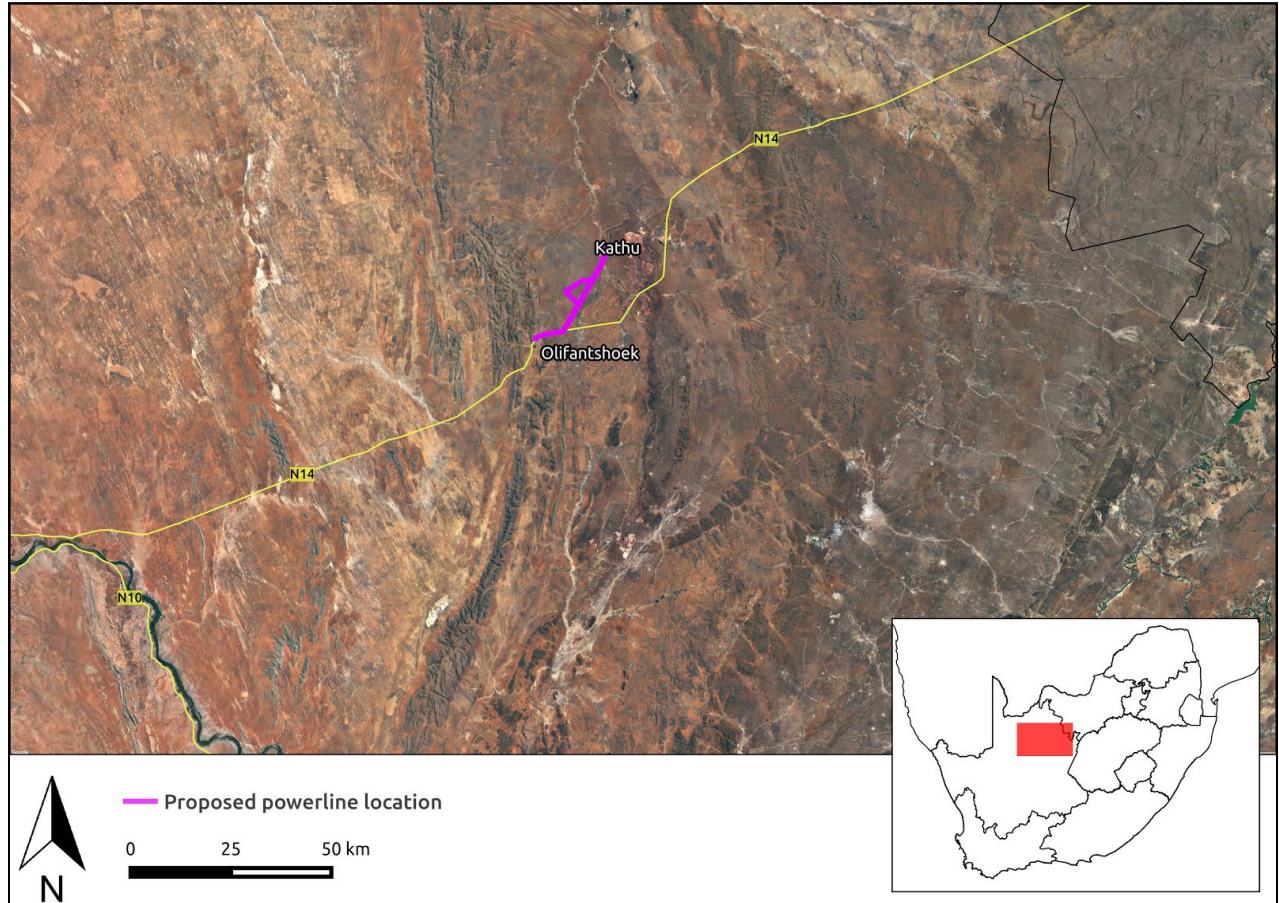


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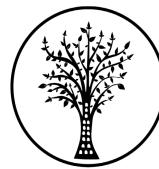
HERITAGE SCREENER

CTS Reference Number:	CTS16_048	 <p>Figure 1a. Satellite Map indicating the location of the proposed development in the Northern Cape Province.</p>
SAHRIS Case ID	11677	
Client:	Savannah Environmental	
Date:	14 September 2017	
Title:	Update to Eskom Power line, Olifantshoek, Northern Cape	
Recommendation by CTS Heritage Specialists: (Type 1)	<p>RECOMMENDATION: The heritage resources in the area proposed for development are sufficiently recorded - The disturbed nature of the development area suggests that heritage resources are unlikely to be impacted by this development. A HIA has already been undertaken in this specific region for a different power line. As such, it is recommended that</p> <ul style="list-style-type: none">- No further heritage studies are required- If any heritage resources are discovered during the construction phase of the proposed development, the SAHRA APM unit should be contacted immediately	

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1. Proposed Development Summary

Eskom is proposing to establish a new 132kv power line which will be used to increase customers Notified Maximum Demand (NMD) from 2.5MVA to 10 MVA as a provision for future developments within the Olifantshoek region. This project is referred to as the Olifantshoek Substation and Power Line. This report deals with the proposed powerline alternatives only (A, B and C), which will comprise of a new overhead 132 kV power line approximately 31 km long to connect directly to the Emil switching station via the new substation. The majority of the new power line route will follow the existing Ferrum/Nieuwehoop 400kV and Ferrum/Lewensaar 132kV power lines. The corridor of the new power line will be 300 m with a servitude of 32 m wide.

- Alternative A
- Alternative B
- Alternative C

2. Application References

Name of relevant heritage authority(s)	South African Heritage Resources Agency (SAHRA)
Name of decision making authority(s)	Department of Environmental Affairs (DEA)

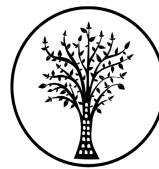
3. Property Information

Latitude / Longitude	Northernmost point: 22.9216369691 E ; -27.7363261288 S Southernmost point: 22.7397687787 E ; -27.9374509512 S
Erf number / Farm number	Numerous (see Map 1b)
Local Municipality	Ward 3, 4 and 5 of the Gamagara Local Municipality
District Municipality	John Taolo Gaetsewe District Municipality
Previous Magisterial District	Postmasburg
Province	Northern Cape
Current Use	Rural, servitude
Current Zoning	NA
Total Extent	Between 31-35 km

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4. Nature of the Proposed Development

Surface area to be affected/destroyed	Linear activities (including power line, access roads and all alternatives): 31km - 35km Servitude: >32m Corridor: 300m
Depth of excavation (m)	None anticipated
Height of development (m)	23-28m
Expected years of operation before decommission	NA

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 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):	

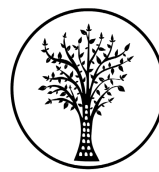
6. Additional Infrastructure Required for this Development

- Bird-friendly monopile tower (23-28m high)
- Access roads (44 x 9m, with beam edge 35m wide)
- Voltage power lines (132kv)
- Single circuit

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

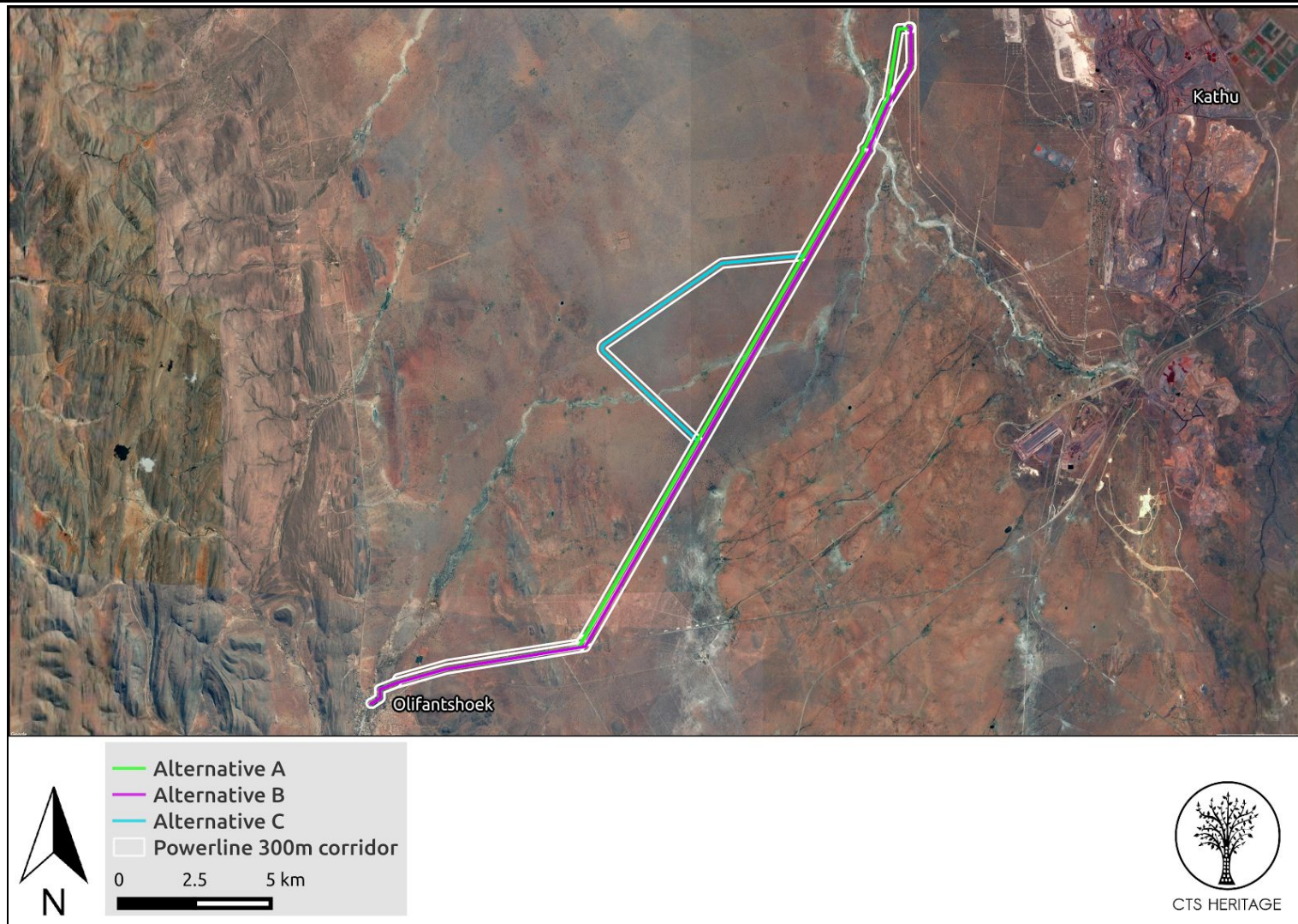
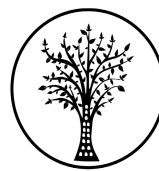


Figure 1b. Overview Map. Satellite image indicating all proposed powerline alternatives at close range, in relation to the towns of Olifantshoek and Kathu, surrounded by a 300m corridor.

