



CTS HERITAGE

HERITAGE SCREENER

CTS Reference Number:	CTS21_269
SAHRIS Ref:	
Client:	Savannah
Date:	January 2022
Title:	Development of the Riet Fountain Solar PV1 Facility and associated Grid Connection Infrastructure near De Aar, Northern Cape Province
CTS Heritage Recommendation:	RECOMMENDATION Based on the information available, it is likely that the proposed development will negatively impact on significant archaeological heritage resources and as such, it is recommended that a Heritage Impact Assessment is completed that satisfies section 38(3) of the NHRA and assesses these impacts.

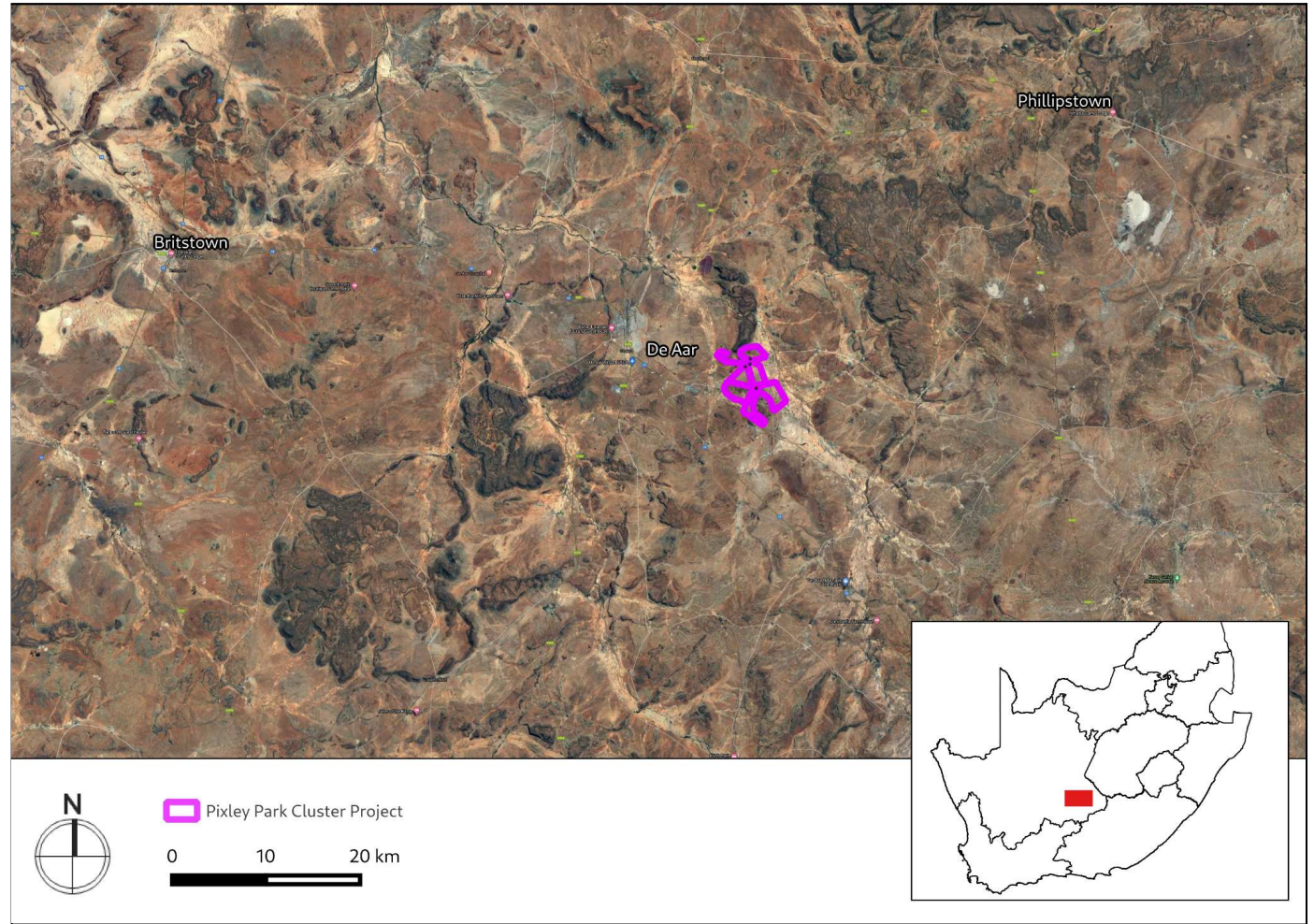


Figure 1a. Satellite map indicating the location of the proposed development in the Western Cape Province

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1. Proposed Development Summary

Riet Fountain Solar PV1 (Pty) Ltd is proposing the development of a Photovoltaic (PV) Solar Energy Facility and associated infrastructure on Portion 4 of the Farm Riet Fountain No.6, located approximately 10km east of De Aar within the Emthanjeni Local Municipality in the Northern Cape Province. The facility will have a contracted capacity of up to 100MW and will be known as Rietfontein Solar PV1. The project is planned as part of a cluster of renewable energy facilities known as Pixley Park, which includes three (3) additional 100MW Solar PV Facilities (Wagt Solar PV1, Carolus PV1, and Fontain Solar PV1), and grid connection infrastructure connecting the facilities to the existing Hydra Substation. The projects will all connect to the new Vetlaagte Main Transmission Substation (MTS) via the Wag 'n Bietjie MTS. Infrastructure associated with the Solar PV Facility will include the following:

- Solar PV array comprising bifacial PV modules and mounting structures, using single axis tracking technology
- Inverters and transformers
- Cabling between the panels
- Battery Energy Storage System (BESS)
- Laydown areas, construction camps, site offices
- 12m wide Access Road and entrance gate to the project site and switching station
- 6m wide internal distribution roads
- Operations and Maintenance Building, Site Offices, Ablutions with conservancy tanks, Storage Warehouse, workshop, Guard House
- Onsite 132kV IPP Substation, including the HV Step-up transformer, and MV Interconnection building
- 132kV Overhead Power Line (OHPL) – 30m height from the switching station to the Main Transmission Substation (MTS) located on farms Vetlaagte and Wagt, which is to be handed back to Eskom (a separate EA is being applied for in this regard)
- Extension of the 132kV Busbar at the MTS
- 132kV Feeder Bay at the MTS
- Extension of the 400kV Busbar at the MTS
- Installation of a new 400/132kV Transformer and bay at the MTS

A development footprint of approximately 781ha has been identified within the broader project site (approximately 8 200ha in extent), by the developer for the development of the Rietfontein Solar PV1 Facility, which is proposed in response to the identified objectives of the national and provincial government and local and district municipalities to develop renewable energy facilities for power generation purposes. It is the developer's intention to bid the proposed project under the Department of Mineral Resources and Energy's (DMRE's) Renewable Energy Independent Power Producer Procurement (REIPPP) Programme (or similar programme), with the aim of evacuating the generated power into the national grid. This will aid in the diversification and stabilisation of the country's electricity supply, in line with the objectives of the Integrated Resource Plan (IRP), with Rietfontein Solar PV1 set to inject up to 100MW into the national grid.

2. Application References

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

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3. Property Information

Latitude / Longitude	30°43'30.27"S 24° 9'41.23"E
Erf number / Farm number	Farm Wag 'n Bietjie 5, Portion 1 of Farm Riet Fountain 6, Portion 3 and 4 of Farm Carolus Poort 3
Local Municipality	Emthanjeni
District Municipality	Pixley ka Seme
Province	Northern Cape
Current Use	Agriculture with approved PV facility
Current Zoning	Agriculture

4. Nature of the Proposed Development

Depth of excavation (m)	TBA
Height of development (m)	TBA
Total Area	TBA

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-
x	a) exceeding 5 000m ² in extent
	b) involving three or more existing erven or subdivisions thereof



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	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

Additional infrastructure listed under project summary.

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

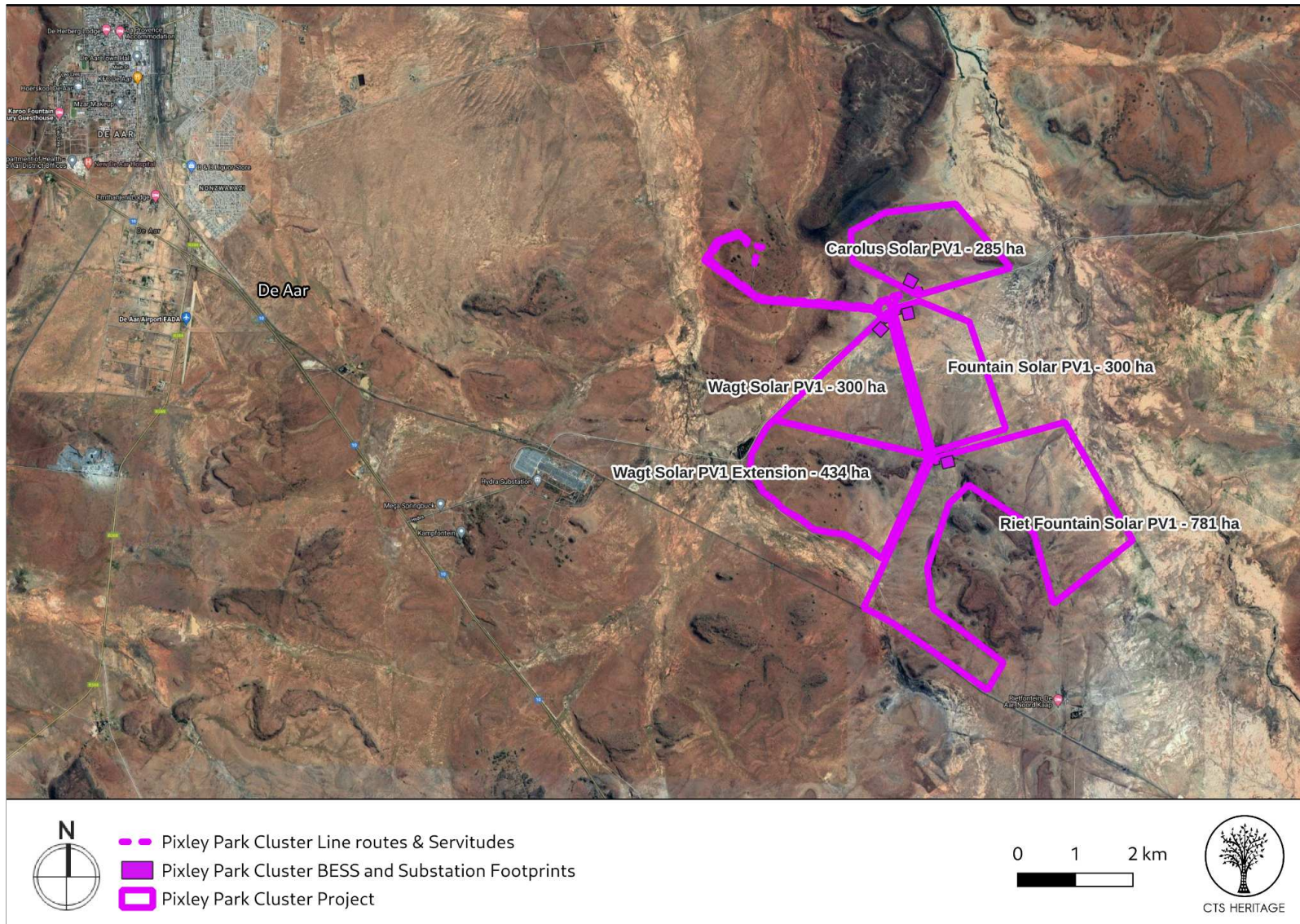


Figure 1b Overview Map. Satellite image (2019) indicating the proposed development area at closer range.

