switching station etc

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7. Mapping (please see Appendix 3 and 4 for a full description of our methodology and map legends)

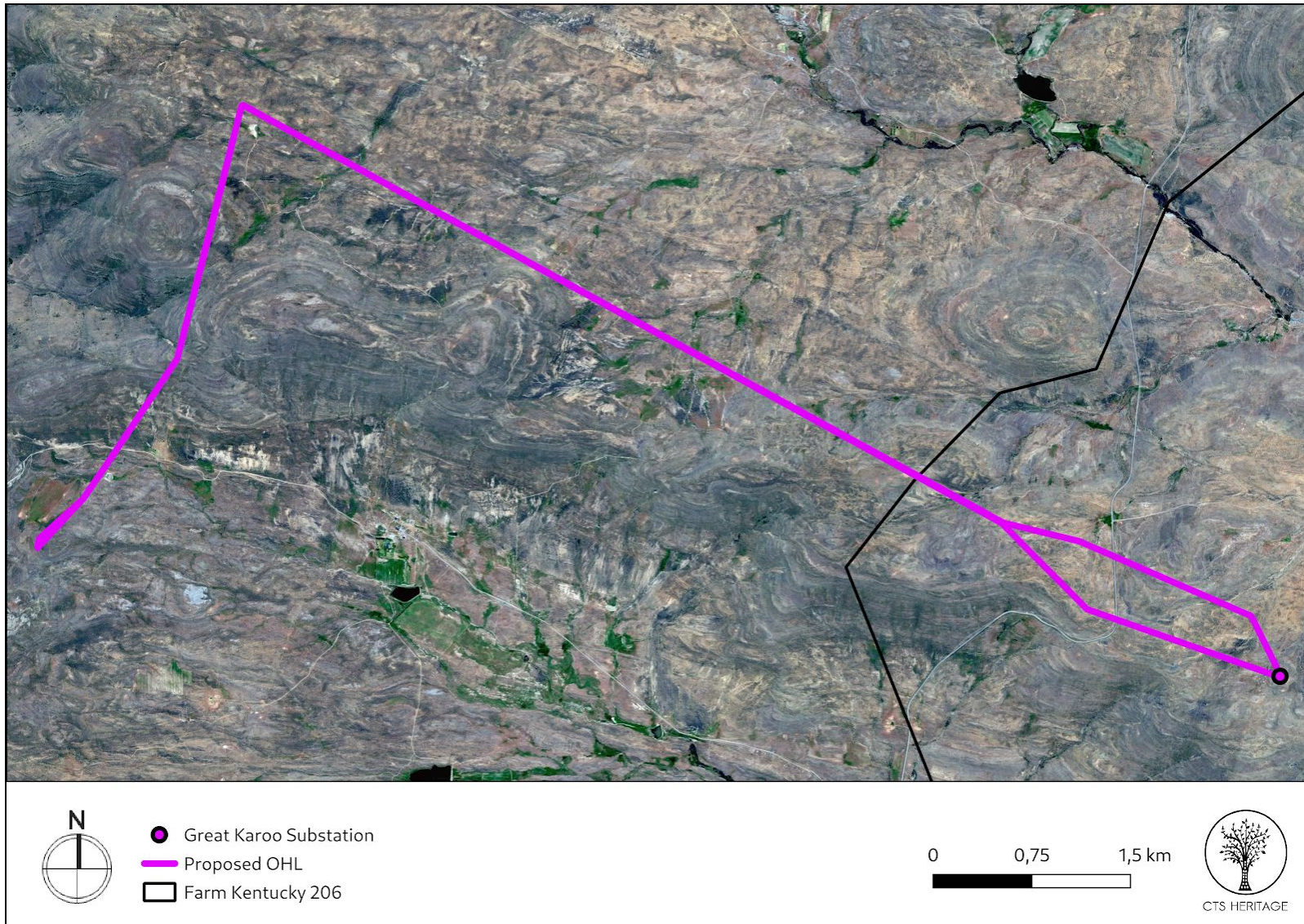
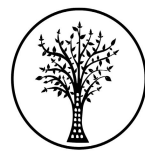


Figure 1b. Overview Map. Satellite image (2020) indicating the proposed development area relative to the Farm Kentucky 206 within which the Great Karoo WEF is located

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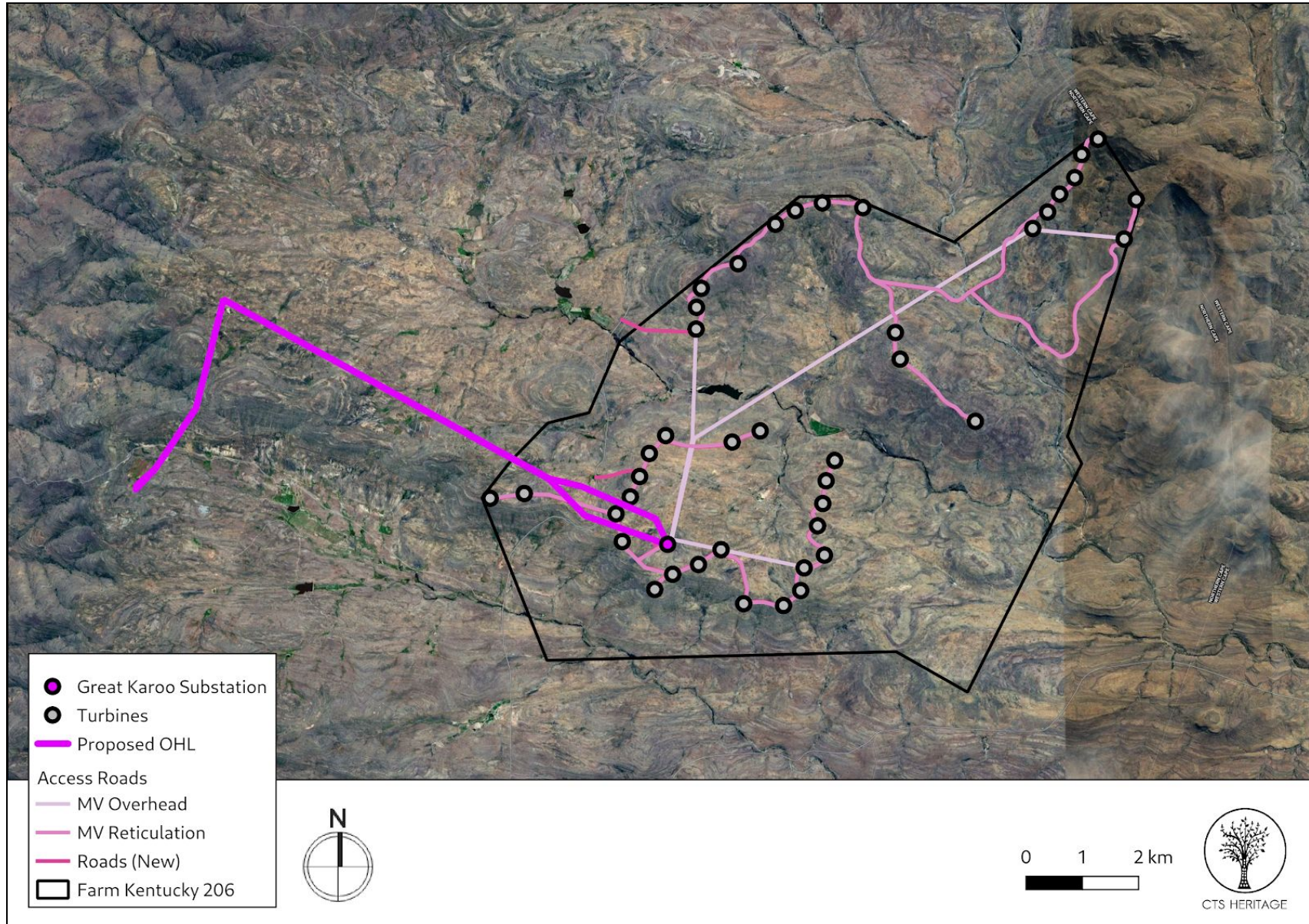
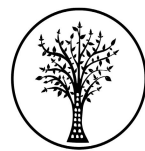