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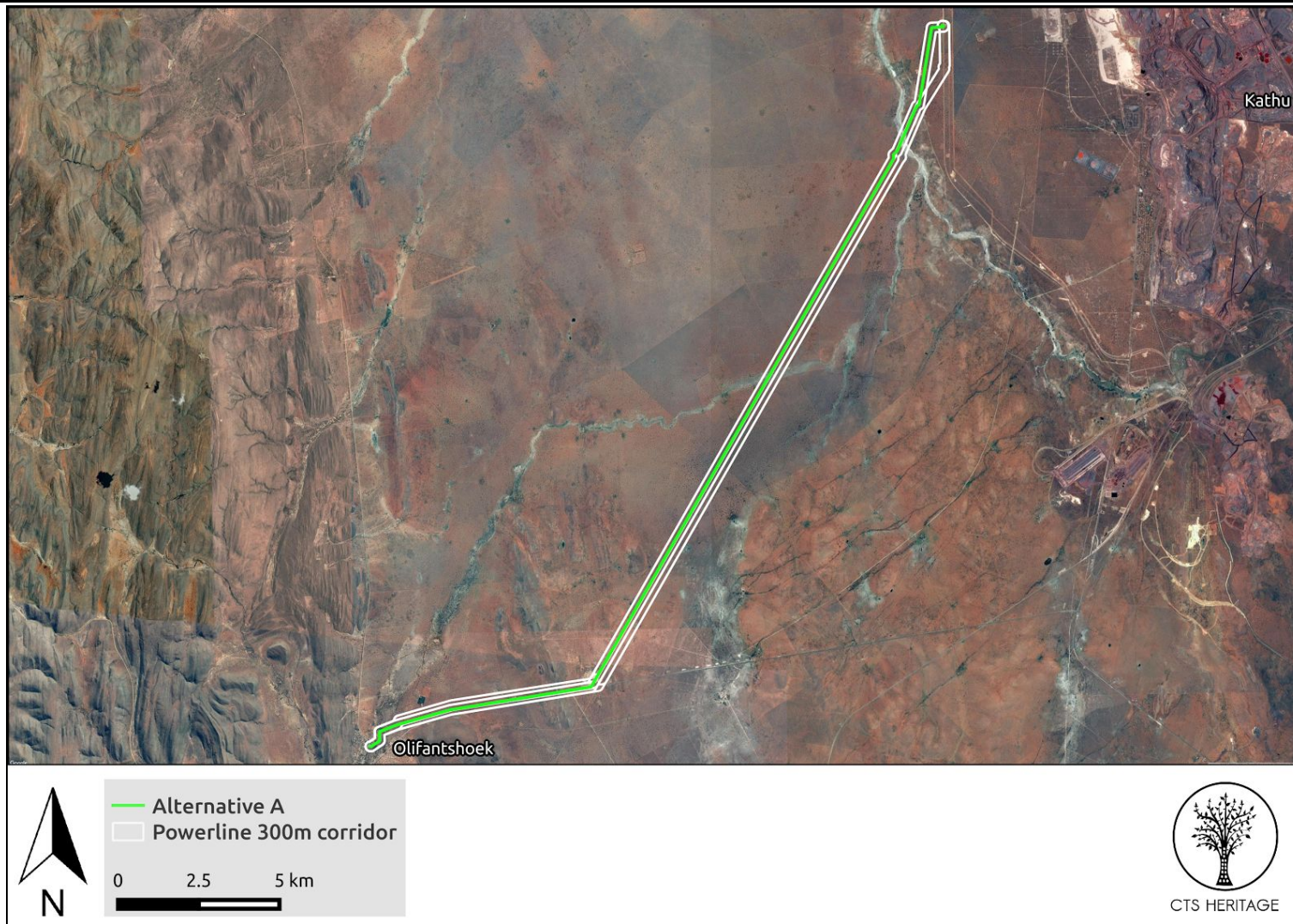
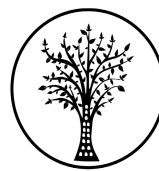


Figure 1c. Overview Map. Satellite image indicating Alternative A powerline at close range, in relation to the towns of Olifantshoek and Kathu, surrounded by a 300m corridor.

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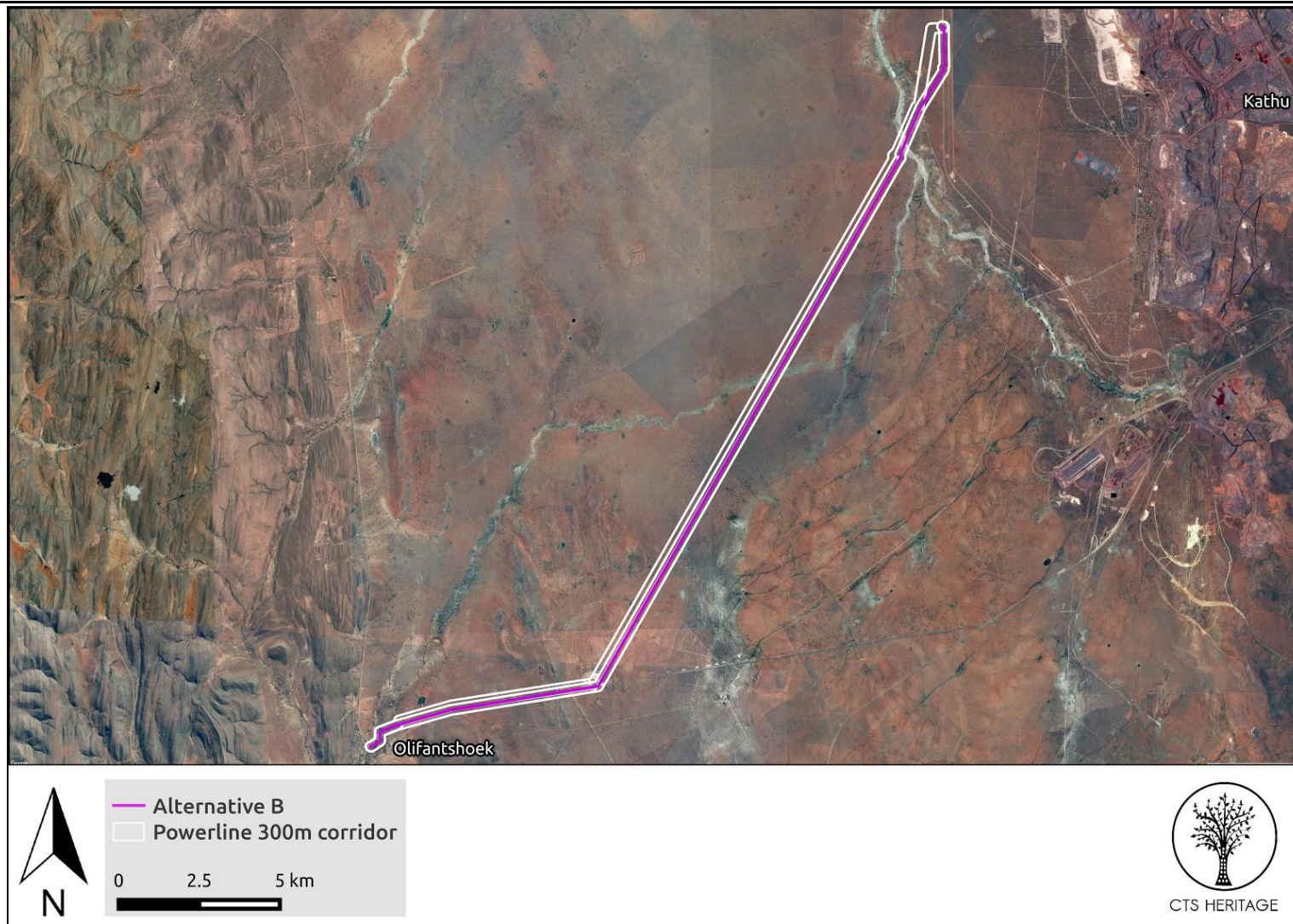
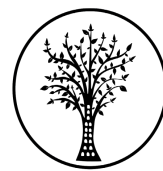


Figure 1d. Overview Map. Satellite image indicating Alternative B powerline at close range, in relation to the towns of Olifantshoek and Kathu, surrounded by a 300m corridor.

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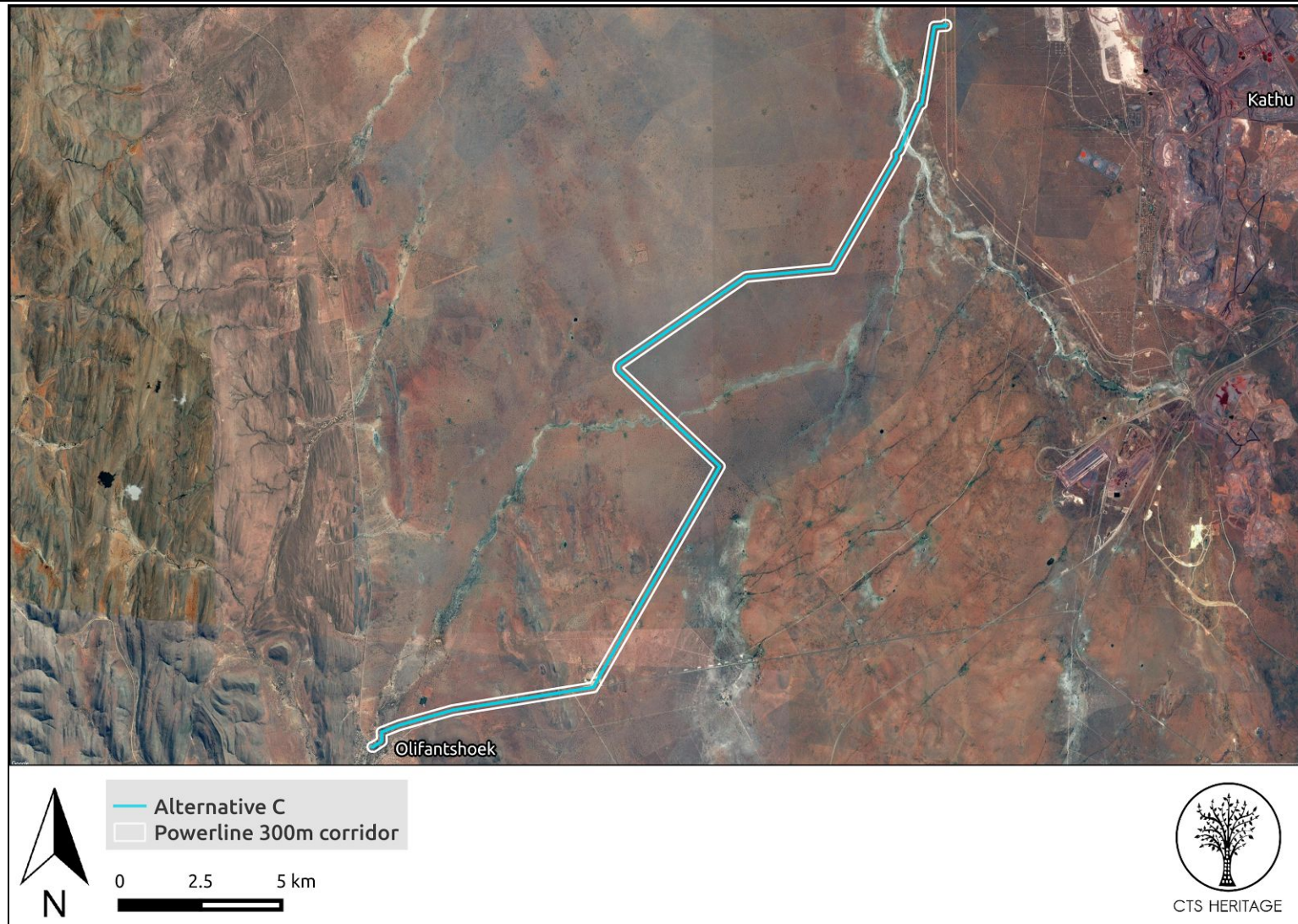
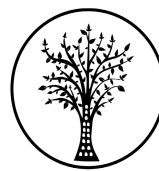


Figure 1e. Overview Map. Satellite image indicating Alternative C powerline at close range, in relation to the towns of Olifantshoek and Kathu, surrounded by a 300m corridor.