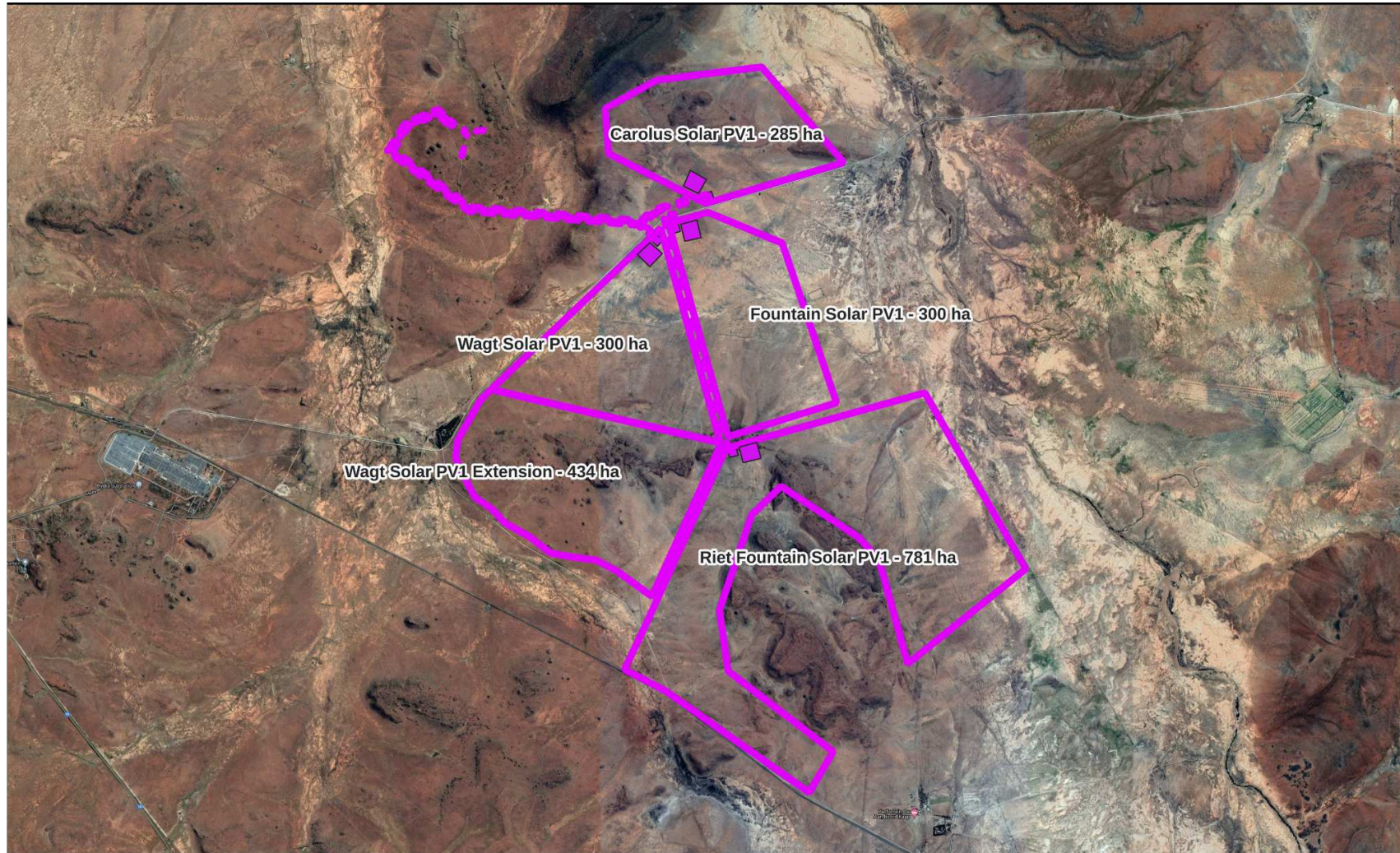
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- Pixley Park Cluster Line routes & Servitudes
- Pixley Park Cluster BESS and Substation Footprints
- Pixley Park Cluster Project



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Figure 1c Overview Map. Satellite image (2019) indicating the proposed development area at closer range.

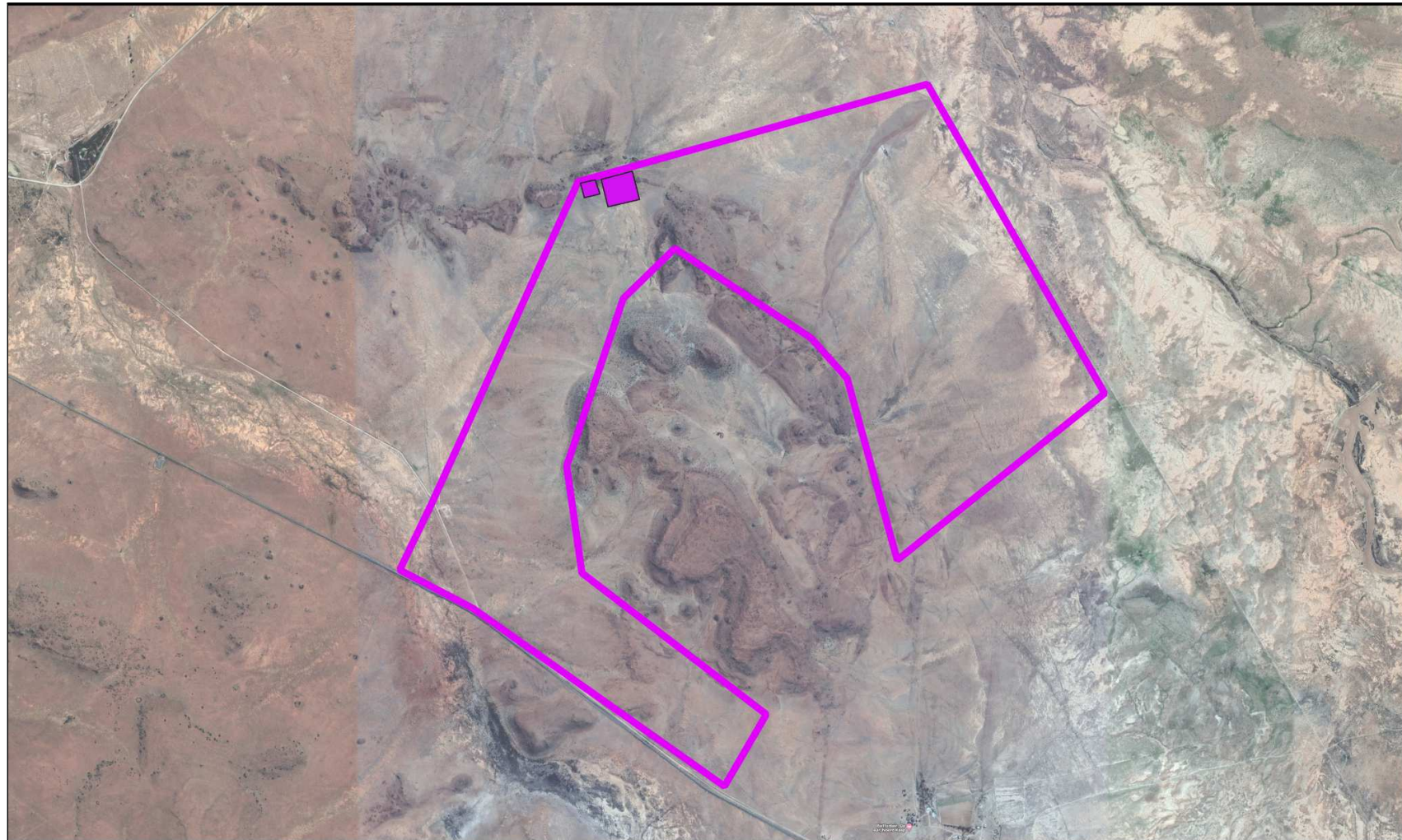
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-  Pixley Park Cluster BESS and Substation Footprints
-  Rietfontein Solar PV 1



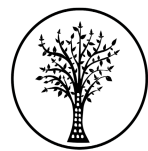
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Figure 1d Overview Map. Satellite image (2019) indicating the proposed development area at closer range.

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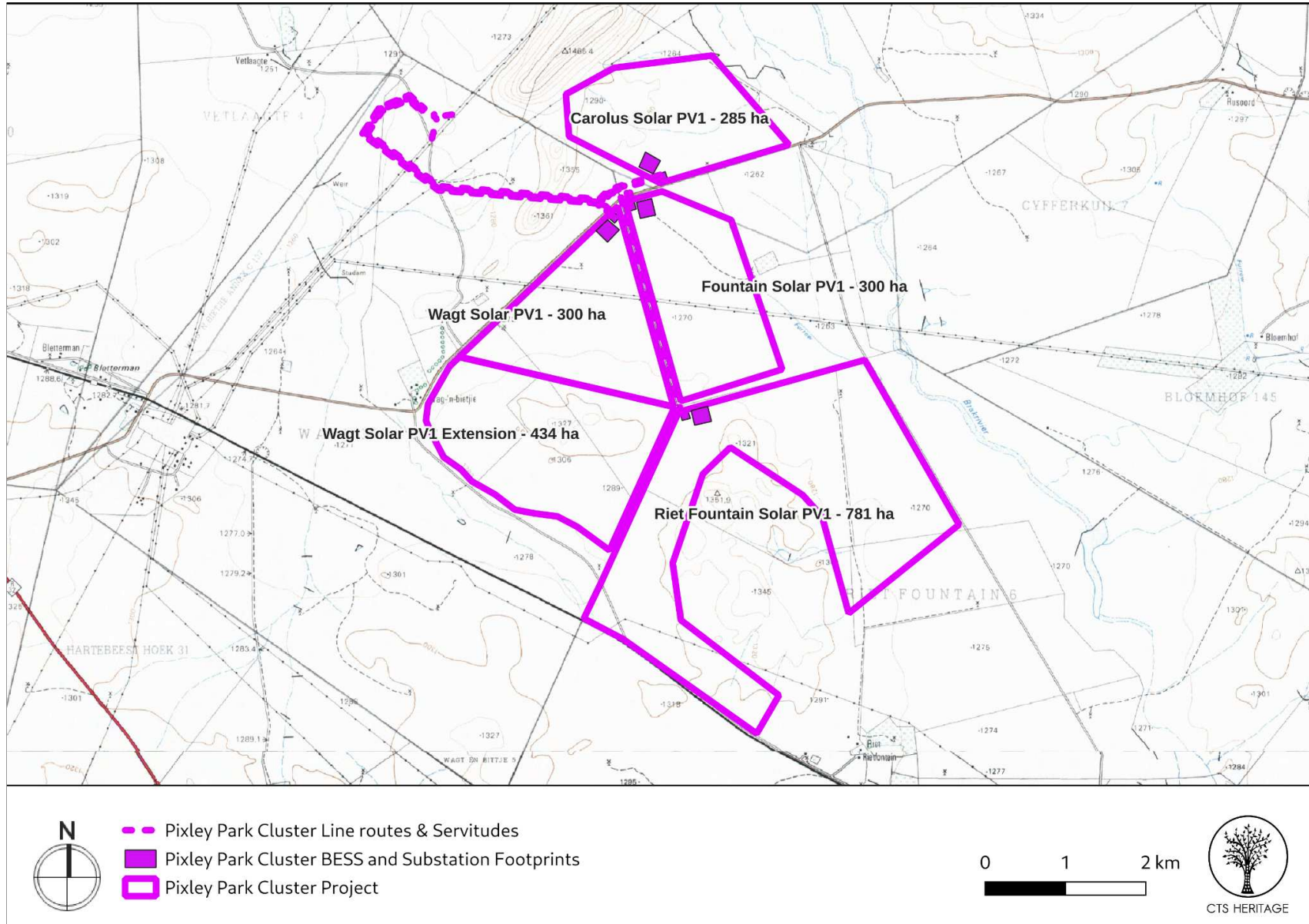


Figure 1e Overview Map. 1:50 000 Topo Map indicating the proposed development area at closer range.