Figure 1c. Overview Map. Satellite image (2020) indicating the proposed development area relative to the previously approved development of the Great Karoo WEF

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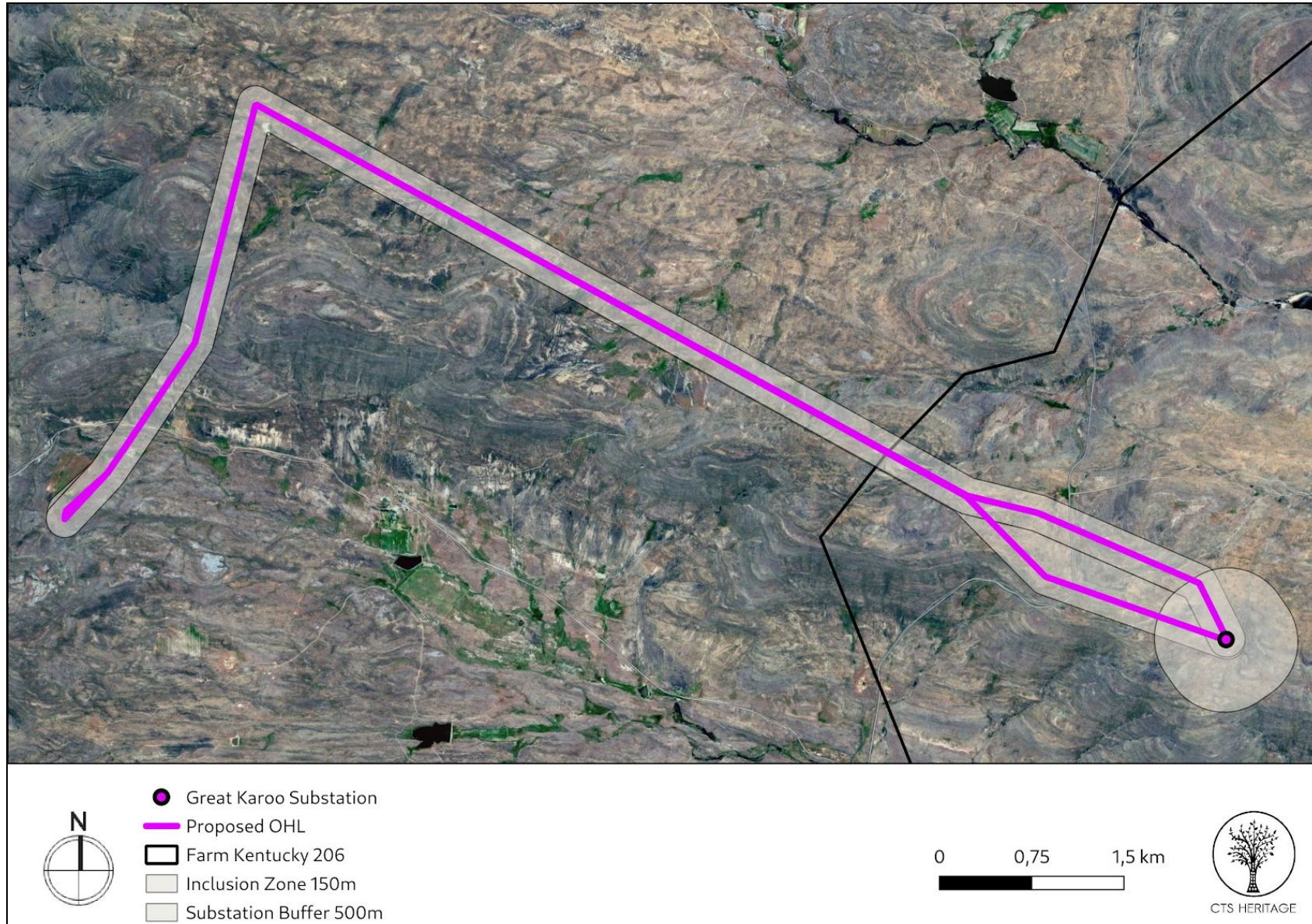
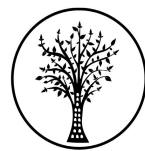


Figure 1d. Overview Map. Satellite image (2020) indicating the indicative development area for the proposed OHL and switching station including the assessment area inclusion zone of 150m either side of the powerline (ie. 300m)



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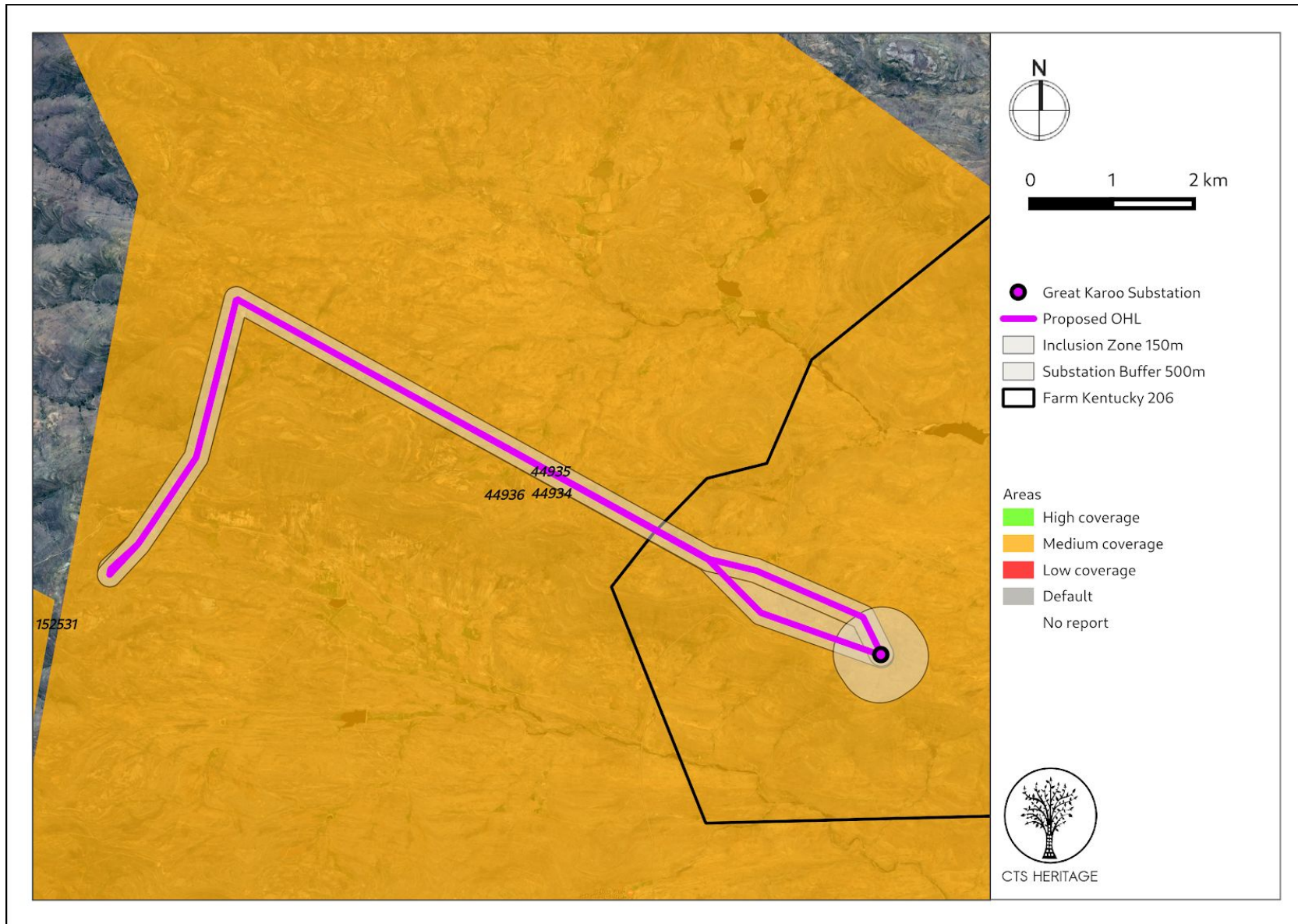