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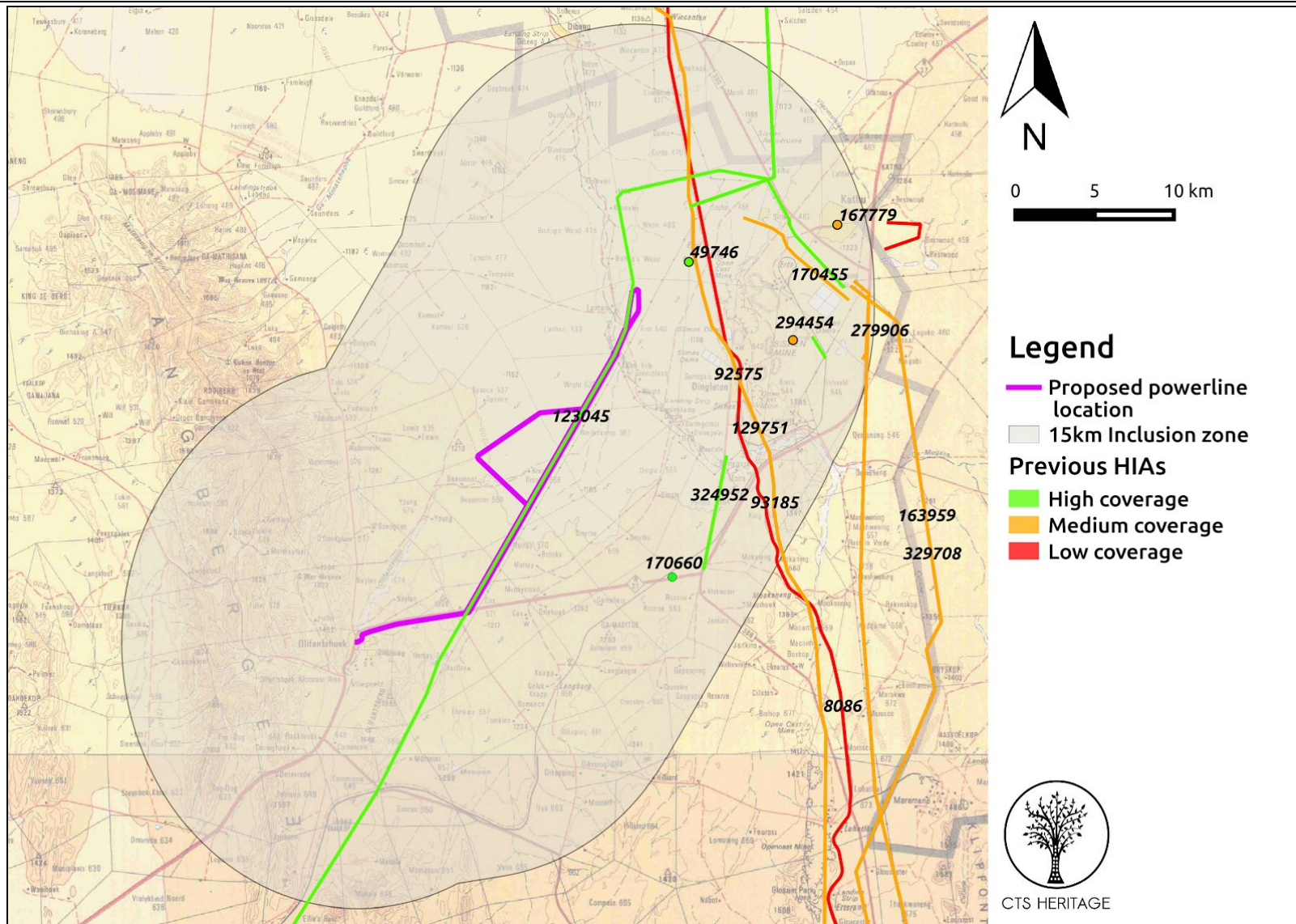
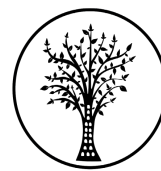


Figure 2a. Heritage Reports Map. Previous Heritage Impact Assessments (PIAs excluded) conducted within 15km of the proposed powerline (all alternatives visible), with SAHRIS NIDs indicated (only points and line data showing).

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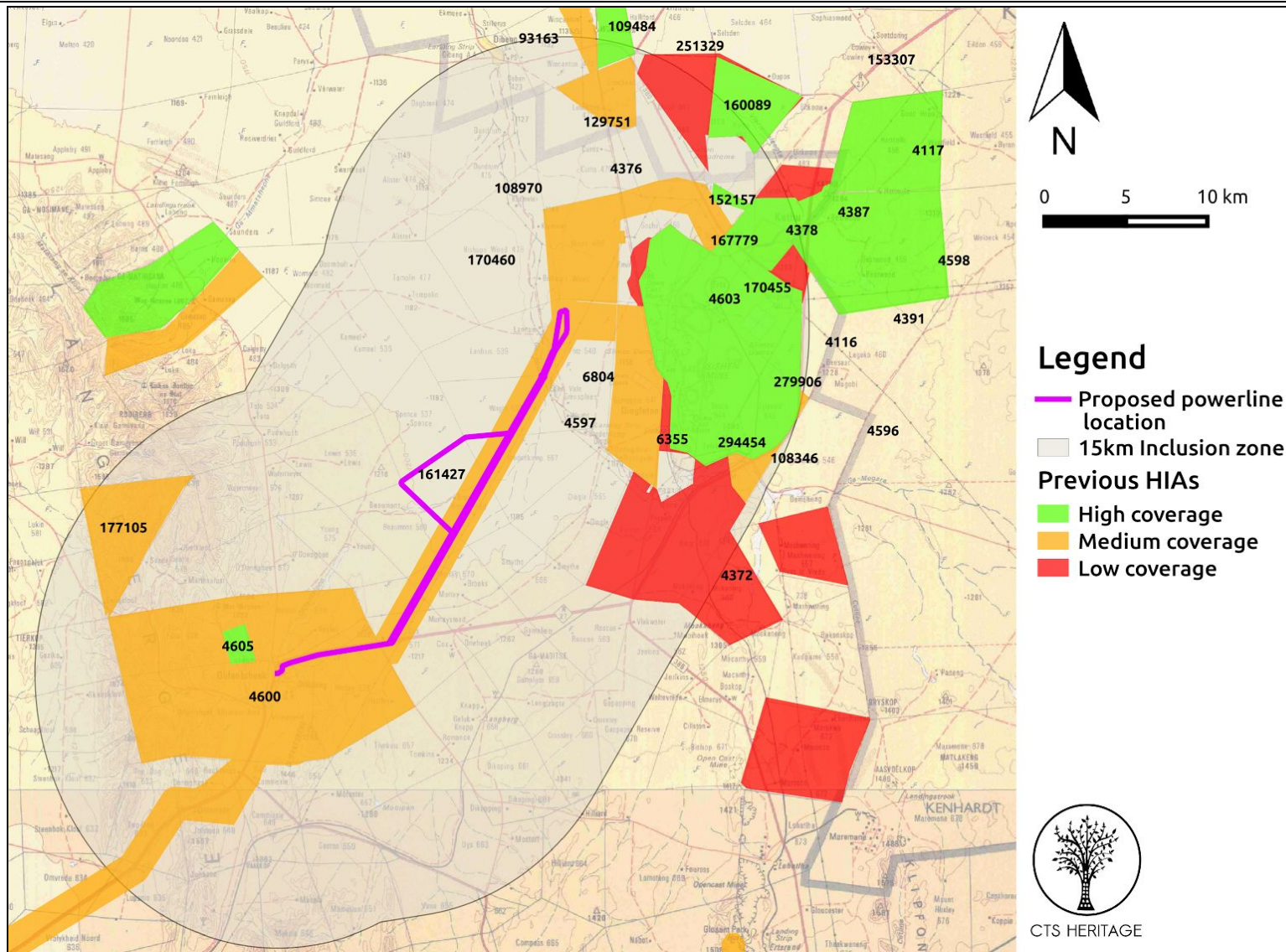
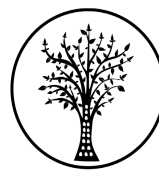


Figure 2b. Heritage Reports Map. Previous Heritage Impact Assessments (PIAs excluded) conducted within 15km of the proposed powerline (all alternatives visible), with SAHRIS NIDs indicated (only polygon data showing).

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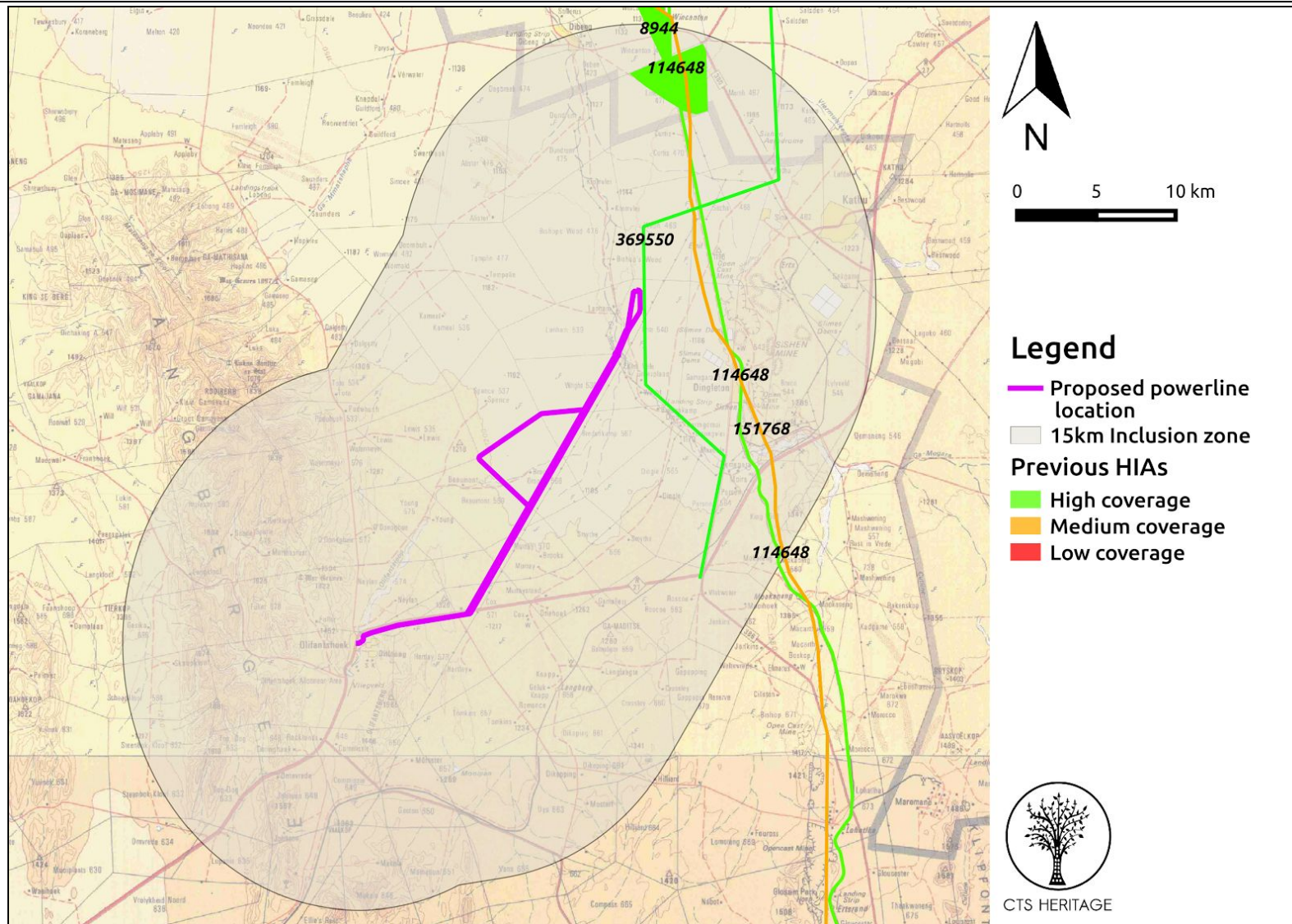
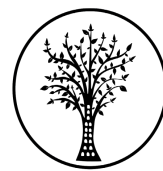