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Figure 2b. Environmental Authorisations. Previous Environmental Authorisations issued for Renewable Energy Projects in the vicinity of the proposed development

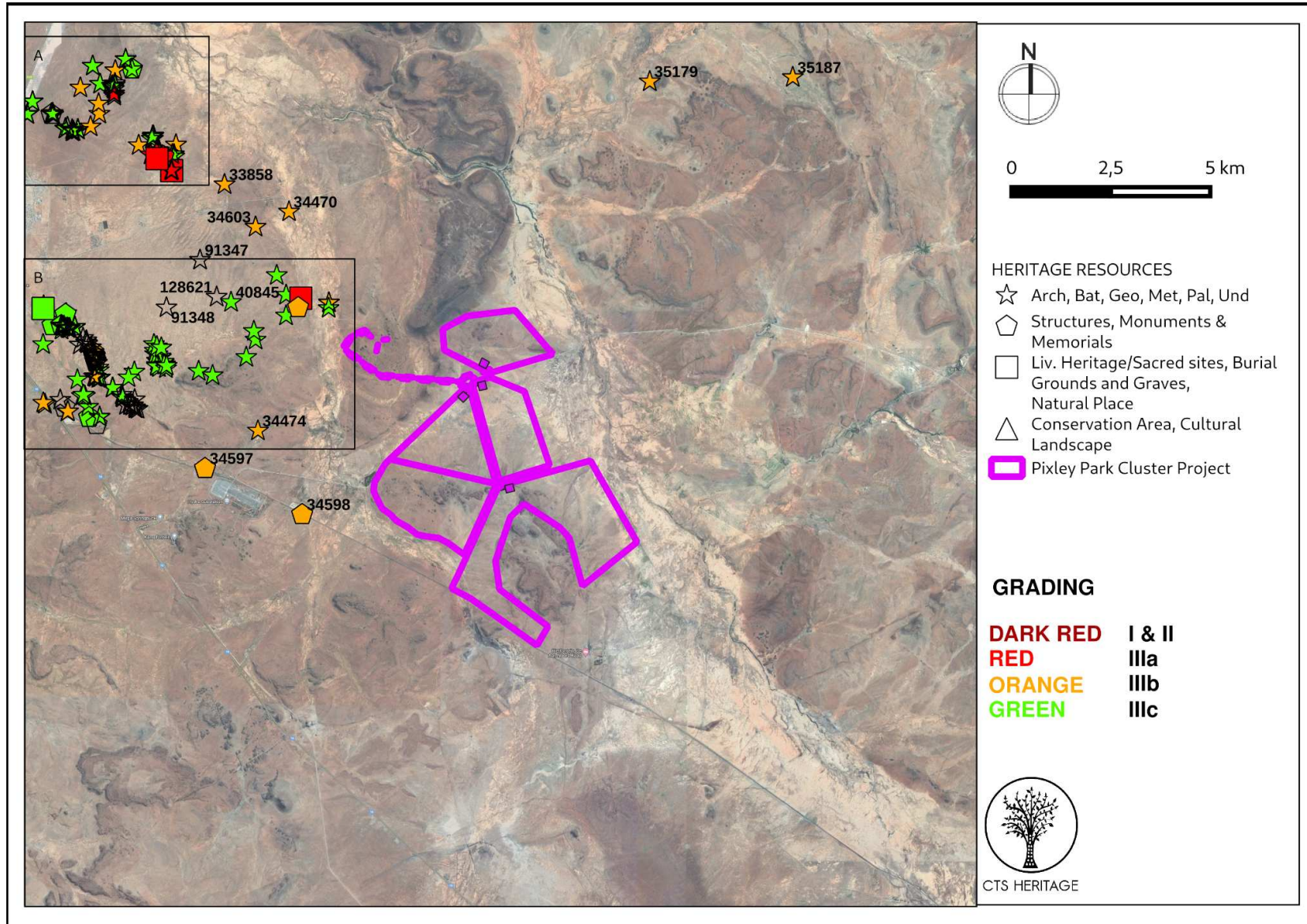


Figure 3. Heritage Resources Map. Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated. Please See Appendix 4 for a full description of heritage resource types.



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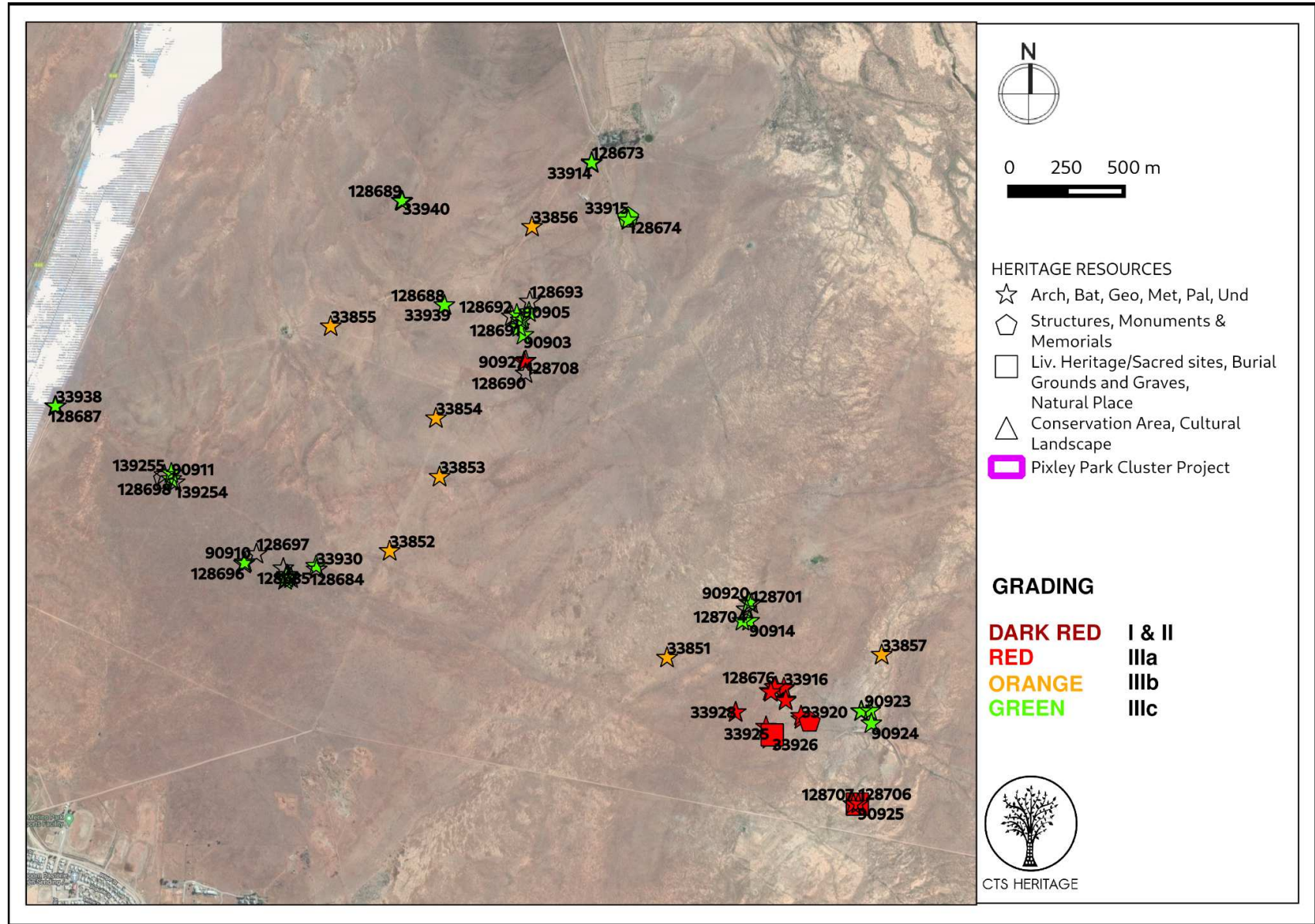


Figure 3a. Heritage Resources Map. Inset A

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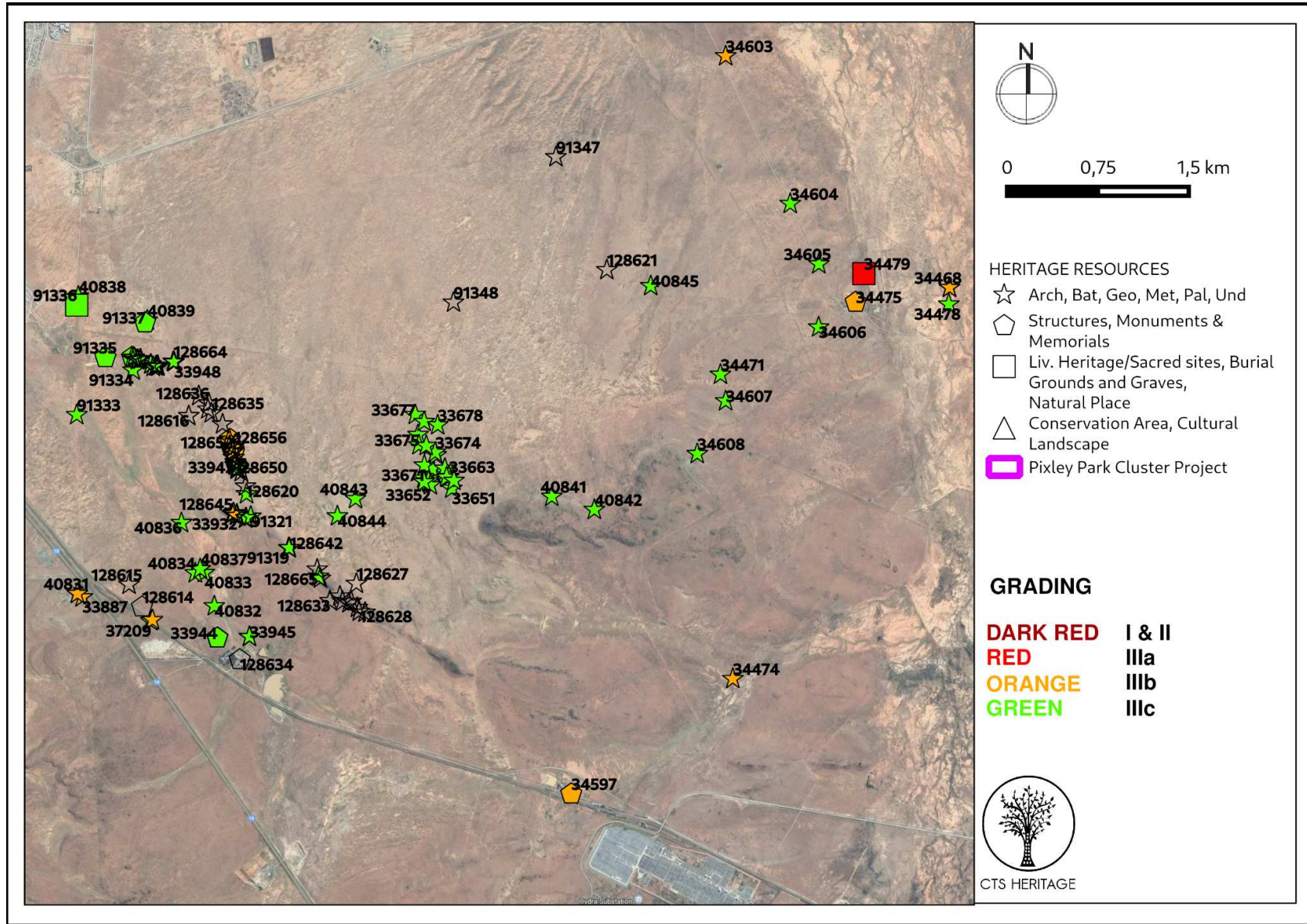