Figure 2. Previous HIAs Map. Previous Heritage Impact Assessments covering the proposed development area with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.

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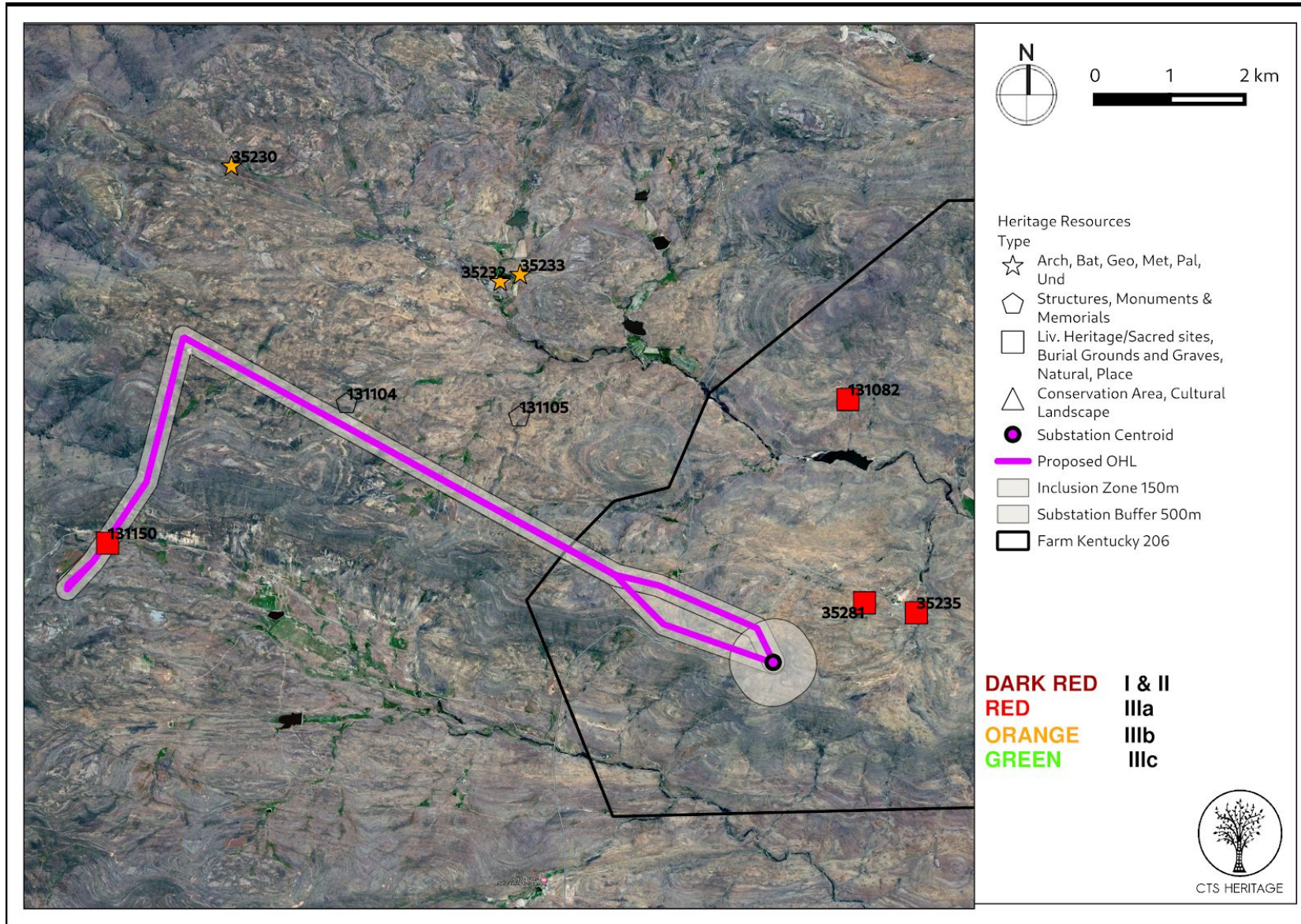


Figure 3. Heritage Resources Map. Heritage Resources previously identified within the study area, with SAHRIS Site IDs indicated. Please See Appendix 4 for full description of heritage resource types.

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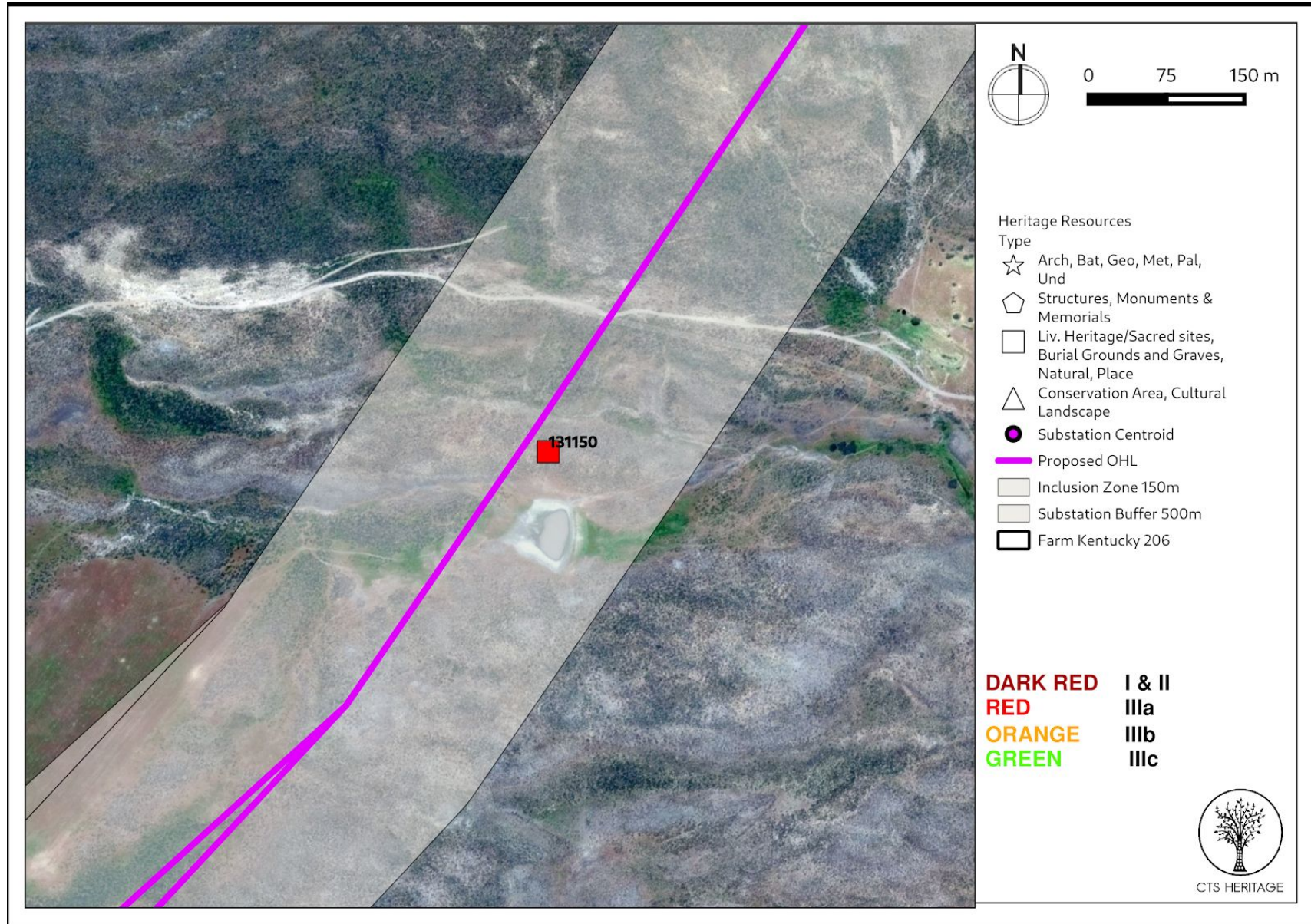