Figure 2c. Heritage Reports Map. Previous Palaeontological Impact Assessments conducted within 15km of the proposed powerline (all alternatives visible), with SAHRIS NIDs indicated (all data showing).

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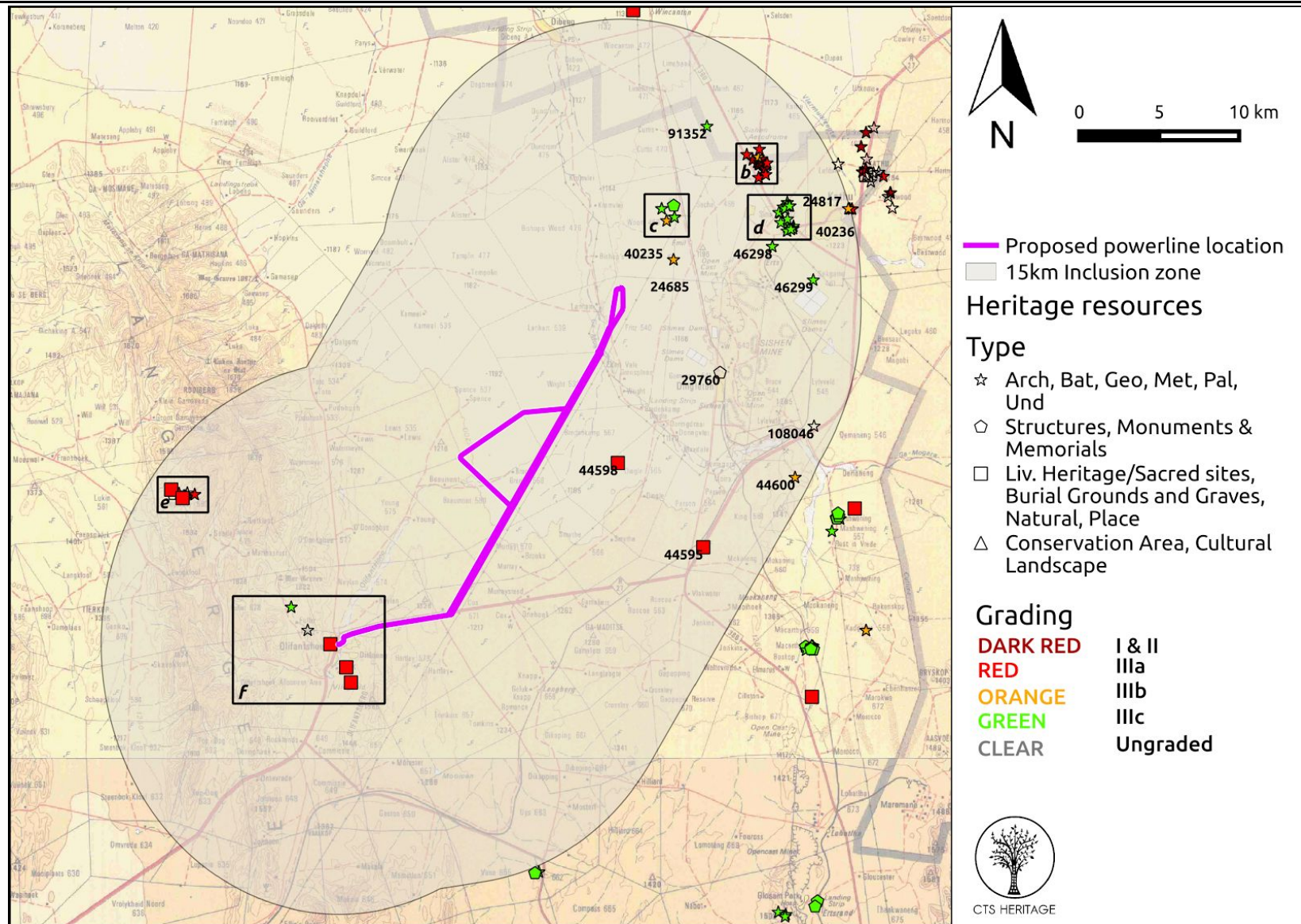
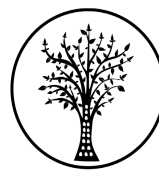


Figure 3a. Heritage Resources Map, indicating heritage resources located within 15km of the proposed development, with SAHRIS Site IDs indicated. See Figures 3b-f for insets.

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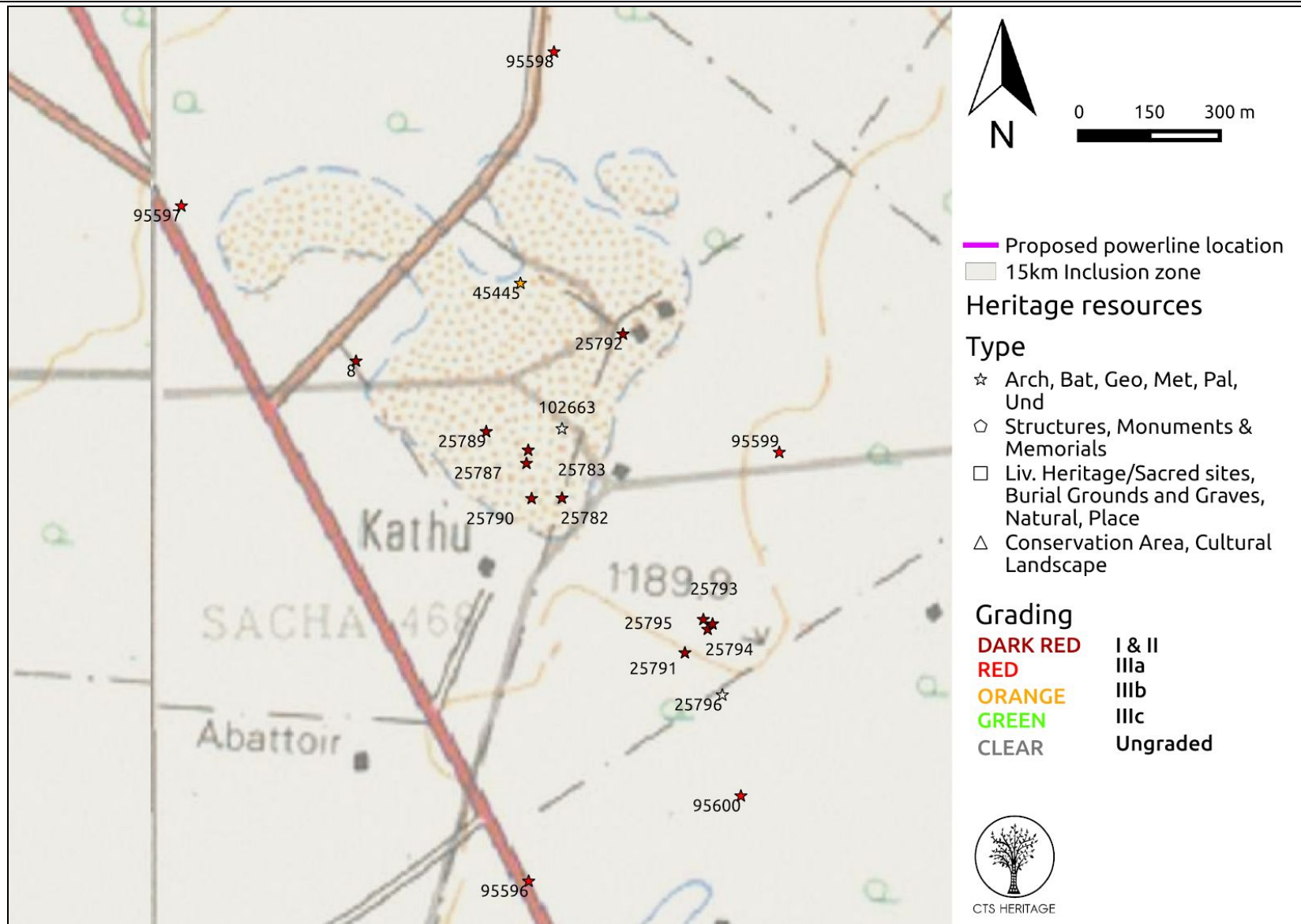
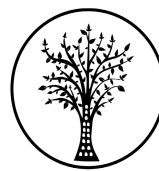


Figure 3b. Inset Map.