Figure 3b. Heritage Resources Map. Inset B

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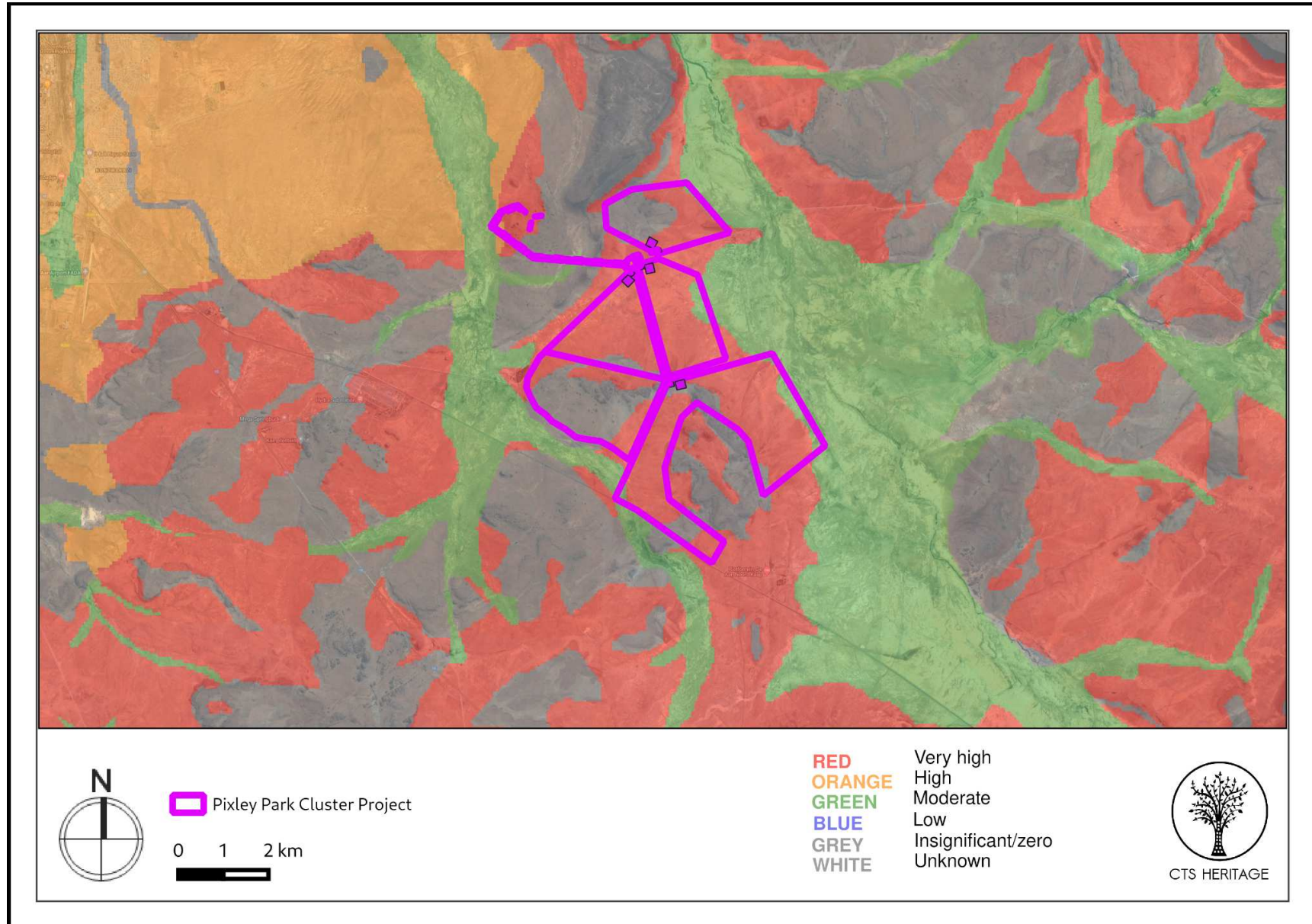


Figure 4a. Palaeosensitivity Map. Indicating very high fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.

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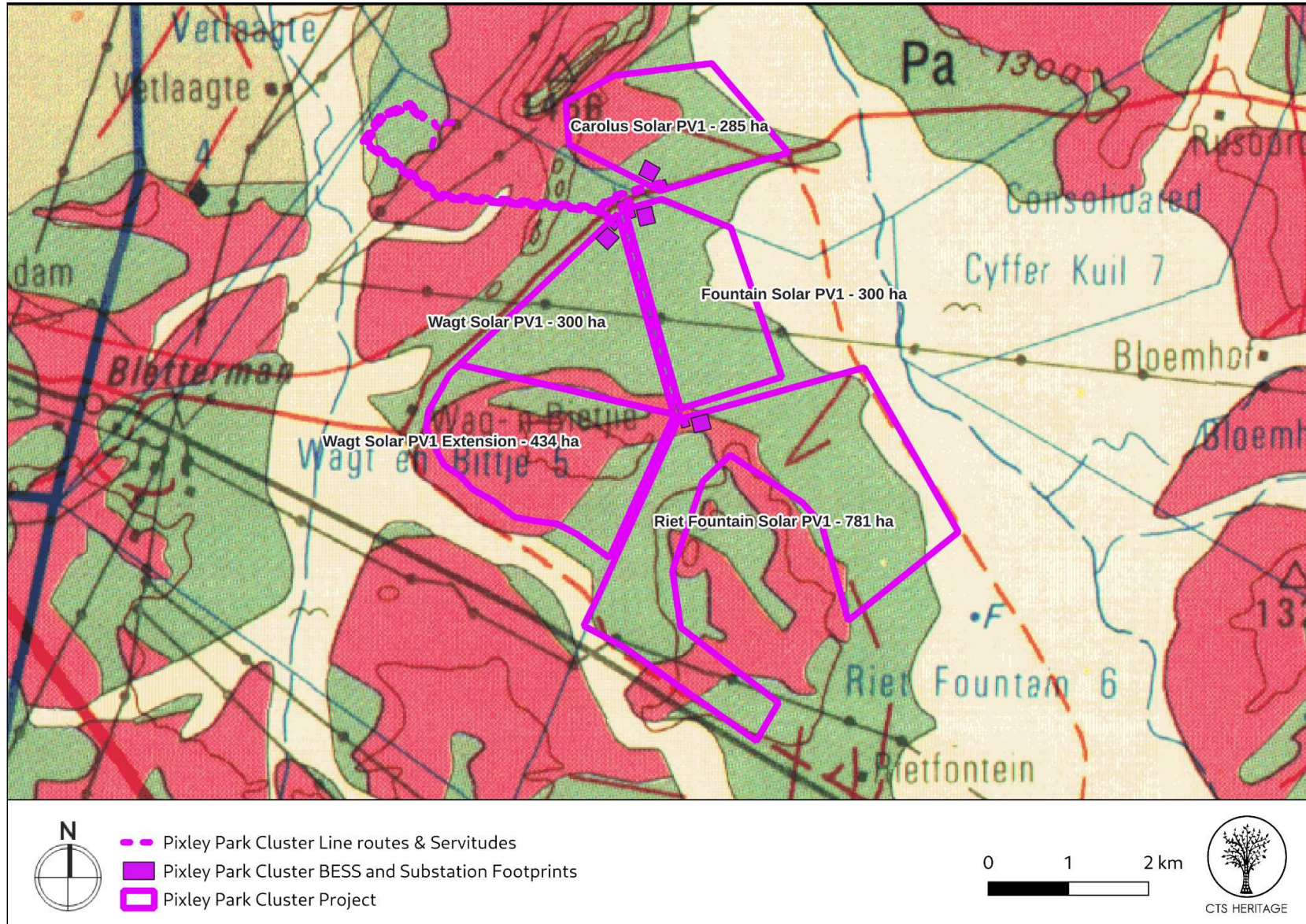


Figure 4b. Geology Map. Extracted from the Council for GeoSciences Map 3024 for Colesburg indicating that the development area is underlain by Jd: Jurassic Dolerite (red), Pt (lighter green): Tierberg Formation of the Ecca Group and Pa (darker green): Adelaide Subgroup of the Beaufort Group

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8. Brief Heritage Summary

Background

De Aar was originally established on the Farm "De Aar." The name means "the artery," a reference to its underground water supply. The Cape Government Railways were founded in 1872, and the route that the government chose for the line to connect the Kimberley diamond fields to Cape Town on the coast, ran directly through De Aar. Because of its central location, the government also selected the location for a junction between this first railway line, and the other Cape railway networks further east, in 1881. In 1899 two brothers who ran a trading store and hotel at the junction, Isaac and Wulf Friedlander, purchased the farm of De Aar. Following the Anglo Boer War, the Friedlander brothers surveyed the land for the establishment of a town. The municipality was created a year later in 1900.

Orton (2012) writes that "The colonial period history of the area is not that old. While the town of De Aar only dates back to 1903, just after the cessation of the 1899-1902 Anglo-Boer War, farms were given out and surveyed in the 1800s." He goes on to note that "The railway junction dates to 1881 when Cape Town and Kimberley were linked by rail after diamonds were discovered at the latter town. It was very important to the British during the Anglo-Boer War since railway lines from Cape Town and Port Elizabeth joined here and extended on through Kimberly to Mafikeng (AngloBoerWar.com 2011). De Aar was also the site of the first use of wireless telegraphy in South Africa where the British employed it to maintain communications between their various columns operating in the area. However, owing to the climatic conditions in the Karoo, the wireless sets, which were designed for shipboard use, could not perform properly and were soon withdrawn from inland service (Baker 1998). The town was laid out around the railway junction on the farm De Aar which was purchased in 1889 by Isaac and Wolf Friedlander, who ran a trading store and hotel at the railway junction. After the war, the brothers established the town." Orton (2012) also notes that "Two Provincial Heritage Sites occur in De Aar. These are the "Olive Schreiner house" and the "St Paul's Church". At least one other building is listed (SAHRA, n.d.). Many of the older buildings in the town are early 20th century, including some art deco, but the majority of structures date to the mid- to late 20th century. De Aar is well known as one of the places where Olive Schreiner lived. She and her husband were there from 1907 to 1914."

Kruger (2012) describes the development area as "characterised by flat undulating Karoo vegetation comprised of relatively sparse scrub and grasses, with dolerite hills in the surrounding landscape. Large portions of the land is currently devoted to livestock farming but a number of solar energy facilities are to be constructed on farms around De Aar. Shallow soils covers a combination of calcrete, shale and dolerite substrates, and large sections in the landscape are exposed to sheet erosion, specifically along low lying areas and drainage lines. Dolerite and sandstone is present, while exotic rocks occur in the gravel of the Orange River bed and terraces. These provided suitable material for stone tool production during the Earlier, Middle and Later Stone Ages."