Figure 3a. Heritage Resources Map. More detailed view of the location of the Site 131150 (possible burial) located within the OHL assessment corridor

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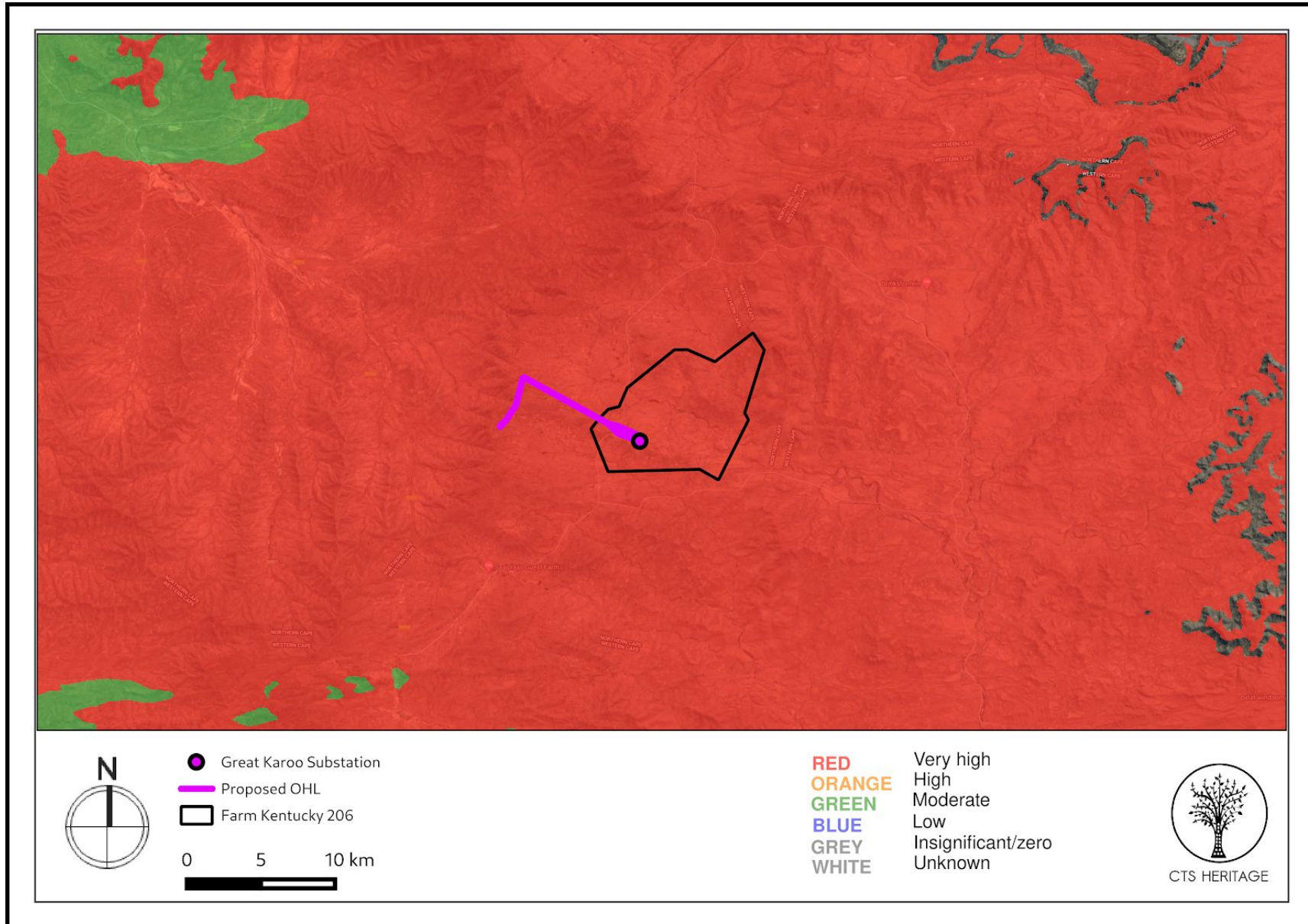


Figure 4a. Palaeosensitivity Map. Indicating fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.

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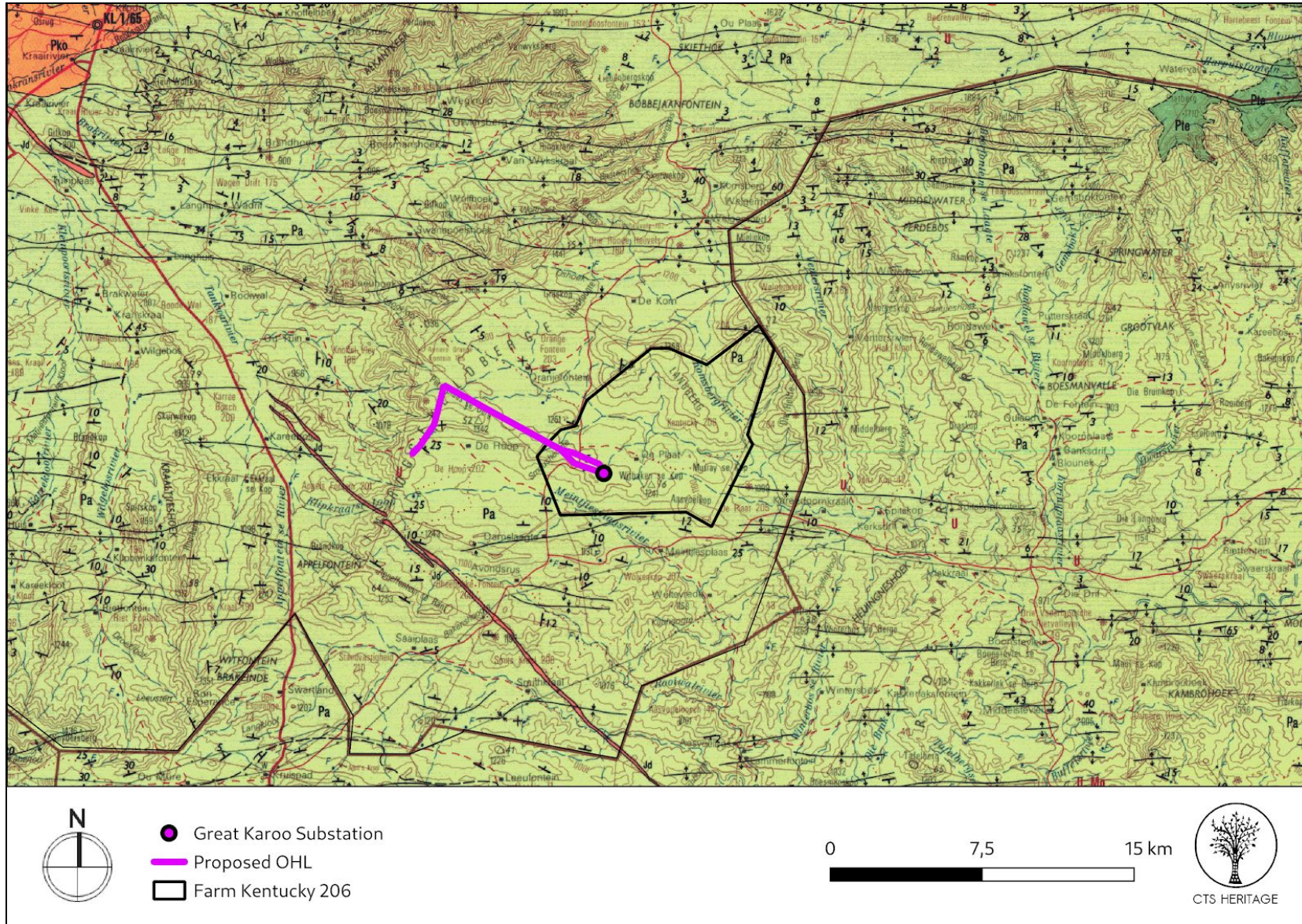
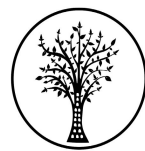