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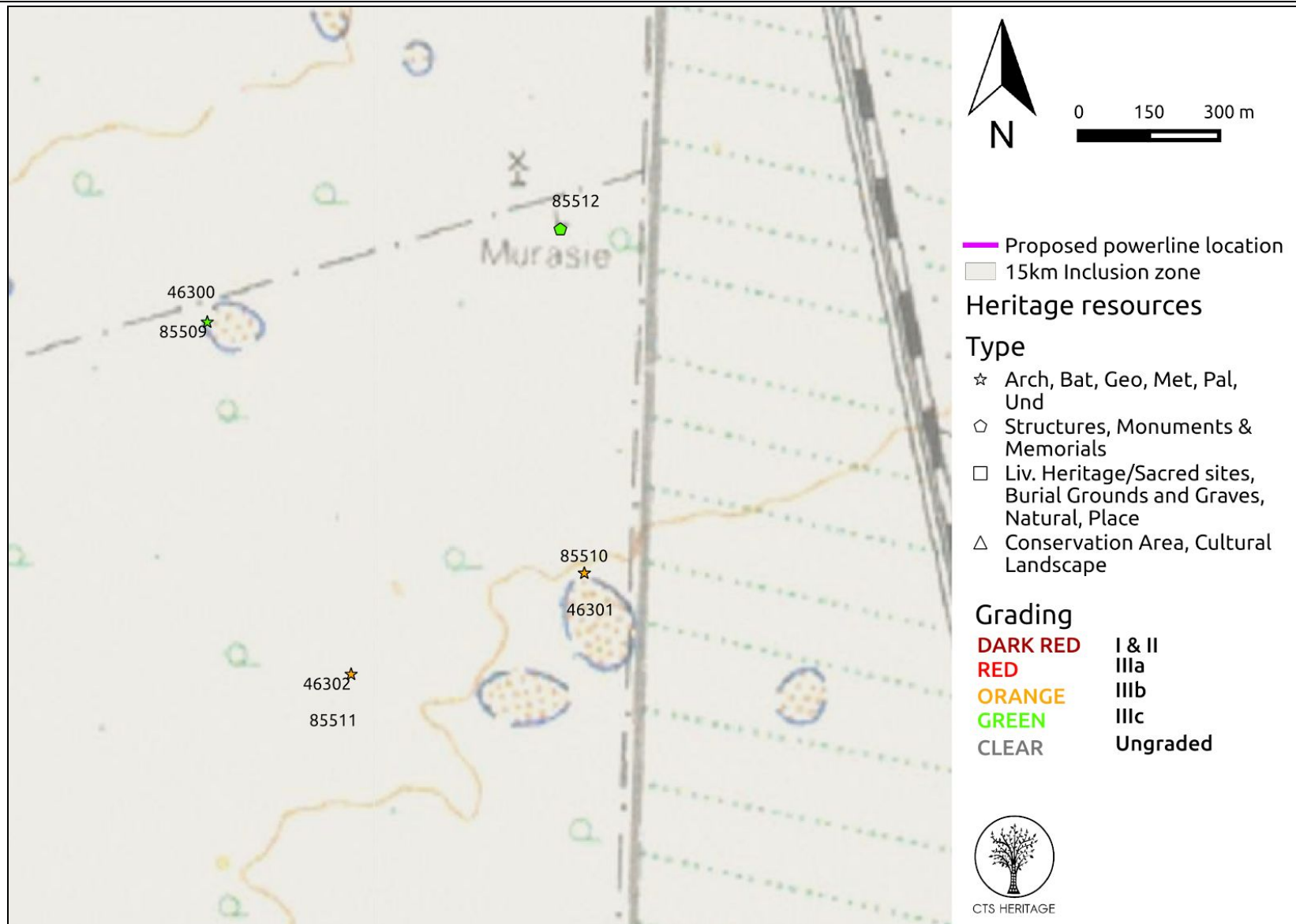
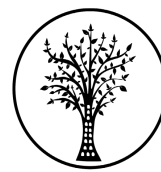


Figure 3c. Inset Map.

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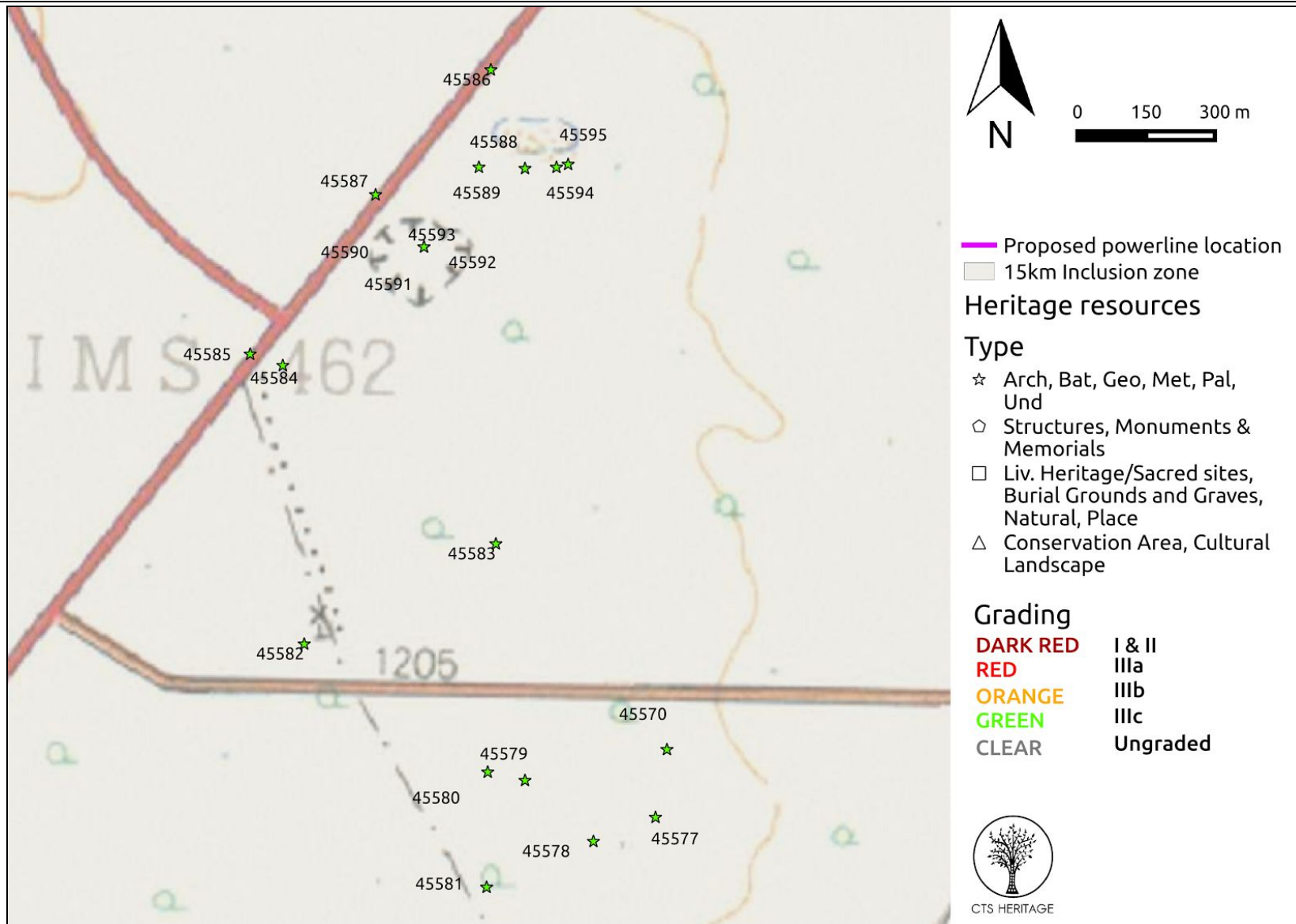
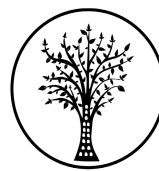


Figure 3d. Inset Map.

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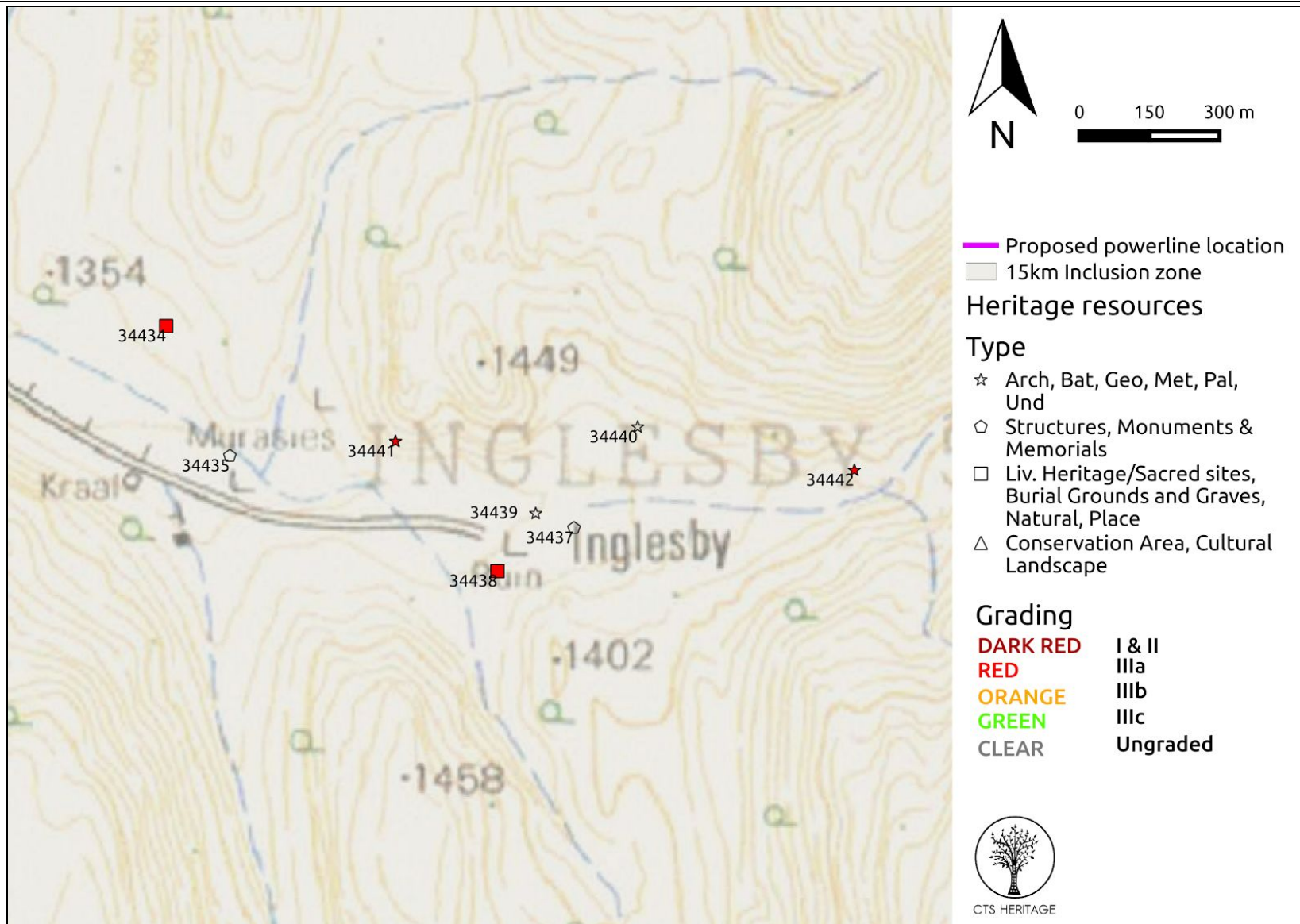
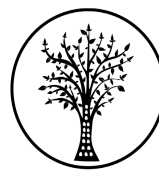


Figure 3e. Inset Map.