Archaeology

As part of the 2012 process for approval of the Vetlaagte Solar Energy Facility located immediately adjacent to the proposed development area, Kruger conducted a detailed Heritage Impact Assessment of the area. According to Kruger (2012), "During the survey, widespread Middle Stone Age (MSA) material, including characteristic formal MSA stone tools such as points, blades and scrapers were documented in the survey area along a north-south oriented drainage on the (western) periphery of the property. The lithic remains occur in three large scatters and, almost without exception, in low lying areas along non-perennial drainage lines and wetland areas where precipitation and groundwater have exposed the stone tools, originally deposited on a decomposed calcrete rock layer approximately 30cm sub surface. Preliminary examinations of some of the lithics indicated that a number of flakes displayed faceted platforms, characteristic of the MSA." Part of the study area for the Wag 'n Bietjie development assessed in this report is located within the drainage described above. It is therefore likely that the proposed development will impact on significant MSA archaeology.

Kruger (2012) also documented historical period remains, "specifically the old Vetlaagte homestead with restored farmhouse, outbuildings, midden and labourers quarters, as well as a dilapidated dam wall constructed in the drainage line east of the farmstead are present on the property. The date of construction of the farm house is denoted by a year count ("1930") on the front gable of the structure. The entire farmstead is situated in an area excluded from the solar farm development. A small family graveyard, associated with the farmstead at Vetlaagte, also occurs in the exclusion zone about 100m north of the farm house."

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In his assessment of areas adjacent to this proposed development, Orton (2012) found that “All the archaeological finds on Badenhorst Dam Farm were pre-colonial, but nevertheless, different types were present. This farm also had areas with artefacts best described as being ‘background scatter’. The grass cover, however, meant that fewer such areas were identified. Most were in open, silty patches that clearly hold water in the rainy season...” Orton (2012) found LSA artefacts associated with the ridge running through the property that he assessed, and MSA artefacts from a pan-like area. He noted that “the artefacts in the flatter areas here appeared to be of much lower density and far fewer occurrences were recorded. However, stone artefact scatters with spatial integrity were more common. These were predominantly LSA and very much focused on the rocky ridges crossing the farm.”

Orton (2012) noted that the spatially constrained scatters of artefacts that he identified “are almost certain to indicate places where people camped and the durable stone artefacts are now all that remains as evidence. It is also notable that their locations are not random – they are placed on level areas and saddles along the ridges. One of these LSA scatters, DAR2011/019 (#026) included a thumbnail scraper indicative of a mid- to late Holocene age. Some of the artefacts here were very black and shiny indicating recent flaking and deposition.” Orton (2012) also identified a number of piled stone structures. These appeared to be concentrated on one particular dolerite ridge and, unlike those from elsewhere in the Karoo, only one may have been a kraal. He determined that these structures are likely to be pre-colonial in age as similar piles have been recorded in an almost certain pre-colonial context in the Seacow River valley (Hart 1989). Orton (2012) also identified a number of engraved rocks that date to the LSA and historical times. All of Orton’s findings (2012) are mapped in Figure 3 and 3b. While these resources fall outside of this development area, they give an indication of the likely archaeological sensitivity of the development area under consideration in this assessment.

A recent field assessment on an adjacent farm conducted by CTS Heritage found that “The overall archaeological sensitivity of the development area with regard to the preservation of Early, Middle and Later Stone Age archaeology as well as Khoe and San heritage, early colonial settlement is regarded as very high. Despite this, the field assessment conducted for this project has demonstrated that the specific area proposed for development has low sensitivity for impacts to significant archaeological heritage.” The report goes on to note that “Two sites warranted protection with an interesting scatter of Still Bay tools on top of a dolerite outcrop with excellent views of the surrounding area. It is highly unlikely this area will be developed and it is recommended that infrastructure is not placed on this outcrop. Another site was found warranting a IIIB rating with pottery, bone and an extensive stone tool assemblage amongst the dolerite outcrops on the eastern end of the property. Again, this site has been demarcated as sensitive and the project team has been advised to avoid this area when finalising the layouts. A minimum buffer of 100m is recommended from this site (Wag n Bietjie 014). The rest of the observations are typical of the area and are ubiquitously distributed in low densities of less than 5 artefacts per observation.” Similar heritage resources are likely to be located within the area proposed for development.

Palaeontology

According to the SAHRIS Palaeosensitivity Map (Figure 4a), the area proposed for development is underlain by sediments of moderate, high and very high paleontological sensitivity. According to the extract from the Council for GeoSciences Map 3024 for Colesburg, the development area is underlain by Jurassic Dolerite, the Tierberg Formation of the Eccca Group and the Adelaide Subgroup of the Beaufort Group as well as Quaternary sands associated with the drainage lines.

As part of the process completed in 2012 for the approved neighbouring Vetlaagte Solar Energy Facility, Almond completed a field-based palaeontological assessment. Almond (2012) found that “The potentially fossiliferous sediments of the Late Palaeozoic Karoo Supergroup (Eccca and Lower Beaufort Groups) that underlie the study area are almost entirely mantled in a thick layer of superficial deposits of probable Pleistocene to Recent age. These include various soils, gravels and – at least in some areas - a well-developed calcrete hardpan. The upper Eccca Group bedrocks in the northern portion of the study area contain locally abundant fossil wood (of palaeontological interest for dating and palaeoenvironmental studies), as well as low diversity non-marine trace fossil assemblages typical of the Waterford Formation, rather than the Tierberg Formation as mapped. No vertebrate fossils and only scattered woody plant impressions of the Permian Glossopteris Flora were observed within the Lower Beaufort Group

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rocks that are very poorly exposed in the southern portion of the Vetlaagte study area. Trace fossils, silicified wood and rare vertebrate remains (therapsids, parareptiles) of the Middle Permian Pristerognathus Assemblage Zone have recently been recorded from this succession in the De Aar region (Almond 2010b). Extensive dolerite sills and dykes of the Early Jurassic Karoo Dolerite Suite intruding the Karoo Supergroup sediments are entirely unfossiliferous, as are rare intrusive kimberlite pipe rocks of Cretaceous age. The diverse superficial deposits within the three study areas (e.g. soils, gravels, alluvium, calcrete hardpans) are of low palaeontological sensitivity as a whole. Abundant fragments of reworked fossil wood material of Ecca provenance occur widely within subsurface and surface gravels overlying the Ecca Group outcrop area.”

Almond (2012) concludes that “The construction of new access roads and transmission lines in this region are likewise considered to be of low significance as far as fossil heritage is concerned... In view of the overall low significance of the proposed development on palaeontological heritage resources, it is concluded that no further palaeontological heritage studies or specialist mitigation are required for these small PV projects, pending the exposure of any substantial fossil remains (e.g. vertebrate bones and teeth, large blocks of petrified wood) during the construction phase.”

RECOMMENDATION

Based on the information available, it is likely that the proposed development will negatively impact on significant archaeological heritage resources and as such, it is recommended that a Heritage Impact Assessment is completed that satisfies section 38(3) of the NHRA and assesses these impacts.

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9. Scoping Assessment

Impact Destruction of significant heritage resources			
Issue	Nature of Impact	Extent of Impact	No-go Areas
Destruction of archaeological heritage	Direct impact to archaeological heritage of scientific significance	Within project boundary	None identified at this stage
Destruction of palaeontological heritage	Direct impact to palaeontological heritage of scientific significance	Within project boundary	None identified at this stage
Negative impact to significant cultural landscapes	Indirect impact to significant cultural landscapes and cultural landscape elements	Regional	None identified at this stage
<p>Description of expected significance of impact Field assessment will determine the significance of the resources likely to be impacted. Impacts can be minimised through the implementation of appropriate mitigation measures.</p>			
<p>Gaps in knowledge & recommendations for further study The project area and the area more broadly have not been subjected to many heritage impact assessments and therefore substantial gaps in knowledge exist. Field assessment will fill these gaps.</p>			
<p>Recommendations with regards to general field surveys Archaeological field surveys must provide sufficient ground-coverage of the areas to be developed to be able to determine the nature of the resources likely to be impacted. Palaeontological and cultural landscape field surveys will target sensitive geological and cultural landscape features.</p>			

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APPENDIX 1

List of built environment and archaeological heritage resources identified within 15km of the development area

Site ID	Site/Observation no.	Full Site Name/Description	Site Type	Grading
33933	DAR2011/004	BADENHORST DAM FARM 2011/004	Artefacts	Grade IIIb
33947	DAR2011/010	BADENHORST DAM FARM 2011/010	Stone walling	Grade IIIb
33955	DAR2011/014	BADENHORST DAM FARM 2011/014	Stone walling	Grade IIIb
33851	DPLE1	DU PLESSIS 1	Palaeontological	Grade IIIb
33852	DPLE2	DU PLESSIS 2	Palaeontological	Grade IIIb
33853	DPLE3	DU PLESSIS 3	Palaeontological	Grade IIIb
33854	DPLE4	DU PLESSIS 4	Palaeontological	Grade IIIb
33855	DPLE5	DU PLESSIS 5	Palaeontological	Grade IIIb
33856	DPLE6	DU PLESSIS 6	Palaeontological	Grade IIIb
33858	DPLE8	DU PLESSIS 8	Palaeontological	Grade IIIb
33887	RNSB244	Renosterburg244	Palaeontological	Grade IIIb
33891	RNSB245	Renosterburg245	Palaeontological	Grade IIIb
35187	EMJ-5	Emthanjeni 5	Palaeontological	Grade IIIb
34597	TBS003	Taaiboschfontein 003	Archaeological, Transport infrastructure	Grade IIIb
34598	TBS002	Taaiboschfontein 002	Structures	Grade IIIb
34603	VLG008	Vetlaagte 008	Palaeontological	Grade IIIb

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33929	DAR2011/001	BADENHORST DAM FARM 2011/001	Stone walling	Grade IIIc
33931	DAR2011/002	BADENHORST DAM FARM 2011/002	Artefacts	Grade IIIc
33932	DAR2011/003	BADENHORST DAM FARM 2011/003	Artefacts	Grade IIIc
33934	DAR2011/005	BADENHORST DAM FARM 2011/005	Stone walling, Artefacts	Grade IIIc
33937	DAR2011/006	BADENHORST DAM FARM 2011/006	Stone walling	Grade IIIc
33941	DAR2011/007	BADENHORST DAM FARM 2011/007	Archaeological	Grade IIIc
33942	DAR2011/008	BADENHORST DAM FARM 2011/008	Stone walling, Artefacts	Grade IIIc
33943	DAR2011/009	BADENHORST DAM FARM 2011/009	Stone walling	Grade IIIc
33950	DAR2011/011	BADENHORST DAM FARM 2011/011	Stone walling	Grade IIIc
33949	DAR2011/012	BADENHORST DAM FARM 2011/012	Stone walling	Grade IIIc
33954	DAR2011/013	BADENHORST DAM FARM 2011/013	Stone walling	Grade IIIc
33956	DAR2011/015	BADENHORST DAM FARM 2011/015	Stone walling	Grade IIIc
33957	DAR2011/016	BADENHORST DAM FARM 2011/016	Stone walling	Grade IIIc
33958	DAR2011/017	BADENHORST DAM FARM 2011/017	Stone walling	Grade IIIc
33951	DAR2011/018	BADENHORST DAM FARM 2011/018	Artefacts	Grade IIIc
33952	DAR2011/019	BADENHORST DAM FARM 2011/019	Artefacts	Grade IIIc
33953	DAR2011/020	BADENHORST DAM FARM 2011/020	Artefacts	Grade IIIc
33948	DAR2011/021	BADENHORST DAM FARM 2011/021	Stone walling	Grade IIIc
33946	DAR2011/022	BADENHORST DAM FARM 2011/022	Archaeological	Grade IIIc