Figure 4b. Geology Map. Extract from the CGS 3220 Sutherland Map indicating that the development area is underlain by sediments of the Karoo Supergroup assigned to the Beaufort group, within the Abrahamskraal Formation of the Adelaide Subgroup (Pa).

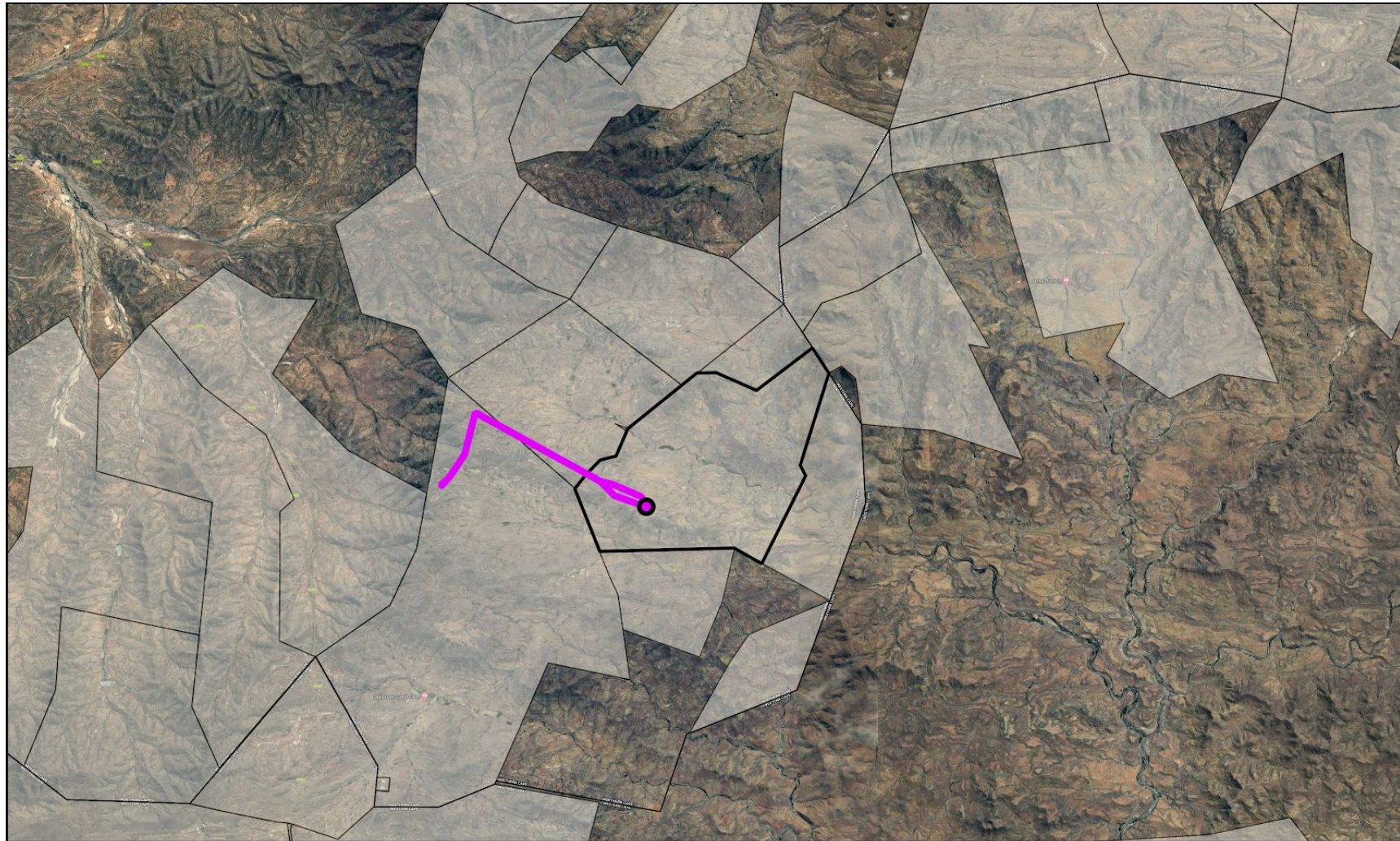
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-  Great Karoo Substation
-  Proposed OHL
-  Farm Kentucky 206
-  Renewable Energy EA

0 7,5 15 km



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Figure 5. Cumulative Impact Map. Indicating other Renewable Energy Facilities that have been granted Environmental Authorisation (EA).

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8. Heritage Assessment

Background

Environmental Authorisation for the proposed development of the Great Karoo Wind Farm to be located on Farm Kentucky 206 and Portion 1 of Farm Wolvenkop 207, Northern Cape was issued on 12 August 2014. Great Karoo Wind Farm (Pty) Ltd, proposes the development of specific grid connection infrastructure required to connect and evacuate the generated power of the authorised Great Karoo Wind Farm (DEA Ref No. 12/12/20/2370/3) to the national electricity grid. Following consultation with Eskom, it has been confirmed that the Great Karoo Wind Farm must connect to the Hidden Valley substation located at the ACED Renewables Hidden Valley (Karusa) Wind Farm, which is currently under construction, to the west of Great Karoo Wind Farm. The project is located ~44km south of Sutherland and ~50km north of Matjiesfontein within the Northern Cape Province. During the EIA process for the approved WEF, as well as the Karusa and Soetwater WEFs immediately west of the Great Karoo WEF, both archaeological and palaeontological assessments were completed for the area proposed for the OHL and switching station. These assessments are reviewed below in order to determine the likely impact of the proposed OHL and switching station on heritage resources.