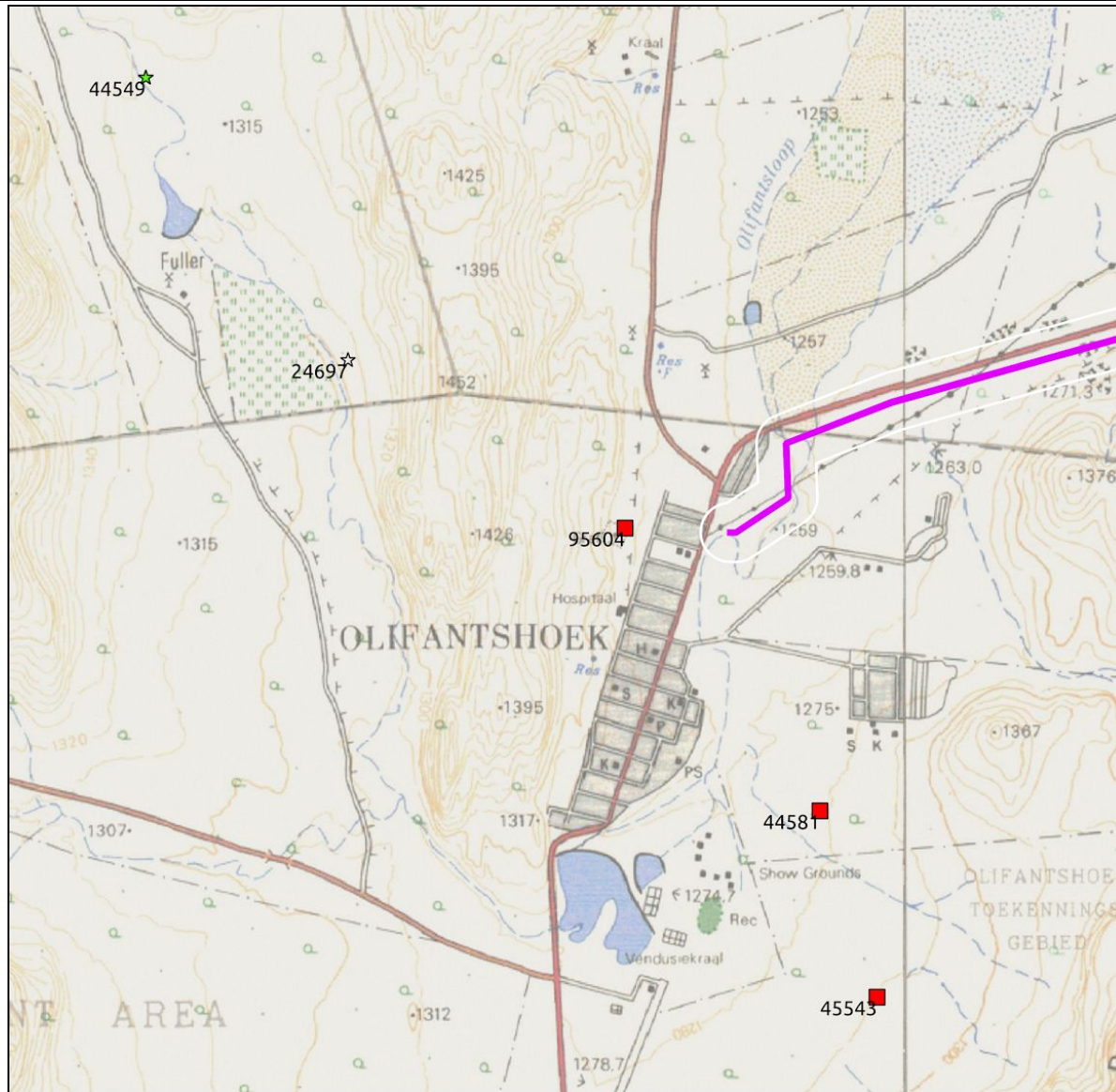
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0 0.5 1 km

Proposed powerline location

15km Inclusion zone

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 |



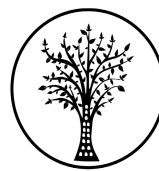
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Figure 3f. Inset Map.

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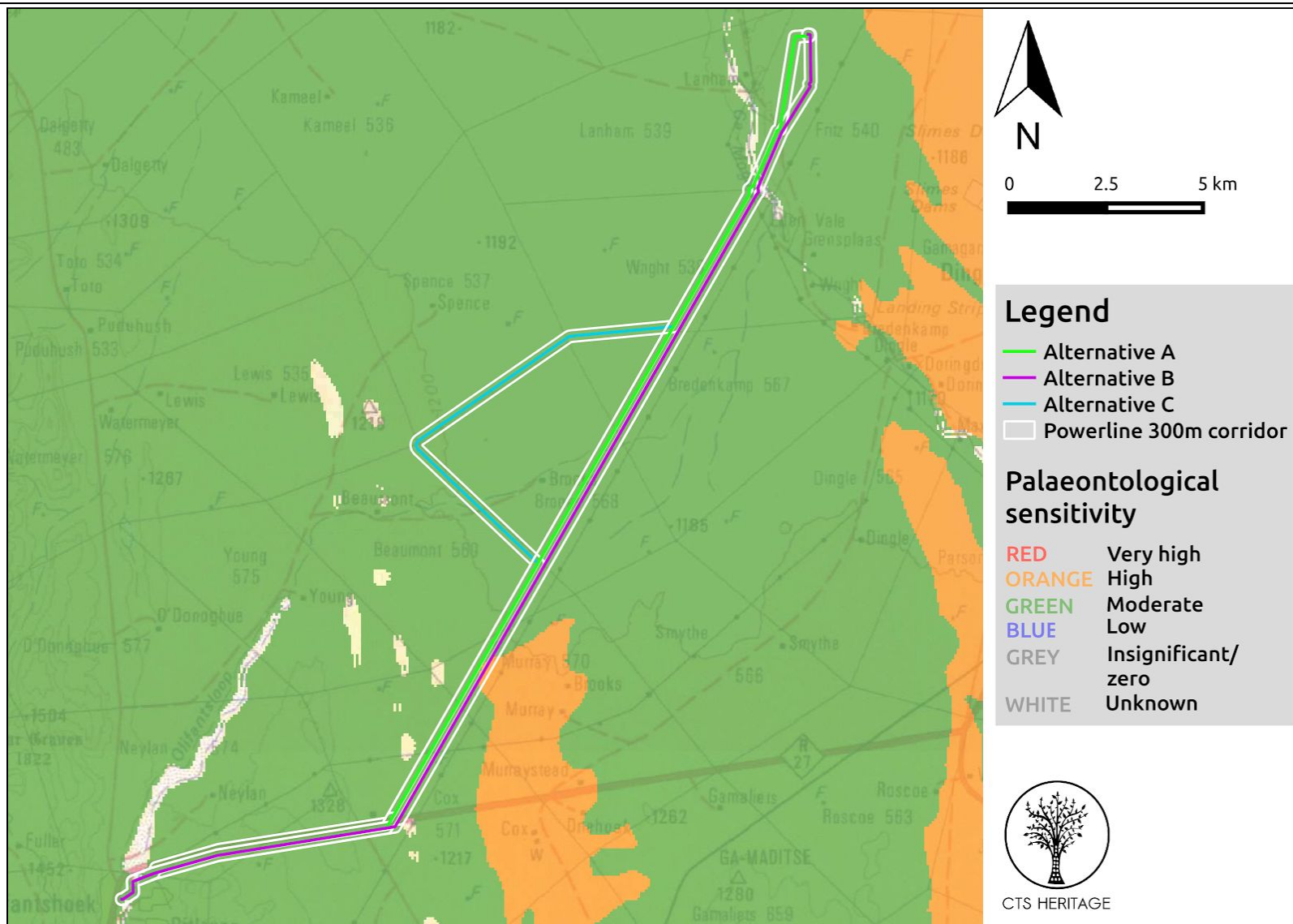
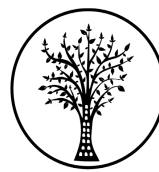


Figure 4a. Palaeo-Map. Palaeosensitivity of the study area, indicating the underlying moderate (green), high (orange) and unknown (white) palaeontologically sensitive areas. See Appendix 3 for full guide to the legend.

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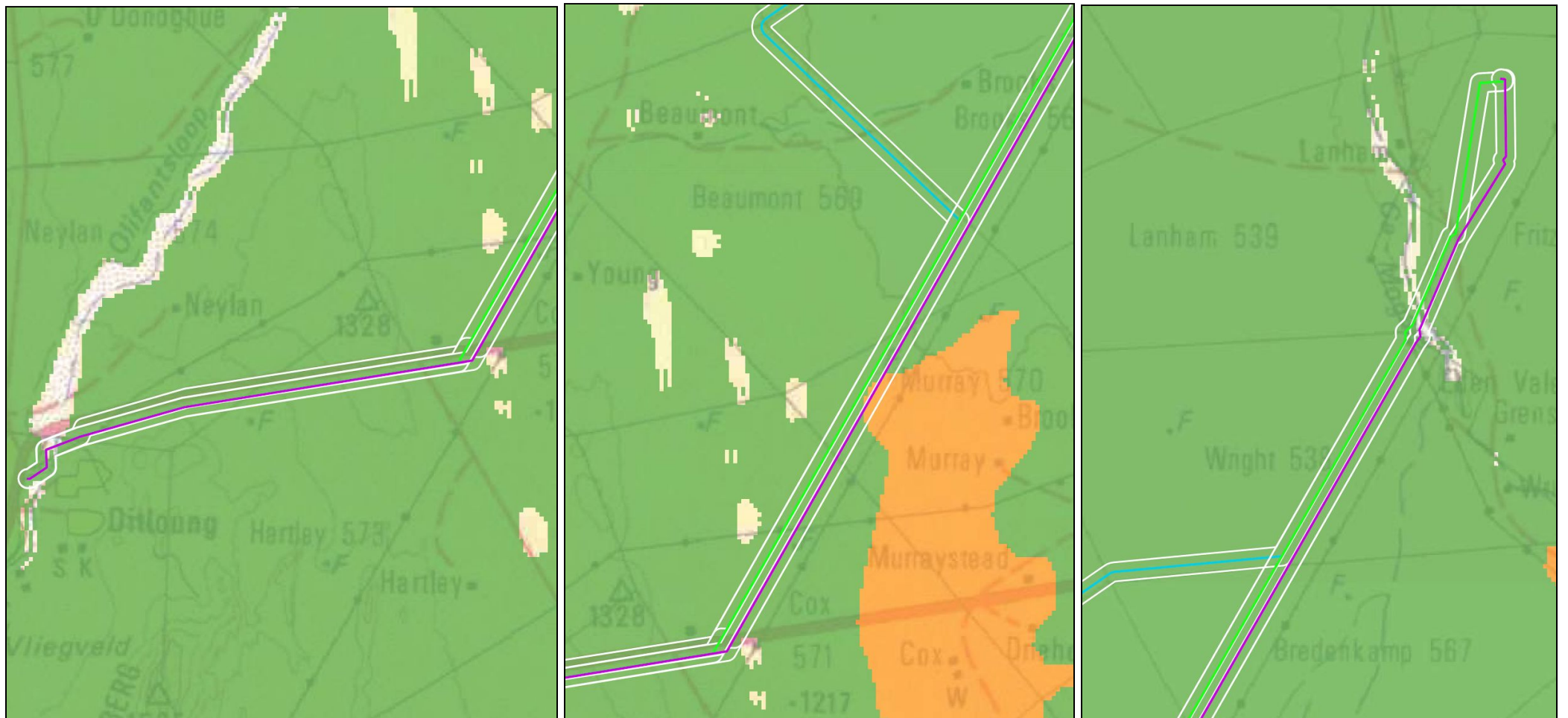
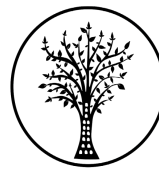


Figure 4b. Palaeo Map. Close up of areas with high, moderate and unknown palaeosensitivity.