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33945	DAR2011/023	BADENHORST DAM FARM 2011/023	Stone walling	Grade IIIc
33944	DAR2011/024	BADENHORST DAM FARM 2011/024	Building	Grade IIIc
33667	DASE13	De Aar South East 13	Artefacts	Grade IIIc
33668	DASE14	De Aar South East 14	Artefacts	Grade IIIc
33669	DASE15	De Aar South East 15	Artefacts	Grade IIIc
33670	DASE16	De Aar South East 16	Artefacts	Grade IIIc
33651	DASE1	De Aar South East 1	Artefacts	Grade IIIc
33666	DASE12	De Aar South East 12	Artefacts	Grade IIIc
33663	DASE10	De Aar South East 10	Artefacts	Grade IIIc
33671	DASE17	De Aar South East 17	Artefacts	Grade IIIc
33672	DASE18	De Aar South East 18	Artefacts	Grade IIIc
33673	DASE19	De Aar South East 19	Artefacts	Grade IIIc
33674	DASE20	De Aar South East 20	Artefacts	Grade IIIc
33675	DASE21	De Aar South East 21	Artefacts	Grade IIIc
33676	DASE22	De Aar South East 22	Artefacts	Grade IIIc
33677	DASE25	De Aar South East 25	Artefacts	Grade IIIc
33679	DASE26	De Aar South East 26	Artefacts	Grade IIIc
33678	DASE27	De Aar South East 26	Artefacts	Grade IIIc
33653	DASE4	De Aar South East 4	Artefacts	Grade IIIc

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33661	DASE8	De Aar South East 8	Artefacts	Grade IIIc
33664	DASE9	De Aar South East 9	Artefacts	Grade IIIc
33662	DASE7	De Aar South East 7	Artefacts	Grade IIIc
33655	DASE6	De Aar South East 6	Artefacts	Grade IIIc
33914	DPD2011/001	DU PLESSIS DAM 2011/001	Stone walling	Grade IIIc
33915	DPD2011/002	DU PLESSIS DAM 2011/002	Structures, Artefacts	Grade IIIc
33916	DPD2011/003	DU PLESSIS DAM 2011/003	Artefacts, Ruin > 100 years	Grade IIIa
33918	DPD2011/004	DU PLESSIS DAM 2011/004	Artefacts, Ruin > 100 years	Grade IIIa
33919	DPD2011/005	DU PLESSIS DAM 2011/005	Artefacts, Ruin > 100 years	Grade IIIa
33920	DPD2011/006	DU PLESSIS DAM 2011/006	Artefacts	Grade IIIa
33922	DPD2011/007	DU PLESSIS DAM 2011/007	Ruin > 100 years, Artefacts	Grade IIIa
33925	DPD2011/008	DU PLESSIS DAM 2011/008	Ruin > 100 years, Artefacts	Grade IIIa
33927	DPD2011/010	DU PLESSIS DAM 2011/010	Archaeological	Grade IIIa
33928	DPD2011/011	DU PLESSIS DAM 2011/011	Artefacts	Grade IIIa
33930	DPD2011/012	DU PLESSIS DAM 2011/012	Artefacts	Grade IIIc
33935	DPD2011/013	DU PLESSIS DAM 2011/013	Artefacts	Grade IIIc
33936	DPD2011/014	DU PLESSIS DAM 2011/014	Artefacts	Grade IIIc
33938	DPD2011/015	DU PLESSIS DAM 2011/015	Artefacts	Grade IIIc
33939	DPD2011/016	DU PLESSIS DAM 2011/016	Artefacts	Grade IIIc

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33940	DPD2011/017	DU PLESSIS DAM 2011/017	Artefacts	Grade IIIc
33652	DASE2	De Aar South East 2	Artefacts	Grade IIIc
33857	DPLE7	DU PLESSIS 7	Palaeontological	Grade IIIb
33654	DASE5	De Aar South East 5	Artefacts	Grade IIIc
37209	TRANS-ECNC013	Transnet - Eastern Cape, Northern Cape 013	Ruin > 100 years, Artefacts	Grade IIIc
34468	VLG001	VETLAAGTE 1	Artefacts	Grade IIIb
34470	VLG002	Vetlaagte 2	Artefacts	Grade IIIb
34471	VLG003	VETLAAGTE 3	Artefacts	Grade IIIc
34474	VLG004	VETLAAGTE 4	Artefacts	Grade IIIb
34475	VLG005	VETLAAGTE 5	Building	Grade IIIb
34478	VLG006	VETLAAGTE 6	Stone walling	Grade IIIc
35179	EMJ-2	Emthanjeni 1	Palaeontological	Grade IIIb
34604	VLG009	Vetlaagte 009	Palaeontological	Grade IIIc
34605	VLG010	Vetlaagte 010	Palaeontological	Grade IIIc
34606	VLG011	Vetlaagte 011	Palaeontological	Grade IIIc
34607	VLG012	Vetlaagte 012	Palaeontological	Grade IIIc
34608	VLG013	Vetlaagte 013	Palaeontological	Grade IIIc
40830	DAR2011/025	BADENHORST DAM FARM 2011/025	Palaeontological	Grade IIIc
40831	DAR2011/026	BADENHORST DAM FARM 2011/026	Palaeontological	Grade IIIc

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40832	DAR2011/027	BADENHORST DAM FARM 2011/027	Palaeontological	Grade IIIc
40833	DAR2011/028	BADENHORST DAM FARM 2011/028	Palaeontological	Grade IIIc
40834	DAR2011/029	BADENHORST DAM FARM 2011/029	Palaeontological	Grade IIIc
40836	DAR2011/031	BADENHORST DAM FARM 2011/031	Palaeontological	Grade IIIc
40837	DAR2011/030	BADENHORST DAM FARM 2011/030	Palaeontological	Grade IIIc
40838	DAR2011/032	BADENHORST DAM FARM 2011/032	Palaeontological	Grade IIIc
40839	DAR2011/033	BADENHORST DAM FARM 2011/033	Palaeontological	Grade IIIc
40841	DAR2011/035	BADENHORST DAM FARM 2011/035	Palaeontological	Grade IIIc
40842	DAR2011/036	BADENHORST DAM FARM 2011/036	Palaeontological	Grade IIIc
40843	DAR2011/037	BADENHORST DAM FARM 2011/037	Palaeontological	Grade IIIc
40844	DAR2011/038	BADENHORST DAM FARM 2011/038	Palaeontological	Grade IIIc
40845	DAR2011/034	BADENHORST DAM FARM 2011/034	Palaeontological	Grade IIIc
34479	VLG007	VETLAAGTE 7	Burial Grounds & Graves	Grade IIIa
90903	DPD018	Du Plessis Dam 018	Artefacts	Grade IIIc
90904	DPD019	Du Plessis Dam 019	Artefacts	Grade IIIc
90905	DPD020	Du Plessis Dam 020	Artefacts	Grade IIIc
90906	DPD021	Du Plessis Dam 021	Artefacts	Grade IIIc
90907	DPD022	Du Plessis Dam 022	Artefacts	Grade IIIc
90908	DPD023	Du Plessis Dam 023	Artefacts	Grade IIIc

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90909	DPD024	Du Plessis Dam 024	Artefacts	
90910	DPD024	Du Plessis Dam 024	Artefacts	Grade IIIc
90911	DPD025	Du Plessis Dam 025	Artefacts	Grade IIIc
90912	DPD026	Du Plessis Dam 026	Artefacts	Grade IIIc
90913	DPD027	Du Plessis Dam 027	Artefacts	Grade IIIc
90914	DPD028	Du Plessis Dam 028	Artefacts	Grade IIIc
90919	DPD029	Du Plessis Dam 029	Artefacts	Grade IIIc
90920	DPD030	Du Plessis Dam 030	Artefacts	Grade IIIc
90921	DPD031	Du Plessis Dam 031	Artefacts	Grade IIIc
90922	DPD032	Du Plessis Dam 032	Artefacts	Grade IIIc
90923	DPD033	Du Plessis Dam 033	Artefacts	Grade IIIc
90924	DPD034	Du Plessis Dam 034	Artefacts	Grade IIIc
90925	DPD035	Du Plessis Dam 035	Artefacts	Grade IIIc
90926	DPD036	Du Plessis Dam 036	Burial Grounds & Graves	Grade IIIa
90927	DPD037	Du Plessis Dam 037	Archaeological	Grade IIIa
91325	BADE007	Badenhorst PV3/007	Artefacts	Grade IIIc
91326	BADE008	Badenhorst PV3/008	Structures	Grade IIIc
91319	BADE001	Badenhorst PV3/001	Stone walling	Grade IIIc
91320	BADE002	Badenhorst PV3/002	Artefacts	Grade IIIc

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91321	BADE003	Badenhorst PV3/003	Artefacts	Grade IIIc
91322	BADE004	Badenhorst PV3/004	Artefacts	Grade IIIc
91323	BADE005	Badenhorst PV3/005	Artefacts	Grade IIIc
91324	BADE006	Badenhorst PV3/006	Artefacts	Grade IIIb
91328	BADE010	Badenhorst PV3/010	Stone walling	Grade IIIc
91329	BADE011	Badenhorst PV3/011	Structures	Grade IIIc
91330	BADE012	Badenhorst PV3/012	Structures	Grade IIIb
91331	BADE013	Badenhorst PV3/013	Structures	Grade IIIb
91333	BADE015	Badenhorst PV3/015	Artefacts	Grade IIIc
91334	BADE016	Badenhorst PV3/016	Artefacts	Grade IIIc
91335	BADE017	Badenhorst PV3/017	Structures	Grade IIIc
91336	BADE018	Badenhorst PV3/018	Burial Grounds & Graves	Grade IIIc
91337	BADE019	Badenhorst PV3/019	Structures	Grade IIIc
91338	BADE020	Badenhorst PV3/020	Structures	Grade IIIc
91339	BADE021	Badenhorst PV3/021	Artefacts	
91341	BADE022	Badenhorst PV3/022	Artefacts	
91342	BADE023	Badenhorst PV3/023	Artefacts	
91343	BADE024	Badenhorst PV3/024	Artefacts	
91344	BADE025	Badenhorst PV3/025	Artefacts	

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91345	BADE026	Badenhorst PV3/026	Artefacts	
91346	BADE027	Badenhorst PV3/027	Artefacts	
91347	BADE028	Badenhorst PV3/028	Artefacts	
91348	BADE029	Badenhorst PV3/029	Artefacts	
91349	BADE030	Badenhorst PV3/030	Artefacts	
91332	BADE014	Badenhorst PV3/014	Structures	Grade IIIb
132051	DAR2013/001	BADENHORST DAM FARM	Stone walling	Grade IIIb
128603	3024CA/SEF/2012/SA01	Solar Energy Facility- site SA01	Artefacts	
128608	3024CA/DASP/2012/2	De Aar Solar Park- Site 2	Stone walling	Ungraded
128614	3024CA/SEFFDA180/2013/DAR2013/001	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/001	Building	Ungraded
128615	3024CA/SEFFDA180/2013/DAR2013/002	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/002	Artefacts	Ungraded
128616	3024CA/SEFFDA180/2013/DAR2013/003	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/003	Artefacts	Ungraded
128618	3024CA/SEFFDA180/2013/DAR2013/004	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/004	Artefacts	Ungraded
128619	3024CA/SEFFDA180/2013/DAR2013/005	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/005	Artefacts	Ungraded
128620	3024CA/SEFFDA180/2013/DAR2013/013	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/013	Artefacts	Ungraded
128621	3024CA/SEFFDA180/2013/DAR2013/014	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/014	Artefacts	Ungraded
128623	3024CA/SEFFDA180/2013/DAR2013/015	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/015	Artefacts	Ungraded
128624	3024CA/SEFFDA180/2013/DAR2013/016	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/016	Artefacts	Ungraded
128627	3024CA/SEFFDA180/2013/DAR2013/017	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/017	Artefacts	Ungraded