Archaeology and built environment heritage

Booth (SAHRIS NID 44935) conducted a field assessment of the area proposed for development in 2012. Booth (2012) noted that “No archaeological heritage remains were documented within the areas proposed for the development of the wind turbines.” Furthermore, the proposed OHL and switching station is to be located in an area that has been previously assessed for impacts to archaeological resources by Booth (2012). Booth (2012) identified no heritage resources in this area. However, Booth (2012) did identify a family graveyard (Site ID 35235) and an informal labourers’ graveyard (Site ID 35281) situated near the current farmstead complex (approximately 1.5 to 2km from the authorised Great Karoo WEF Substation), the remnants of a stone-walled kraal to the north of the current farmstead complex (not mapped) and the ruins of a stone walled, large farmstead complex were documented within one of the valleys (Site ID 35230, 35232 and 35233). These identified sites have been mapped in relation to the proposed development (Figure 3, Table 1).

In a recent walkdown of the proposed Soetwater OHL (July 2020), a stone packed feature (possible burial) was identified within the proposed OHL corridor (Figure 3 and 3a). This site is recorded on SAHRIS as Site 131150 and is described in detail by Booth (2020, SAHRIS NID 539589, Case ID 15452); “The stone packed feature cannot be confirmed as being a grave unless systematic excavations are conducted to establish whether the area contains a burial. This method of mitigation is however the least preferred. The stone packed feature may be established as being older than 30 years owing the landowner and farm staff being unaware of its origin or existence, or older than the establishment of colonial settlements and farming activities within the area. However, the more recent-looking packing of the stones may not confirm that the feature is older than 100 years.” Booth (2020) makes the following recommendations regarding this site, which have been endorsed and added to by SAHRA (September 2020):

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- The stone packed feature should be fenced with an entry gate and clearly demarcated prior to the construction activities for the establishment of pylon No. 5. SAHRA's previous recommendations (26 May 2014) stipulate that the fence be placed 5 meters away from the perimeter of the graves and that no development is allowed within 30 meters of the fence line surrounding the graves. However, it is acceptable that the relocation of Pylon No. 5 be shifted 15 m south to allow for a 5 m buffer between the stone packed feature and the fence and therefore allow a 10 m buffer between the fence and tower, taking into consideration the limiting factors mentioned above.
- General fencing materials may be used, mesh fencing approximately 1.2 m in height, and treated wooden droppers as the corner posts, approximately 5 cm in width, or similar alternative materials.
- The environmental control officers (ECOs) must liaise with the archaeologist regarding the fencing materials being used for the erection of the fence, the planned area for the establishment of the fence, during the erection and completion of the fence, as well as during the construction of the tower.
- At this point it is not necessary for the archaeologist to be on-site during the construction of the fence and pylon if the ECO keeps in contact with the archaeologist, as in recommendation 3.
- If concentrations of pre-colonial archaeological heritage material and/or human remains (including graves and burials) are uncovered during construction, all work must cease immediately and be reported to the archaeologist and/or the South African Heritage Resources Authority (SAHRA) (021 462 4502) for Northern Cape findings and Heritage Western Cape (HWC) (021 483 5959) so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the pre-colonial shell middens and associated artefacts may then be conducted to establish the contextual status of the sites and possibly remove the archaeological deposit before development activities continue.

The above recommendations must also apply to the proposed development of the Great Karoo OHL, and as such, are repeated below.

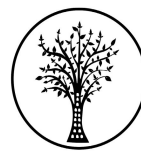
Palaeontology

The area proposed for development of the OHL and switching station is underlain by sediments that have very high palaeontological sensitivity according to the SAHRIS Fossil Sensitivity Map (Figure 4). The geology map of the area (Council of GeoScience Map 3220 Sutherland, Figure 5) indicates that the area is underlain by sediments of the Karoo Supergroup assigned to the Beaufort group, within the Abrahamskraal Formation of the Adelaide Subgroup. This was confirmed by Rossouw (2012, SAHRIS ID 44936) in the Desktop Palaeontological Impact Assessment conducted for the proposed Hidden Valley WEF which includes the area proposed for development. In an assessment for the Soetwater WEF conducted by Almond (2015, SAHRIS NID 353707) which covers the area assessed in this report, it is noted that "that the Lower Beaufort Group bedrocks in the Soetwater Wind Farm study area are generally of **low palaeontological sensitivity** and this also applies to the overlying Late Cenozoic superficial sediments (colluvium, alluvium, calcrete, surface gravels, soils etc)." Almond (2015) goes on to state that "Construction of the proposed Soetwater Wind Farm is unlikely to entail significant impacts on local fossil heritage resources.

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Due to the general great scarcity of fossil remains as well as the extensive superficial sediment cover observed within the study area, the overall impact significance of the construction phase of the proposed Soetwater Wind Farm is assessed as LOW. The operational and decommissioning phases of the wind farm are very unlikely to involve further adverse impacts on local palaeontological heritage.” This same conclusion can be applied to the Great Karoo OHL and switching station as these developments fall within the area assessed by Almond (2015).

Rossouw (2012) recommended that a palaeontological field assessment be conducted of the turbine footings, access roads, offices and substation and underground cable routes prior to the commencement of development activities associated with the Great Karoo WEF. In addition, Rossouw (2012) recommended that palaeontological monitoring take place during the construction phase of the Great Karoo WEF development. In their Final Comment for the Great Karoo WEF dated 25 August 2016, SAHRA recommended that a walk-down of the amended layout is required prior to construction. This must be conducted by a qualified palaeontologist to ensure that no heritage resources are to be impacted by the new locations of the turbines. If heritage resources are identified at or near any proposed infrastructure, an assessment of the significance of the heritage resources and the impact to the identified heritage resource must be completed. A report detailing the results of the survey must be submitted to SAHRA before construction of the Great Karoo WEF commences. A palaeontological walk down conducted for the Soetwater 132kv OHL confirmed the low palaeontological sensitivity of this area.

In a subsequent letter from SAHRA dated 21 October 2016, SAHRA indicated that “There will be no need for further palaeontological field assessment, as the Desktop Study is sufficient. A map of the identified palaeontological resources relative to the layout of the proposed development must be emailed to the case officer and the ECO must monitor all excavations in the Great Karoo WEF.” No such map is yet available and as such, it is recommended that this recommendation also apply to the proposed development of the OHL.

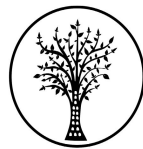
Cumulative Impacts

The proposed OHL development will form part of the infrastructure required for the authorised Great Karoo WEF and is located immediately adjacent to the substation and operations and maintenance facilities associated with the Great Karoo WEF. Furthermore, the proposed OHL and switching station is located within an already approved WEF which is also located within a belt of approved renewable energy facilities (Figure 5). In terms of impacts to heritage resources, it is preferred that this kind of infrastructure development is concentrated in one location and is not sprawled across an otherwise culturally significant landscape. The construction of the proposed OHL and switching station is therefore unlikely to result in unacceptable risk or loss, nor will the proposed OHL development result in a complete change to the sense of place of the area or result in an unacceptable increase in impact.

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Conclusion

Based on the information available from heritage assessments previously conducted in the area proposed for development, the proposed development of the OHL and switching station for the Great Karoo WEF is unlikely to negatively impact significant archaeological, built environment and palaeontological heritage as long as the recommendations contained in Booth (2012) and Rossouw (2012), and repeated below, are implemented. From a heritage perspective, the proposed OHL and switching station can be located anywhere within the 500m area and 300m corridor assessed in this screening assessment.

