CTS HERITAGE

HERITAGE SCREENER

CTS Reference Number:	**CTS20_202_3**
SAHRIS Reference:	**15720**
Client:	**Savannah Environmental (Pty) Ltd**
Date:	**January 2021**
Title:	**HERITAGE SCREENING ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF KOTULO TSATSI ENERGY PV 3 NEAR KENHARDT, NORTHERN CAPE**

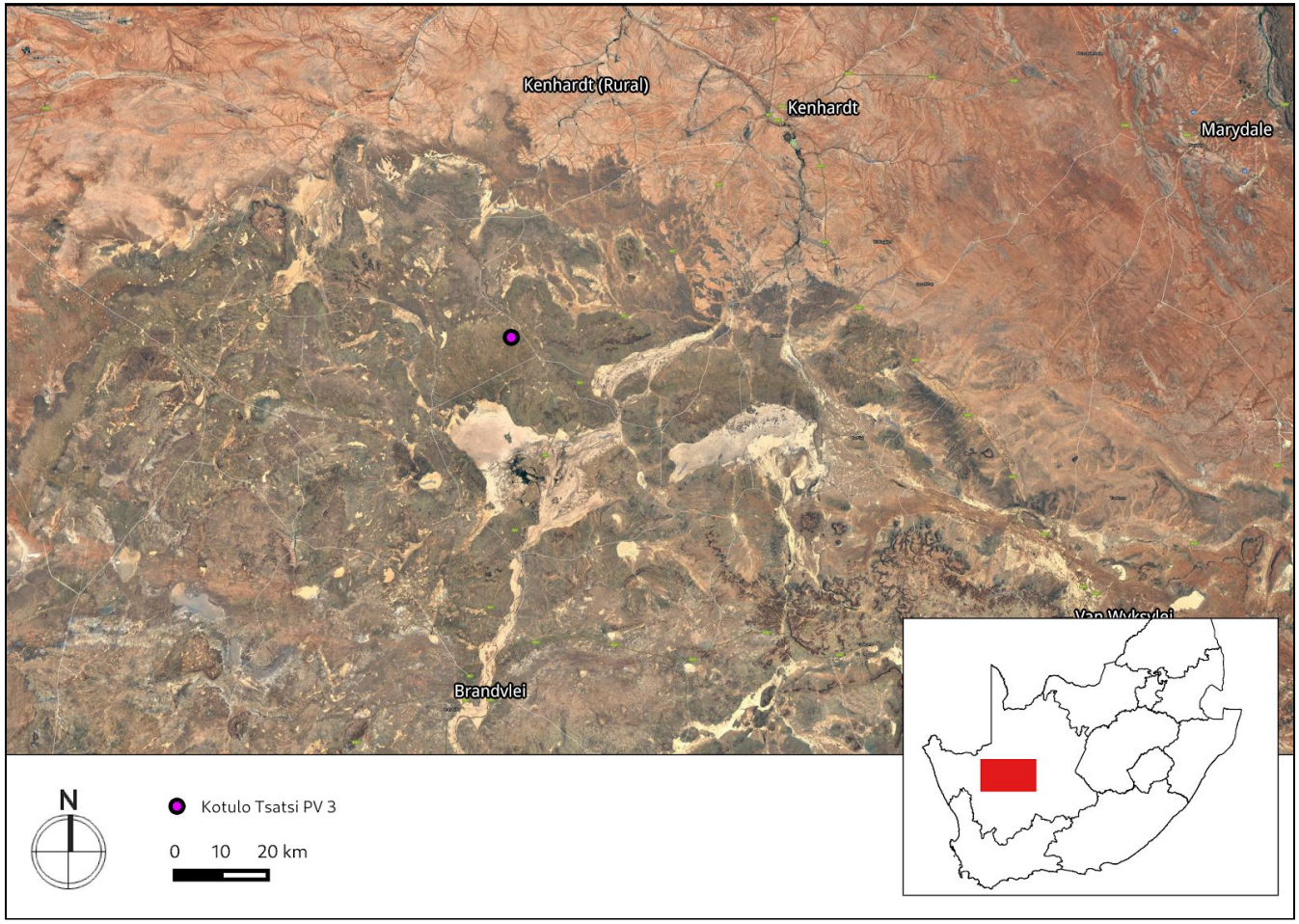

Figure 1a. Satellite map indicating the location of the proposed development in the Northern Cape

RECOMMENDATION

Based on the information available, the proposed development is likely to impact a significant cultural landscape as well as archaeological resources in the form of engraved rock art. As such, it is recommended that an HIA be conducted that assesses such impacts. Furthermore, it is recommended that the HIA include a Chance Fossil Finds Procedure to be implemented for all deep bedrock excavations.