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8. Updated Heritage statement and character of the area

Savannah Environmental is managing the Basic Assessment process for a proposed Eskom 132kv power line within the Olifantshoek region. This project entails the construction of a new overhead 132 kV power line approximately 31km to 35km long to connect directly to the Emil switching station via the new on site substation. The majority of the new power line route will follow the existing Ferrum/Nieuwehoop 400kV and Ferrum/Lewensaar 132kV power lines. The corridor of the new power line will be 300m with a servitude of 32m wide.

The development covers a large area, with the proposed power line route running along an existing gravel road, and further south along the existing N14 highway, as well as an existing 400kV power line, ending on the outskirts of the town of Olifantshoek. The proposed development area is therefore already largely disturbed. The location of the pylon footprints supporting the 31km to 35km power line will be spaced at specific intervals and will not have a large impact. It is important to note that the northern portion of the development lies in close proximity (13km) to the Grade I Kathu Pan Archaeological site. This site is known for its rich collection of Early Stone Age artefacts, and several Archaeological Impact Assessments have recorded the area (see Figure 2a and 2b and Appendix 2). These archaeological resources occur in areas associated with outcrops of banded ironstone, and the localised natural pan, with most coming specifically from sinkholes in the pan itself.

Most of the footprint (Alternatives A and B) of the Olifantshoek Power Line project has previously undergone a Heritage Impact Assessment (HIA) (Gaigher 2014, NID 161427 and Beaumont 2007, NID 4600). Gaigher's assessment was conducted for the Solar-Ferrum 400kV Power Line (Case ID 5323). His report concluded that only ephemeral scatters of Stone Age artefacts of low significance were located in the vicinity of the power line, and he recorded no rock engravings or built environment sites - common site types to be found in this region. The only burial grounds site that Gaigher mentions is the Olifantshoek Cemetery (Site ID 95604), which lies roughly 500m to the west of the southern-most tip of the power line (see Figure 3f), but which will not be impacted. Beaumont's (2007) HIA located a burial ground (Site ID 44581) that he concluded to be from the early 1950's or late 1940's. He located some ephemeral stone age artefacts of low significance which he did not record, but found no archaeological or palaeontological sites of value.

According to the SAHRA Palaeosensitivity map, the area is underlain by formations of moderate, high and unknown palaeontological significance. However Almond and Pether (2009) describe these specific formations as having a low sensitivity for fossils: both the Hartley and the Lucknow Formations have a low fossil sensitivity, and the sensitivity of the Volwater Formation is unknown. The Gordonia Formation of the Kalahari Group consists of aeolian sands and fossils (bones, teeth, petrified wood, palynomorphs) mainly associated with ancient pans, lakes and river systems, however in a Palaeontological Impact Assessment by Almond (2012, NID 114648), it is stated that "*while a wide spectrum of vertebrate remains, invertebrates, trace fossils, plant fossils and microfossils have been recorded from these Kalahari Group sediments, in general they are of low palaeontological sensitivity and of considerable lateral extent so impacts on fossil heritage here are likely to be of low significance*". Considering these factors, and the fact that no deep excavation is anticipated to occur, it is unlikely that palaeontologically sensitive sediments will be impacted by the proposed development.

Due to the previously disturbed nature of the proposed development area, as well as the extensive HIA coverage for the area from previous assessments, it is unlikely that the proposed 132kV power line will impact on significant heritage resources. As such, it is recommended that no further heritage studies are required. Should any heritage resources be discovered during the construction phase of the Olifantshoek Power Line, work must cease and the SAHRA APM unit should be contacted immediately.

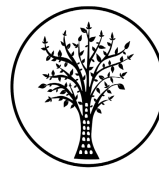
RECOMMENDATION: The heritage resources in the area proposed for development are sufficiently recorded - The disturbed nature of the development area suggests that heritage resources are unlikely to be impacted by this development. A HIA has already been undertaken in this specific region for a different power line. As such, it is recommended that - No further heritage studies are required. If any heritage resources are discovered during the construction phase of the proposed development, the SAHRA APM unit should be contacted immediately

APPENDIX 1

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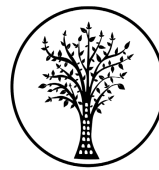
List of heritage resources within 15km inclusion zone

Site ID	Site no	Full Site Name	Site Type	Grading
25782	Kathu Pan 1	Kathu Pan 1, Kathu, Northern Cape	Deposit	Grade I
25795	Kathu Pan 10	Kathu Pan 10, Kathu, Northern Cape	Deposit	Grade I
25783	Kathu Pan 2	Kathu Pan 2, Kathu, Northern Cape	Archaeological	Grade I
25787	Kathu Pan 3	Kathu Pan 3, Kathu, Northern Cape	Deposit	Grade I
25789	Kathu Pan 4	Kathu Pan 4, Kathu, Northern Cape	Archaeological	Grade I
25790	Kathu Pan 5	Kathu Pan, Kathu, Northern Cape	Deposit	Grade I
25791	Kathu Pan 6	Kathu Pan 6, Kathu, Northern Cape	Deposit	Grade I
25792	Kathu Pan 7	Kathu Pan 7, Kathu, Northern Cape	Deposit	Grade I
25793	Kathu Pan 8	Kathu Pan 8, Kathu, Northern Cape	Deposit	Grade I
25794	Kathu Pan 9	Kathu Pan 9, Kathu, Northern Cape	Deposit	Grade I
8	Kathu Pan Sites	Kathu Pan Sites 1-11	Archaeological, Deposit	Grade I
24817	Kathu Townlands	Kathu Townlands 1	Deposit	Grade I
34441	ING007	Inglesby 7	Rock Art	Grade IIIa
45543	UPING12	Upington 12	Burial Grounds & Graves	Grade IIIa
34442	ING008	Inglesby 8	Rock Art	Grade IIIa
34434	ING001	Ingleby 1	Burial Grounds & Graves	Grade IIIa
34438	ING004	Ingleby 4	Burial Grounds & Graves	Grade IIIa
44581	SKERP-DIEP 01	Skerpdraai-Diepkloof 01	Burial Grounds & Graves	Grade IIIa
44598	POST-KATH04	Postmasburg to Kathu 04	Burial Grounds & Graves	Grade IIIa
44595	POST-KATH01	Postmasburg to Kathu 01	Burial Grounds & Graves	Grade IIIa
95596	Vaal-Gamagara 01	Vaal-Gamagara 01	Palaeontological	Grade IIIa
95598	Vaal-Gamagara 03	Vaal-Gamagara 03	Palaeontological	Grade IIIa
95599	Vaal-Gamagara 04	Vaal-Gamagara 04	Palaeontological	Grade IIIa

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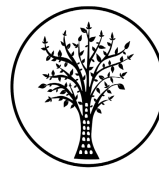
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95600	Vaal-Gamagara 05	Vaal-Gamagara 05	Palaeontological	Grade IIIa
95597	Vaal-Gamagara 02	Vaal-Gamagara 02	Palaeontological	Grade IIIa
95604	OFHC	Olifantshoek Cemetery	Burial Grounds & Graves	Grade IIIa
46301	KAT-SIS10	Kathu-Sishen 10	Artefacts	Grade IIIb
46302	KAT-SIS11	Kathu-Sishen 11	Artefacts	Grade IIIb
46300	KAT-SIS09	Kathu-Sishen 09	Artefacts	Grade IIIb
44600	POST-KATH06	Postmasburg to Kathu 06	Artefacts	Grade IIIb
40235	GMGR02	Gamagara 02	Artefacts	Grade IIIb
40236	UKM001	Uitkoms, Kathu 001	Artefacts	Grade IIIb
45445	DELP01	Delpportshoop 01	Archaeological	Grade IIIb
85512	HEFP004	HIGH ENERGY FUEL PLANT 004	Structures	Grade IIIc
85511	HEFP003	HIGH ENERGY FUEL PLANT 003	Artefacts	Grade IIIc
45570	SIMS01	Sims 462 - 01	Artefacts	Grade IIIc
45577	SIMS02	Sims 462 - 02	Artefacts	Grade IIIc
45579	SIMS04	Sims 462 - 04	Artefacts	Grade IIIc
45580	SIMS05	Sims 462 - 05	Artefacts	Grade IIIc
45581	SIMS06	Sims 462 - 06	Artefacts	Grade IIIc
45582	SIMS07	Sims 462 - 07	Artefacts	Grade IIIc
45583	SIMS08	Sims 462 - 08	Artefacts	Grade IIIc
45584	SIMS09	Sims 462 - 09	Artefacts	Grade IIIc
45585	SIMS10	Sims 462 - 10	Artefacts	Grade IIIc
45578	SIMS03	Sims 462 - 03	Artefacts	Grade IIIc
45586	SIMS11	Sims 462 - 11	Artefacts	Grade IIIc
45587	SIMS12	Sims 462 - 12	Artefacts	Grade IIIc

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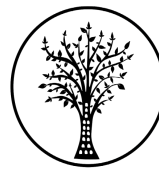
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45588	SIMS13	Sims 462 - 13	Artefacts	Grade IIIc
45589	SIMS14	Sims 462 - 14	Artefacts	Grade IIIc
45590	SIMS15	Sims 462 - 15	Artefacts	Grade IIIc
45591	SIMS16	Sims 462 - 16	Artefacts	Grade IIIc
45592	SIMS17	Sims 462 - 17	Artefacts	Grade IIIc
45595	SIMS20	Sims 462 - 20	Artefacts	Grade IIIc
46298	KAT-SIS07	Kathu-Sishen 07	Artefacts	Grade IIIc
45593	SIMS18	Sims 462 - 18	Artefacts	Grade IIIc
46299	KAT-SIS08	Kathu-Sishen 08	Artefacts	Grade IIIc
45594	SIMS19	Sims 462 - 19	Artefacts	Grade IIIc
91352	DG001	Dingleton 001	Artefacts	Grade IIIc
44549	FULL01	Fuller 01	Artefacts	Grade IIIc
85509	HEFP001	HIGH ENERGY FUEL PLANT 001	Artefacts	Grade IIIc
85510	HEFP002	HIGH ENERGY FUEL PLANT 002	Artefacts	Grade IIIc
34435	ING002	Ingleby 2	Building	Ungraded
34437	ING003	Inglesby 3	Building	Ungraded
34440	ING006	Ingleby 6	Stone walling	Ungraded
29760	Dingleton Resettlement Project	Dingleton	Structures	Ungraded
25796	Kathu Pan 11	Kathu Pan 11, Kathu, Northern Cape	Deposit	Ungraded
24685	SA02 Woon 469	SA02 on Woon 469	Artefacts	Ungraded
24697	Site A, Farm Fuller 578, Olifantshoek	Site A, Farm Fuller 578, Olifantshoek	Archaeological	Ungraded
34439	ING005	Ingleby 5	Stone walling	Ungraded
108046	KC1	New Kathu Cemetery - Findspot KC1	Deposit	Ungraded
102663	Kathu Pan	Kathu Pan Sites	Archaeological	Ungraded

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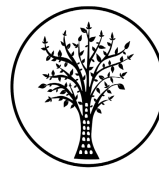
Reference List

Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title
49746	AIA	Neels Kruger	01/05/2012	Archaeological Impact Assessment (AIA) of Demarcated Surface Areas On The Farms Gamagara 541, Onverwacht 540 (Fritz 540 Portion 1) And Nooitgedacht 469 (Woon 469), Sishen Iron Ore Mine, Kgalagadi District Municipality, Northern Cape Province
118196	HIA	Maria Van der Ryst, Siegwalt Kusel	28/02/2013	Phase 2 Specialist Study Of Affected Stone Age Locality At Site Sa02, A Demarcated Surface Area, On The Farm Nooitgedacht 469 (Woon 469) Proposed Sishen Western Waste Rock Dumps Sishen Iron Ore Mine Kgalagadi District Municipality Northern Cape Province
170455	AIA	Neels Kruger	31/03/2014	Archaeological Impact Assessment (AIA) Of Demarcated Surface Portions On The Farms Sacha 468, Sims 462 And Sekgame 461 For The Proposed Stormwater Infrastructure (clean water cut-off berm & groundwater dam) For The Sishen Mine, Kathu, Northern Cape Province, John Taolo Gaetsewe District Municipality, Northern Cape Province
167779	HIA	Jonathan Kaplan	30/06/2014	Heritage Impact Assessment Proposed Mixed Use Development In Kathu, Northern Cape Province Remainder & Portion 1 Of The Farm Sims 462, Kuruman Rd
8086	AIA	Johan Nel	14/11/2008	Final Report Heritage Resources Scoping Survey & Preliminary Assessment Transnet Freight Line EIA, Eastern Cape and Northern Cape
92575	HIA	Elize Becker	10/10/2012	Phase 1 Heritage Impact Assessment Kimberley to De Aar
93185	HIA	Elize Becker	01/11/2012	Phase 1 Heritage Impact Assessment Hotazel to Kimberley and De Aar to Port Ngqura
123045	AIA	Cobus Dreyer	26/06/2013	Report Eskom Garona Ferrum Mercury
129751	HIA	Elize Becker	20/02/2013	Phase 1 Heritage Impact Assessment Hotazel to Kimberley and De Aar to Port of Ngqura
163959	HIA	Anton van Vollenhoven	17/03/2014	HIA Eskom Manganore to Ferrum Scoping Phase
170455	AIA	Neels Kruger	31/03/2014	Archaeological Impact Assessment (AIA) Of Demarcated Surface Portions On The Farms Sacha 468, Sims 462 And Sekgame 461 For The Proposed Stormwater Infrastructure (clean water cut-off berm & groundwater dam) For The Sishen Mine, Kathu, Northern Cape Provi

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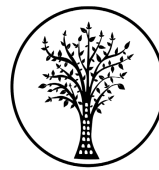
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170664	AIA	Cobus Dreyer	28/09/2012	First Phase Archaeological And Heritage Assessment Of The Proposed Vaal-gamagara Water Pipeline Project, Northern Cape
170666	AIA	Cobus Dreyer	31/12/2013	First Phase Archaeological & Heritage Assessment Of The Vaal-gamagara Water Pipeline Project, Northern Cape: Revisit To The Kathu Pan Archaeological Site
170660	AIA	Cobus Dreyer	31/01/2014	First Phase Archaeological & Heritage Assessment Of The Proposed Vaal-gamagara Water Pipeline Project, Northern Cape: Hotazel Alternative Water Pipeline
279906	AIA	Neels Kruger	02/12/2014	Archaeological Impact Assessment (AIA) Of Demarcated Surface Portions On The Farm Sekgame 461 For The Proposed Sekgame Electricity Infrastructure Expansion Project, Sishen Mine, Northern Cape Province
294454	AIA	Neels Kruger	05/04/2015	Archaeological Impact Assessment (AIA) Of Areas Demarcated For The Proposed Lyleveld North Waste Rock Dump Expansion And Lyleveld South Haul Road Extension Project, Sishen Mine, Northern Cape Province
324952	HIA	Lloyd Rossouw	07/07/2015	Phase 1 Heritage Impact Assessment of the 2.3 km long 40478 Vaal-Gamagara water pipeline alternative route around Kathu Pan, Northern Cape Province
329708	HIA	Anton van Vollenhoven	01/11/2014	HIA Eskom Manganore-Ferrum for EIA Phase
4116	AIA	Peter Beaumont	06/02/2008	Phase 1 Heritage Impact Assessment Report on a Portion of the Remainder of the Farm Sekgame 461, Kathu, Gamagara Municipality, Northern Cape Province
4117	AIA	Peter Beaumont	07/02/2008	Phase 1 Heritage Impact Assessment Report on Portion 463/8 of the Farm Uitkoms 463, near Kathu, Kgalagadi Municipality, Northern Cape Province
4372	AIA	David Morris	01/02/2005	Report on a Phase 1 Archaeological Assessment of Proposed Mining Areas of the Farms Bruce, King, Mokaning and Parson, Between Postmasburg and Kathu, Northern Cape
6804	AIA	Peter Beaumont	01/04/2000	Archaeological Impact Assessment: Archaeological Scoping Survey for the Purpose of an EMPR for the Sishen Iron Ore Mine
4605	AIA	Peter Beaumont	03/04/2007	Phase 1 Heritage Impact Assessment Report on a Portion of the Farm Fuller 578 near Olifantshoek, Siyanda District Municipality, Northern Cape Province
93163	HIA	Stephan Gaigher	09/05/2012	Heritage Impact Assessment Report Environmental Impact Assessment Phase: Proposed Establishment of the San Solar Energy Facility, Located North of Kathu on a Portion of Farm Wincanton 472, Northern Cape Province
108346	AIA	Christine Vivier	12/11/2009	Phase 1 Archaeological Impact Assessment report on a portion of the farm Lylyveld 545 near Kathu, Kagalagadi District Municipality, Northern Cape province.
108970	AIA	Nelius Kruger	01/09/2012	Archaeological Impact Assessment (AIA) Of Dermacaed Surface Areas On The Farms Gamagara 541, Onverwacht 540

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				(Fritz 540 Portion 1) And Nooitgedacht 469 (Woon 469), Sishen Iron Ore Mine, Kgalagadi District Municipality, Northern Cape Province.
109484	HIA	Stephan Gaigher	09/05/2012	Heritage Impact Assessment Report Environmental Impact Assessment Phase Proposed Establishment Of The San Solar Energy Facility Located South Of Kathu On A Portion Of The Farm Wincanton 472, Northern Cape Province.
110765	HIA	Stephan Gaigher	26/02/2013	Heritage Impact Assessment Report Environmental Impact Assessment Phase Proposed Establishment Of The San Solar Energy Facility Located North Of Kathu On A Portion Of The Farm Wincanton 472, Northern Cape Province
123399	AIA	Peter Beaumont	15/05/2013	Phase 2 Archaeological Permit Mitigation Report on a ~0.7 Ha Portion Of The Farm Bestwood 549, Situated On The Eastern Outskirts Of Kathu, John Taolo Gaetsewe District Municipality, Northern Cape Province.
129751	HIA	Elize Becker	20/02/2013	Phase 1 Heritage Impact Assessment Hotazel to Kimberley and De Aar to Port of Ngqura
152157	HIA	Johnny Van Schalkwyk	15/05/2012	Heritage Impact Assessment for the proposed estate development on the farm Kalahari Golf and Jag Landgoed 775, Kathu, Northern Cape Province
153307	HIA	Robert de Jong	22/02/2011	Kalahari Solar Power Project Heritage Impact Assessment Report and Heritage Management Plan developed by Robert De Jong and Associates
157923	HIA	R. C. De Jong	10/12/2010	Heritage Scoping Report for the Proposed Kalahari Solar Project on Portions of the Farm Kathu 465, Kuruman Registration Division, Gamagara Local Municipality, Northern Cape Province
159473	AIA	Johnny Van Schalkwyk	01/08/2010	Archaeological Impact Survey report for The Proposed Development Of A Solar Power Plant On The Farm Bestwood 459, Kathu Region, Northern Cape Province
160089	AIA	Johnny Van Schalkwyk	01/08/2010	Archaeological Impact Survey report for The Proposed Kalahari Solar Park Development On The Farm Kathu 465, Northern Cape Province
161427	HIA	Stephan Gaigher	15/04/2014	Proposed Establishment of Several Electricity Distribution Lines within the Northern Cape Province
170455	AIA	Neels Kruger	31/03/2014	Archaeological Impact Assessment (AIA) Of Demarcated Surface Portions On The Farms Sacha 468, Sims 462 And Sekgame 461 For The Proposed Stormwater Infrastructure (clean water cut-off berm & groundwater dam) For The Sishen Mine, Kathu, Northern Cape Province
170460	AIA	Neels Kruger	31/01/2014	Archaeological Impact Assessment (AIA) Of Demarcated Surface Portions On The Farms Sacha 468 And Woon 469 For The Proposed High Energy Fuel Plant And Railway Siding, Sishen Iron Ore Mine, John Taolo Gaetsewe District Municipality, Northern Cape Province
177105	HIA	Cobus Dreyer	10/05/2014	First Phase Archaeological & Heritage Investigation Of The Proposed Mine Prospecting At The Remaining Extent Of The Farm Inglesby 580 Near Olifantshoek, Northern Cape Province

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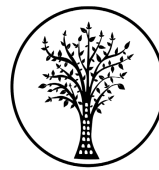
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279906	AIA	Neels Kruger	02/12/2014	Archaeological Impact Assessment (AIA) Of Demarcated Surface Portions On The Farm Sekgame 461 For The Proposed Sekgame Electricity Infrastructure Expansion Project, Sishen Mine, Northern Cape Province
294454	AIA	Neels Kruger	05/04/2015	Archaeological Impact Assessment (AIA) Of Areas Demarcated For The Proposed Lyleveld North Waste Rock Dump Expansion And Lyleveld South Haul Road Extension Project, Sishen Mine, Northern Cape Province
Palaeontological Impact Assessments				
114648	PIA	John E Almond	01/09/2012	Palaeontological specialist assessment: desktop study
151768	PIA	John E Almond	01/11/2013	Palaeontological specialist assessment: combined desktop and field-based 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.
8944	PIA	John Pether	17/01/2011	Brief Palaeontological Impact Assessment (desktop study) Proposed Kathu & Sishen Solar Energy Facilities Portions 4 & 6 of the Farm Wincanton 472 Kuruman District, Northern Cape
369550	PIA	Lloyd Rossouw	07/07/2015	Palaeontological Desktop Assessment of the proposed new 40478 Vaal-Gamagara water pipeline between Sishen and Black Rock Mine near Hotazel, 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)
DEA	Department of Environmental Affairs
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
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

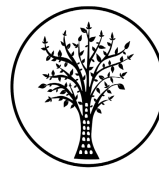
Full guide to Palaeosensitivity Map legend

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

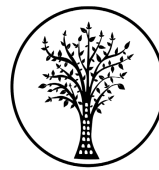
DETERMINATION OF THE COVERAGE RATING ASCRIBED TO A REPORT POLYGON

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

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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

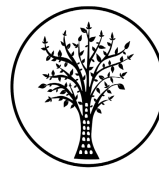
(2) The heritage resources and the area proposed for development are only partially recorded - The surveys undertaken in the area have not adequately captured the heritage resources and/or there are sites which require mitigation or management plans. Further specific heritage work is recommended for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

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- 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.

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