Recommendations regarding Site 131150:

- The stone packed feature should be fenced with an entry gate and clearly demarcated prior to the construction activities for the establishment of pylon No. 5. SAHRA's previous recommendations (26 May 2014) stipulate that the fence be placed 5 meters away from the perimeter of the graves and that no development is allowed within 30 meters of the fence line surrounding the graves. However, it is acceptable that the relocation of Pylon No. 5 be shifted 15 m south to allow for a 5 m buffer between the stone packed feature and the fence and therefore allow a 10 m buffer between the fence and tower, taking into consideration the limiting factors mentioned above.
- General fencing materials may be used, mesh fencing approximately 1.2 m in height, and treated wooden droppers as the corner posts, approximately 5 cm in width, or similar alternative materials.
- The environmental control officers (ECOs) must liaise with the archaeologist regarding the fencing materials being used for the erection of the fence, the planned area for the establishment of the fence, during the erection and completion of the fence, as well as during the construction of the tower.
- At this point it is not necessary for the archaeologist to be on-site during the construction of the fence and pylon if the ECO keeps in contact with the archaeologist, as in recommendation 3.
- No material may be deposited on the stone feature during the construction i.e. material from excavation for pylon foundation;
- The 10 m buffer from the fence line must be demarcated clearly and in place during the entire construction phase of the pylon in question;
- Care must be taken during the lifting of the pylon and stringing of the line in the vicinity of the stone feature;
- A monitoring report must be submitted to the SAHRIS Case Application once the construction phase of the pylon in question has been concluded. This monitoring report must include before and after photographs of the feature, the fence and the surrounding area;

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General recommendations:

- A walk-down of the proposed OHL and switching station area is required prior to construction. This must be conducted by a qualified archaeologist to ensure that no heritage resources are to be impacted by the development. If heritage resources are identified at or near any proposed infrastructure, an assessment of the significance of the heritage resources and the impact to the identified heritage resource must be completed. A report detailing the results of the survey must be submitted to SAHRA before construction commences. This information can be included in the same report required for the WEF (SAHRIS Case ID 9373) and the BESS (SAHRIS Case ID TBD). This walkthrough does not affect the layout, but is rather intended to inform whether any additional mitigation measures (e.g. sampling) may be required before construction commences.
- If concentrations of archaeological heritage material and human remains are uncovered during construction, all work in proximity to the finds must cease immediately and be reported to the Albany Museum (046 622 2312) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/ excavation can be undertaken.
- Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.
- A map of the identified palaeontological resources relative to the layout of the proposed development must be emailed to the SAHRA case officer and the ECO must monitor all excavations associated with the OHL and switching station.
- A Palaeontological Chance Finds Procedure (attached) must be implemented for all excavation activities

RECOMMENDATION

The heritage resources in the area proposed for development are sufficiently recorded - The surveys undertaken in the area adequately captured the heritage resources. There is one known sites which requires mitigation as indicated. No further heritage work is recommended for the proposed development. From a heritage perspective, the proposed OHL and switching station can be located anywhere within the 500m area and 300m corridor assessed in this screening assessment.

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Table 2: Impact Assessment Table

NATURE: Significant archaeological, built environment and palaeontological heritage resources may be impacted by the construction phase of the proposed development								
		Archaeology without Mitigation		Archaeology with Mitigation		Palaeontology without Mitigation		Palaeontology with Mitigation
MAGNITUDE	M (3)	One significant archaeological resource has been identified in proximity to the proposed OHL and switching station.	L (1)	One significant archaeological resource has been identified in proximity to the proposed OHL and switching station however this site can be avoided	M (6)	The sediments underlying the proposed development have very high palaeontological sensitivity.	L(1)	The sediments underlying the proposed development have very high palaeontological sensitivity.
DURATION	H (5)	Where manifest, the impact will be permanent.	H (5)	Where manifest, the impact will be permanent.	H (5)	Where manifest, the impact will be permanent.	H (5)	Where manifest, the impact will be permanent.
EXTENT	L (1)	Localised within the site boundary	L (1)	Localised within the site boundary	L (1)	Localised within the site boundary.	L (1)	Localised within the site boundary.
PROBABILITY	M (3)	Probability is moderate	L (1)	Probability is low	L (1)	It is improbable that fossils Abrahamskraal formation would be impacted	L (1)	It is improbable that fossils Abrahamskraal formation would be impacted
SIGNIFICANCE	M	$(3+5+1) \times 3 = 27$	L	$(1+5+1) \times 1 = 7$	L	$(6+5+1) \times 1 = 12$	L	$(1+5+1) \times 1 = 7$
STATUS		Neutral		Neutral		Neutral		Neutral
REVERSIBILITY	L	Any impacts to heritage resources that do occur are irreversible	L	Any impacts to heritage resources that do occur are irreversible	L	Any impacts to heritage resources that do occur are irreversible	L	Any impacts to heritage resources that do occur are irreversible
IRREPLACEABLE LOSS OF RESOURCES?	L	Possible	L	Possible	L	Possible	L	Possible
CAN IMPACTS BE MITIGATED		Yes		Yes		Yes		Yes

MITIGATION:

- The stone packed feature should be fenced with an entry gate and clearly demarcated prior to the construction activities for the establishment of pylon No. 5. SAHRA's previous recommendations (26 May 2014) stipulate that the fence be placed 5 meters away from the perimeter of the graves and that no development is allowed within 30 meters of the fence line surrounding the graves. However, it is acceptable that the relocation of Pylon No. 5 be shifted 15 m south to allow for a 5 m buffer between the stone packed feature and the fence and therefore allow a 10 m buffer between the fence and tower, taking into consideration the limiting factors mentioned above.
- General fencing materials may be used, mesh fencing approximately 1.2 m in height, and treated wooden droppers as the corner posts, approximately 5 cm in width, or similar alternative materials.
- The environmental control officers (ECOs) must liaise with the archaeologist regarding the fencing materials being used for the erection of the fence, the planned area for the establishment of the fence, during the erection and completion of the fence, as well as during the construction of the tower.
- At this point it is not necessary for the archaeologist to be on-site during the construction of the fence and pylon if the ECO keeps in contact with the archaeologist, as in recommendation 3.
- No material may be deposited on the stone feature during the construction i.e. material from excavation for pylon foundation;
- The 10 m buffer from the fence line must be demarcated clearly and in place during the entire construction phase of the pylon in question;
- Care must be taken during the lifting of the pylon and stringing of the line in the vicinity of the stone feature;
- A monitoring report must be submitted to the SAHRIS Case Application once the construction phase of the pylon in question has been concluded. This monitoring report must include before and after photographs of the feature, the fence and the surrounding area;



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- A walk-down of the proposed OHL and switching station area is required prior to construction. This must be conducted by a qualified archaeologist to ensure that no heritage resources are to be impacted by the development. If heritage resources are identified at or near any proposed infrastructure, an assessment of the significance of the heritage resources and the impact to the identified heritage resource must be completed. A report detailing the results of the survey must be submitted to SAHRA before construction commences.
- Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.
- A map of the identified palaeontological resources relative to the layout of the proposed development must be emailed to the SAHRA case officer and the ECO must monitor all excavations associated with the OHL and switching station.

RESIDUAL RISK:

- There will not be residual impacts as a walkthrough would have been conducted prior to site establishment. However, if any impacts occur they are irreversible so even the slightest disturbance will be residual (assuming all mitigation was applied).
- If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/ excavation can be undertaken.
- A Palaeontological Chance Finds Procedure (attached) must be implemented for all excavation activities.