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128628	3024CA/SEFFDA180/2013/DAR2013/018	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/018	Artefacts	Ungraded
128629	3024CA/SEFFDA180/2013/DAR2013/019	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/019	Artefacts	Ungraded
128630	3024CA/SEFFDA180/2013/DAR2013/020	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/020	Artefacts	Ungraded
128631	3024CA/SEFFDA180/2013/DAR2013/021	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/021	Artefacts	Ungraded
128632	3024CA/SEFFDA180/2013/DAR2013/022	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/022	Artefacts	Ungraded
128633	3024CA/SEFFDA180/2013/DAR2013/023	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/023	Artefacts	Ungraded
128634	3024CA/SEFFDA180/2013/DAR2013/024	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/024	Building	Ungraded
128635	3024CA/SEFFDA180/2013/DAR2013/006	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/006	Artefacts	Ungraded
128636	3024CA/SEFFDA180/2013/DAR2013/007	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/007	Artefacts	Ungraded
128637	3024CA/SEFFDA180/2013/DAR2013/008	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/008	Stone walling	Ungraded
128638	3024CA/SEFFDA180/2013/DAR2013/009	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/009	Stone walling	Ungraded
128639	3024CA/SEFFDA180/2013/DAR2013/010	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/010	Artefacts	Ungraded
128640	3024CA/SEFFDA180/2013/DAR2013/011	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/011	Artefacts	Ungraded
128641	3024CA/SEFFDA180/2013/DAR2013/012	Solar Energy Facilities on the Farm De Aar 180- Site DAR2013/012	Artefacts	Ungraded
128642	3024CA/SEFFDA180/2013/DAR2011/001	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/001	Artefacts	Ungraded
128643	3024CA/SEFFDA180/2013/DAR2011/002	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/002	Artefacts	Ungraded
128644	3024CA/SEFFDA180/2013/DAR2011/003	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/003	Artefacts	Ungraded
128645	3024CA/SEFFDA180/2013/DAR2011/004	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/004	Artefacts	Ungraded
128646	3024CA/SEFFDA180/2013/DAR2011/005	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/005	Artefacts	Ungraded

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128647	3024CA/SEFFDA180/2013/DAR2011/006	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/006	Artefacts	
128648	3024CA/SEFFDA180/2013/DAR2011/007	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/007	Artefacts	Ungraded
128650	3024CA/SEFFDA180/2013/DAR2011/008	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/008	Artefacts	Ungraded
128652	3024CA/SEFFDA180/2013/DAR2011/009	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/009	Artefacts	Ungraded
128653	3024CA/SEFFDA180/2013/DAR2011/010	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/010	Artefacts	Ungraded
128654	3024CA/SEFFDA180/2013/DAR2011/011	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/011	Artefacts	Ungraded
128655	3024CA/SEFFDA180/2013/DAR2011/012	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/012	Artefacts	Ungraded
128656	3024CA/SEFFDA180/2013/DAR2011/013	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/013	Artefacts	Ungraded
128657	3024CA/SEFFDA180/2013/DAR2011/014	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/014	Artefacts	Ungraded
128658	3024CA/SEFFDA180/2013/DAR2011/015	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/015	Artefacts	Ungraded
128659	3024CA/SEFFDA180/2013/DAR2011/016	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/016	Stone walling	Ungraded
128660	3024CA/SEFFDA180/2013/DAR2011/017	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/017	Artefacts	Ungraded
128661	3024CA/SEFFDA180/2013/DAR2011/018	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/018	Artefacts	Ungraded
128662	3024CA/SEFFDA180/2013/DAR2011/019	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/019	Artefacts	Ungraded
128663	3024CA/SEFFDA180/2013/DAR2011/020	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/020	Artefacts	Ungraded
128664	3024CA/SEFFDA180/2013/DAR2011/021	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/021	Artefacts	Ungraded
128665	3024CA/SEFFDA180/2013/DAR2011/022	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/022	Artefacts	Ungraded
128666	3024CA/SEFFDA180/2013/DAR2011/023	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/023	Artefacts	Ungraded
128668	3024CA/SEFFDA180/2013/DAR2011/024	Solar Energy Facilities on the Farm De Aar 180- Site DAR2011/024	Building	Ungraded

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128673	3024CA/SEFDPD179/2013/DPD2011/001	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/001	Artefacts	Ungraded
128674	3024CA/SEFDPD179/2013/DPD2011/002	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/002	Artefacts	Ungraded
128675	3024CA/SEFDPD179/2013/DPD2011/003	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/003	Artefacts	Grade IIIa
139253	DP2013/006	DP2013/006	Artefacts	
128676	3024CA/SEFDPD179/2013/DPD2011/004	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/004	Artefacts	Grade IIIa
139254	DP2021/001	DP2021/001	Artefacts	
128677	3024CA/SEFDPD179/2013/DPD2011/005	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/005	Artefacts	Grade IIIa
33926	DPD2011/009	DU PLESSIS DAM 2011/009	Burial Grounds & Graves	Grade IIIa
139255	DP2013/009	DP2013/009	Artefacts	
128678	3024CA/SEFDPD179/2013/DPD2011/006	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/006	Artefacts	Grade IIIa
128679	3024CA/SEFDPD179/2013/DPD2011/007	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/007	Building	Grade IIIa
128680	3024CA/SEFDPD179/2013/DPD2011/008	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/008	Artefacts	Grade IIIa
128681	3024CA/SEFDPD179/2013/DPD2011/009	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/009	Artefacts	Grade IIIa
128682	3024CA/SEFDPD179/2013/DPD2011/010	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/010	Artefacts	Grade IIIa

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128683	3024CA/SEFDPD179/2013/DPD2011/011	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/011	Artefacts	Grade IIIa
128684	3024CA/SEFDPD179/2013/DPD2011/012	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/012	Artefacts	Ungraded
128685	3024CA/SEFDPD179/2013/DPD2011/013	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/013	Artefacts	Ungraded
128686	3024CA/SEFDPD179/2013/DPD2011/014	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/014	Artefacts	Ungraded
128687	3024CA/SEFDPD179/2013/DPD2011/015	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/015	Artefacts	Ungraded
128688	3024CA/SEFDPD179/2013/DPD2011/016	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/016	Artefacts	Ungraded
128689	3024CA/SEFDPD179/2013/DPD2011/017	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2011/017	Artefacts	Ungraded
128690	3024CA/SEFDPD179/2013/DPD2013/001	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2013/001	Artefacts	Ungraded
128691	3024CA/SEFDPD179/2013/DPD2013/002	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2013/002	Artefacts	Ungraded
128692	3024CA/SEFDPD179/2013/DPD2013/003	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2013/003	Artefacts	Ungraded
128693	3024CA/SEFDPD179/2013/DPD2013/004	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2013/004	Artefacts	Ungraded
128695	3024CA/SEFDPD179/2013/DPD2013/006	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2013/006	Artefacts	Ungraded
128696	3024CA/SEFDPD179/2013/DPD2013/007	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site	Artefacts	Ungraded

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		DPD2013/007		
128697	3024CA/SEFDPD179/2013/DPD2013/008	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2013/008	Artefacts	Ungraded
128698	3024CA/SEFDPD179/2013/DPD2013/009	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2013/009	Structures	Ungraded
128699	3024CA/SEFDPD179/2013/DPD2013/010	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2013/010	Artefacts	Ungraded
128701	3024CA/SEFDPD179/2013/DPD2013/011	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2013/011	Artefacts	Ungraded
128704	3024CA/SEFDPD179/2013/DPD2013/012	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2013/012	Artefacts	Ungraded
128705	3024CA/SEFDPD179/2013/DPD2013/013	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2013/013	Artefacts	Ungraded
128706	3024CA/SEFDPD179/2013/DPD2013/014	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2013/014	Artefacts	Ungraded
128707	3024CA/SEFDPD179/2013/DPD2013/015	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2013/015	Artefacts	Ungraded
128708	3024CA/SEFDPD179/2013/DPD2013/016	Solar Energy Facilities on the Farm Du Plessis Dam 179- Site DPD2013/016	Artefacts	Ungraded

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APPENDIX 2

Reference List from SAHRIS

Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title
104574	Heritage Scoping	Wouter Fourie	10/10/2012	Heritage Scoping Report for the Proposed Wind Farm Facility for Renosterberg Wind Energy Company (RWEC) near Petrusville, Northern Cape Province
104576	Heritage Scoping	Wouter Fourie	10/10/2012	Heritage Scoping Report for the Proposed Solar PV Facility for Renosterberg Wind Energy Company (RWEC) near Petrusville, Northern Cape Province
104804	PIA Desktop	John E Almond	01/09/2012	Palaeontological specialist assessment: desktop study PROPOSED RENOSTERBERG SOLAR PV AND WIND ENERGY FACILITIES NEAR DE AAR, NORTHERN CAPE PROVINCE
104804	PIA Desktop	John E Almond	01/09/2012	Palaeontological specialist assessment: desktop study PROPOSED RENOSTERBERG SOLAR PV AND WIND ENERGY FACILITIES NEAR DE AAR, NORTHERN CAPE PROVINCE
109347	AIA Phase 1	David Morris	01/12/2012	ARCHAEOLOGY SPECIALIST INPUT ON THE PROPOSED ACCESS ROAD FOR THE VANDERLINDESKRAAL PHOTOVOLTAIC SITE SITUATED NEAR HANOVER, NORTHERN CAPE
109627	PIA Phase 1	Gideon Groenewald	24/01/2013	PALAEONTOLOGICAL FIELD INVESTIGATION PHASE 1 REPORT FOR THE PROPOSED ACCESS ROAD ON THE REMAINDER OF THE FARM VAN DER LINDES KRAAL NO. 79, HANOVER, NORTHERN CAPE
114648	PIA Desktop	John E Almond	01/09/2012	Palaeontological specialist assessment: desktop study PROPOSED 16 MTPA EXPANSION OF TRANSNET'S EXISTING MANGANESE ORE EXPORT RAILWAY LINE & ASSOCIATED INFRASTRUCTURE BETWEEN HOTAZEL AND THE PORT OF NGQURA, NORTHERN & EASTERN CAPE. Part 1: Hotazel to Kimberley, Northern Cape
125945	AIA Phase 1	Thomas Huffman	31/03/2013	ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE DE AAR PROJECT, NORTHERN CAPE
125963	PIA Desktop	John E Almond		PALAEONTOLOGICAL IMPACT ASSESSMENT: DESKTOP STUDY Proposed windfarm at Maanhaarberg near De Aar, Northern Cape Province
129751	HIA Phase 1	Elize Becker	20/02/2013	Phase 1 Heritage Impact Assessment Hotazel to Kimberley and De Aar to Port of Ngqura
133138	HIA Phase 1	Jayson Orton, Lita	09/07/2013	HERITAGE IMPACT ASSESSMENT FOR MULTIPLE PROPOSED SOLAR ENERGY FACILITIES