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APPENDIX 1

List of heritage resources within proximity to the development area

Site ID	Site no	Full Site Name	Description	Site Type	Grading
35230	HDV005	Hidden Valley 05	Dry stone packed walling dwelling was documented next to the farm gravel road leading to the current wind mast. Most of structure is still intact although some areas of the wall have already collapsed and is currently overgrown by bushes. The roof or cover that may have been attached is not evident. A few fragments of broken glass and ceramic sherds were scattered south of the feature. The dwelling may have been occupied by a shepard/s as it is situated nearby a reservoir water point. It is highly likely that the farm gravel road may be the main access road during the construction and development activities for the wind energy facility and, therefore may impact negatively on the structure.	Stone walling	Grade IIIb
35232	HDV007	Hidden Valley 07	The ruin of a clay packed stone walling cottage and a dry packed stone walling kraal are situated within the vicinity of the current farmstead on remainder of Portion 1 of the Farm Orange Fontein 203 (CottageRuins). The ruin of the cottage is situated at the western extent of the farmstead area. Most of the stone walls of the cottage have collapsed and only a section of the middle interior wall remains standing. Clay/mud was used as a binder for the stone walling. There may have been another stone walling structure next to the cottage as either the foundation of the building is still visible and stretches to the edge of the farm gravel road or it may be the collapsed debris from the cottage.	Stone walling	Grade IIIb
35233	HDV008	Hidden Valley 08	A dry packed stone walling kraal is situated about 200m north-east of the ruin of the cottage, near to the current farm labourers' cottages. The kraal has been built on the side of a low hill and is approximately 50m x 40m in extent. It is currently unused.	Stone walling	Grade IIIb
35281	HDV009	Hidden Valley 009	A fenced formal family graveyard with two stone packed informal burials located 300m from the main farmhouse	Burial Grounds & Graves	Grade IIIa
35235	HDV010	Hidden Valley 010	Informal farm labourers graveyard	Burial Grounds & Graves	Grade IIIa
131082	KDB108	Kudusberg	65cmx50cm metal enclosed feature, likely grave	Burial Grounds & Graves	Grade IIIa
131104	KDB129	Kudusberg	Large rectangular kraal	Structures	Grade IV
131105	KDB130	Kudusberg	Large rectangular kraal, northern end	Structures	Grade IV
131150	DHP001	De Hoop 001	The feature is a single-layer stone packed rectangular feature resembling a possible grave (Figures 15-17). The feature is located within 45 m of a watercourse / stream located to the north. A foot survey, approximately 200 m – 300 m in diameter of the surrounding area was conducted to possibly identify any similar stone packed features within the area.	Burial Grounds & Graves	Grade IIIa

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APPENDIX 2

Reference List with relevant AIAs and PIAs

Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title
130621	Heritage Scoping	Jaco van der Walt	28/06/2013	Achaeological Scoping Report for the Proposed Gunstfontein Renewable Energy Project: Wind and Solar Energy Facilities and The Associated Grid Connection Infrastructure, Northern Cape
130623	PIA Desktop	Barry Millsteed	10/07/2013	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	HIA Phase 1	Timothy Hart, Lita Webley	20/12/2013	Heritage Impact Assessment Report for the Phase 1 Roggeveld Wind Farm
44934	AIA Desktop	Celeste Booth	01/08/2011	An archaeological desktop study for the propsoed establishment of the Hidden Valley wind energy facility and associated infrastructure ona a site south of Sutherland, Northern Cape Province
53187	HIA Phase 1	Timothy Hart, Lita Webley	01/03/2011	HERITAGE IMPACT ASSESSMENT PROPOSED WIND ENERGY FACILITY
44935	AIA Phase 1	Celeste Booth	01/02/2012	A Phase 1 AIA for the proposed Hlidden Valley Wind Energy Facility, near Sutherland, Northern cape Province
183350	HIA Phase 1	Natalie Kendrick	27/10/2014	Heritage Impact Assessment for the Karreebosch Wind Farm (Phase 2 Roggevelt Wind Farm)
44936	PIA Desktop	Lloyd Rossouw	01/03/2012	Palaeontological desktop assessment of the proposed Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province
539589	Site Inspection Report	Celeste Booth	31/08/2020	REPORT ON THE SITE VISIT AND ASSESSMENT OF A STONE PACKED FEATURE IDENTIFIED DURING THE CONSTRUCTION OF THE POWERLINE FOR THE SOETWATER WIND ENERGY FACILITY, NEAR SUTHERLAND, KAROO HOOGLAND MUNICIPALITY, NORTHERN CAPE PROVINCE
353707	Palaeontological Specialist Report	John Almond	17/12/2015	Palaeontological Heritage Assessment: Combined Desktop & Field-Based Study: Authorised Soetwater Wind Farm Near Sutherland, Northern Cape Province

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APPENDIX 3 - Keys/Guides

Key/Guide to Acronyms

AIA	Archaeological Impact Assessment
DARD	Department of Agriculture and Rural Development (KwaZulu-Natal)
DEFF	Department of Environment, Forestry and Fisheries (National)
DEADP	Department of Environmental Affairs and Development Planning (Western Cape)
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism (Eastern Cape)
DEDECT	Department of Economic Development, Environment, Conservation and Tourism (North West)
DEDT	Department of Economic Development and Tourism (Mpumalanga)
DEDTEA	Department of economic Development, Tourism and Environmental Affairs (Free State)
DENC	Department of Environment and Nature Conservation (Northern Cape)
DMR	Department of Mineral Resources (National)
GDARD	Gauteng Department of Agriculture and Rural Development (Gauteng)
HIA	Heritage Impact Assessment
LEDET	Department of Economic Development, Environment and Tourism (Limpopo)
MPRDA	Mineral and Petroleum Resources Development Act, no 28 of 2002
NEMA	National Environmental Management Act, no 107 of 1998
NHRA	National Heritage Resources Act, no 25 of 1999
PIA	Palaeontological Impact Assessment
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
VIA	Visual Impact Assessment

Full guide to Palaeosensitivity Map legend

	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/PURPLE:	LOW - no palaeontological studies are required however a protocol for chance finds is required
	GREY:	INSIGNIFICANT/ZERO - no palaeontological studies are required
	WHITE/CLEAR:	UNKNOWN - these areas will require a minimum of a desktop study.

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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.

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 PALAEOLOGICAL 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

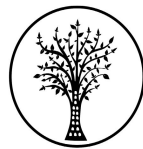
DETERMINATION OF THE COVERAGE RATING ASCRIBED TO A REPORT POLYGON

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.

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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

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- 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.

APPENDIX 5 -Summary of Specialist Expertise

Jenna Lavin, an archaeologist with an MSc in Archaeology and Palaeoenvironments, and currently completing an MPhil in Conservation Management, heads up the heritage division of the organisation, and has a wealth of experience in the heritage management sector. Jenna's previous position as the Assistant Director for Policy, Research and Planning at Heritage Western Cape has provided her with an in-depth understanding of national and international heritage legislation. Her 8 years of experience at various heritage authorities in South Africa means that she has dealt extensively with permitting, policy formulation, compliance and heritage management at national and provincial level and has also been heavily involved in rolling out training on SAHRIS to the Provincial Heritage Resources Authorities and local authorities.

Jenna is on the Executive Committee of the Association of Professional Heritage Practitioners (APHP), and is also an active member of the International Committee on Monuments and Sites (ICOMOS) as well as the International Committee on Archaeological Heritage Management (ICAHM). In addition, Jenna has been a member of the Association of Southern African Professional Archaeologists (ASAPA) since 2009. Recently, Jenna has been responsible for conducting training in how to write Wikipedia articles for the Africa Centre's WikiAfrica project.

Since 2016, Jenna has drafted over 50 Heritage Impact Assessments throughout South Africa.

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