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		Webley		
133536	Palaeontological Specialist Reports	John E Almond	01/07/2013	PALAEONTOLOGICAL SPECIALIST STUDY
138865	HIA Phase 1	Jayson Orton	10/07/2013	HERITAGE IMPACT ASSESSMENT FOR MULTIPLE PROPOSED SOLAR ENERGY FACILITIES ON DU PLESSIS DAM 179, DE AAR, NORTHERN CAPE
138940	PIA Phase 1	John E Almond	10/07/2013	Palaeontological Specialist Study: Combined desktop and field-based assessments for the proposed Photovoltaic (Solar) Energy Facilities on Du Plessis Dam Farm near De Aar, Northern Cape
151280	Archaeological Specialist Reports	Jaco van der Walt	26/08/2013	Archeological Scoping Report for the Proposed Castle WEF near De Aar, Northern Cape Province
151284	PIA Desktop	John E Almond	31/08/2013	Palaeontological Heritage Assessment: Desktop Study
155456	Archaeological Specialist Reports	Jonathan Kaplan	20/01/2014	RECOMMENDED EXEMPTION FROM HAVING TO CONDUCT AN ARCHAEOLOGICAL SURVEY OF 67 WIND TURBINES, PROPOSED DE AAR 1 (MAANHAARBERG) WIND ENERGY FARM, DE AAR, NORTHERN CAPE PROVINCE (CaseID 2944)
160512	Archaeological Monitoring	Lita Webley, Dave Halkett	17/03/2014	HERITAGE IMPACT ASSESSMENT: WALKDOWN OF FINAL LAYOUT OF THE LONGYUAN MULILO DE AAR 2 NORTH WIND ENERGY FACILITY, NORTHERN CAPE PROVINCE
163982	Palaeontological Specialist Reports		31/08/2013	Palaeontological specialist assessment: combined desktop and field study: Proposed development PV Solar Facility near De Aar, Northern CApe Province
163994		Wouter Fourie	03/08/2013	Proposed PV Facility: Heritage Impact Report
166300	Archaeological Specialist Reports	Jonathan Kaplan	28/02/2014	Archaeological Impact Assessment: Proposed Construction Yards and Sub Station, Longyuan Mulilo De Aar Wind Energy Facility, Northern Cape.
177599	AIA Phase 1	Jonathan Kaplan	01/04/2010	ARCHAEOLOGICAL IMPACT ASSESSMENT PROPOSED PHOTOVOLTAIC POWER GENERATION FACILITY IN DE AAR NORTHERN CAPE
177600	Site Inspection Report	Will Archer, Jonathan Kaplan	01/05/2012	Reconnaissance and plan for further mitigation: sites impacted on by proposed photovoltaic power generation facility in De Aar Northern Cape

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183142	Archaeological Specialist Reports	Jaco van der Walt	30/10/2014	Archaeological Impact Assessment Report for the Proposed Castle Wind Energy Facility, De Aar, Northern Cape
183143	Heritage Impact Assessment Specialist Reports	Barry Millstead	24/11/2014	Full Palaeontological Heritage Impact Assessment Report on a Portion of a Proposed Wind Energy Generation Facility (The Castle Project); This Being on the Eastern Extent of the Farm Knapdaar 8 near De Aar, Northern Cape Province
256363	Palaeontological Specialist Reports	John Almond	15/06/2013	Palaeontological Specialist Study: Combined Desktop and Field-based Assessments: Proposed Photovoltaic (Solar) Energy Facilities on Du Plessis Dam Farm near De Aar, Northern Cape.
256364	Heritage Impact Assessment Specialist Reports	Jayson Orton	10/07/2013	Heritage Impact Assessment for Multiple Proposed Solar Energy Facilities on Du Plessis Dam 179, De Aar, Northern Cape
256408	Palaeontological Specialist Reports	John E Almond	16/07/2013	Palaeontological Specialist Study: Combined Desktop and Field-based Assessments - Proposed Photovoltaic (Solar) Energy Facilities on Badenhorst Dam Farm near De Aar, Northern Cape
256413	Heritage Impact Assessment Specialist Reports	Jayson Orton	09/07/2013	Heritage Impact Assessment for Multiple Proposed Solar Energy Facilities on De Aar 180/1 (Badenhorst Dam Farm), De Aar, Northern Cape
26827	AIA Phase 1	William Archer	01/06/2012	Archaeological Impact Assessment: proposed photovoltaic power generation facility in De Aar, Northern Cape
339820	Heritage Impact Assessment Specialist Reports	Lita Webley, Jayson Orton	01/12/2011	Proposed De Aar Wind Energy Facility on the North and South Plateau, Northern Cape Province
339824	Heritage Impact Assessment Specialist Reports	Lita Webley, David Halkett	01/06/2015	Addendum: Proposed Wind Energy Facility situated on the Eastern plateau (South) near De Aar, Northern Cape Province.
4052	HIA Phase 1	Albert van Jaarsveld	01/03/2006	Hydra-Perseus and Beta-Perseus 765 kV Transmission Power Lines Environmental Impact Assessment. Impact on Cultural Heritage Resources
45021	HIA Phase 1	Wouter Fourie	13/04/2012	CONCENTRATED SOLAR POWER EIA – DE AAR Heritage Impact Assessment
49745	AIA Phase 1	Neels Kruger	01/03/2012	ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) OF DEMARCATED SURFACE AREAS ON THE OF THE FARM VETLAAGTE

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49843	PIA Phase 1	John E Almond	01/05/2012	PALAEONTOLOGICAL SPECIALIST STUDY: COMBINED DESKTOP AND FIELD-BASED ASSESSMENTS Proposed solar power generation facilities on the remaining extent of the farm Vetlaagte No. 4, De Aar, Northern Cape Province
50006	HIA Phase 1	Jayson Orton	20/02/2012	HERITAGE IMPACT ASSESSMENT FOR THREE SOLAR ENERGY FACILITIES AT DE AAR, WESTERN CAPE
53198	HIA Phase 1	Elize Becker	20/04/2012	Phase 2 Heritage Impact Assessment De Aar Solar One Photovoltaic Power Project Heritage Impact Assessment Phase 2
53200	Heritage Scoping	Elize Becker	18/01/2012	HERITAGE IMPACT ASSESSMENT SCOPING REPORT Prepared for De Aar Solar One Photovoltaic Power Plant, Northern Cape
58989	PIA Desktop	James Brink	10/08/2012	A Palaeontological Desktop Study of the Area to be Affected by the Proposed Photovoltaic Power Project on Portion 3 of Farm Hartebeestplaats 135
6475	AIA Phase 1	Jonathan Kaplan	10/10/2010	ARCHAEOLOGICAL IMPACT ASSESSMENT OF A PROPOSED WIND ENERGY FACILITY NEAR De Aar, Northern Cape
6970	AIA Phase 1	David Morris	02/09/2011	Paarde Valley. Ilanga Lethemba PV Solar Energy Facility. Specialist input for the environmental impact assessment phase and environmental management programme for the proposed Ilanga Lethemba Solar Energy Facility, near De Aar, Northern Cape province
6970	AIA Phase 1	David Morris	02/09/2011	Paarde Valley. Ilanga Lethemba PV Solar Energy Facility. Specialist input for the environmental impact assessment phase and environmental management programme for the proposed Ilanga Lethemba Solar Energy Facility, near De Aar, Northern Cape province
6971	AIA Desktop	Johnny Van Schalkwyk	30/04/2011	Heritage Impact Scoping report for the proposed establishment of the Ilanga Lethemba PV Solar Energy Facility, near De Aar, Northern Cape Province.
7020	AIA Phase 1	David Morris	03/09/2011	Archaeology specialist input on the site of the proposed Kalkbult Photovoltaic construction site north of De Aar, Northern Cape
7243	AIA Desktop	Jonathan Kaplan	08/04/2010	ARCHAEOLOGICAL SCOPING STUDY OF A PROPOSED WIND ENERGY FACILITY ON THE MAANHAARBERGE & KOMBUISFONTEINBERGE DE AAR NORTHERN CAPE
7368	AIA Phase 1	William Archer	18/05/2012	Archer, W. May 2012. RECONNAISSANCE AND PLAN FOR FURTHER MITIGATION: SITES IMPACTED ON BY PROPOSED PHOTOVOLTAIC POWER GENERATION FACILITY IN DE AAR NORTHERN CAPE

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7634	AIA Phase 1	Jonathan Kaplan	08/04/2010	ARCHAEOLOGICAL IMPACT ASSESSMENT PROPOSED PHOTOVOLTAIC POWER GENERATION FACILITY IN DE AAR NORTHERN CAPE
8023	AIA Phase 1	David Morris	03/09/2011	Archaeology specialist input on the site of the proposed Taaiboschfontein Photovoltaic construction site between De Aar and Hanover, Northern Cape
8023	AIA Phase 1	David Morris	03/09/2011	Archaeology specialist input on the site of the proposed Taaiboschfontein Photovoltaic construction site between De Aar and Hanover, Northern Cape
8023	AIA Phase 1	David Morris	03/09/2011	Archaeology specialist input on the site of the proposed Taaiboschfontein Photovoltaic construction site between De Aar and Hanover, Northern Cape
8023	AIA Phase 1	David Morris	03/09/2011	Archaeology specialist input on the site of the proposed Taaiboschfontein Photovoltaic construction site between De Aar and Hanover, Northern Cape
8167	AIA Phase 1	David Morris	03/09/2011	Archaeology specialist input on the site of the proposed Vanderlindeskraal Photovoltaic construction site near Hanover, Northern Cape
8378	HIA Phase 1	Jayson Orton	29/02/2012	HIA for three solar energy facilities at the De Aar, Northern Cape (Paarde Valley, Badenhorst Dam Farm and Annex Du Plessis Dam Farm)
8493	HIA Phase 1		28/02/2011	CULTURAL HERITAGE REVIEW OF PROPOSED ESTABLISHMENT OF PHOTO VOLTAIC (SOLAR POWER) PANELS ON THE FARM TAAIBOSCHFONTEIN, NO 41, HANOVER DISTRICT, NORTHERN CAPE
8512	HIA Phase 1		03/09/2011	Cultural Heritage Review Of Proposed Establishment Of Photo Voltaic (Solar Power) Panels On The Farm Taaiboschfontein, No 41, Hanover District, Northern Cape
8523	HIA Phase 1		03/08/2011	Annexure 2 Cultural heritage Survey of sites for the Solar Power Project Report: Farm Vanderlindeskraal no 79, Northern Cape Province
89361	HIA Phase 1	Neels Kruger	01/03/2012	ENNEX DEVELOPMENTS: PROPOSED ESTABLISHMENT OF A SOLAR ENERGY FACILITY NEAR DE AAR, NORTHERN CAPE PROVINCE Phase 1 Archaeological Impact Assessment Report
8992	PIA Phase 1	John E Almond	29/01/2012	Palaeontological Specialist Study: Combined Desktop and Field -based Assessments. Two wind energy facilities on the Eastern Plateau near De Aar, Northern Cape Province proposed by Mulilo Renewable Eneergy (Pty) Ltd

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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 (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

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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

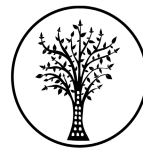
(2) The heritage resources and the area proposed for development are only partially recorded - The surveys undertaken in the area have not adequately captured the heritage resources and/or there are sites which require mitigation or management plans. Further specific heritage work is recommended for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

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