CTS Heritage
16 Edison Way, Century City, Cape Town
Tel: +27 (0)87 073 5739 **Email:** info@ctsheritage.com **Web:** www.ctsheritage.com

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1. Proposed Development Summary

The Applicant, Kotulo Tsatsi Energy (Pty) Ltd, is proposing the construction of a photovoltaic (PV) solar energy facility (known as the Kotulo Tsatsi Energy PV3) located on a site located approximately 70km south-west of the town of Kenhardt and 60km north east of Brandvlei in the Northern Cape Province. The solar energy facility will comprise several arrays of PV panels and associated infrastructure and will have a contracted capacity of up to 200MW. The facility will be located within the farm Portion 2 of Farm Styns Vley 280. The PV facility is planned to be located adjacent to the authorised 100MW Kotulo Tsatsi PV2 facility, and within an area previously authorised for CSP project infrastructure. The project site 1 falls under the Hantam Local Municipality which is part of Namakwa District Municipality. The site is accessible via an existing gravel farm road (known as Soafskolk Road) which provides access to the farm off of the R27 which is located east of the project site.

The PV infrastructure assessed in this application is in response to the Applicant's need to change the authorised generation technology for the facility located on the farm Portion 2 of Farm Styns Vely 280. That is, a technology change from the previously authorised CSP project infrastructure to PV project infrastructure. In this regard, the solar PV facility will be connected to the grid via a previously authorised grid connection solution 2, which consists of a collector substation, switching station and a power line to the Eskom Aries Substation located north-east of the project site.

Kotulo Tsatsi Energy PV3 is planned to be bid into the Department of Mineral Resources and Energy's (DMRE) Renewable Energy Independent Power Producer Procurement (REIPPP) 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 with Kotulo Tsatsi Energy PV3 set to inject up to 200MW AC into the national grid. Two (2) additional 200MW PV facilities (Kotulo Tsatsi Energy PV1 and Kotulo Tsatsi Energy PV4) are concurrently being considered adjacent to the project site (on Portion 2 of Farm Kopjes Vley 281, and Portion 3 of Farm Styns Vley 280) and are to be assessed through separate Environmental Impact Assessment (EIA) processes.

A development envelope of ~951ha was defined through the Scoping evaluation of the site, and has now been assessed for the project which includes the PV infrastructure required to generate 200MW of electricity. The infrastructure to be developed within the development envelope will be known as the development footprint and will have an extent of ~944ha. The infrastructure associated with this PV development includes:

» Solar PV array footprint comprising of:
- PV modules and mounting structures
- Inverters and transformers
- Integrated Energy Storage System (IESS)
- Cabling between the project components
- Internal access roads

» Access roads, internal distribution roads and fencing around the development footprint

» Admin block comprising of:
- Site offices and maintenance buildings, including workshop areas for maintenance and storage.
- Assembly plant
- Laydown areas

The assessment of the PV facility on the site is to support the technology change from the previously authorised CSP project infrastructure to PV project infrastructure. In this regard, the following previously authorised infrastructure will be retained for use for the planned PV facility, and the associated footprint areas of the following previously authorised infrastructure have not been reassessed in this EIA:

» Complete grid connection to Aries Substation:

- Grid connection via a previously authorised grid connection solution, which consists of internal grid reticulation, a collector substation, switching substation and a power line to the Eskom Aries Substation located north-east of the project site.

2. Application References

Name of relevant heritage authority(s)	SAHRA
Name of decision making authority(s)	Department of Environment, Fisheries and Forestry (DEFF).

3. Property Information

Latitude / Longitude	29°47'25.58"S 20°34'23.36"E
Erf number / Farm number	Portion 2 of Farm Styns Vley 280
Local Municipality	Hantam Local Municipality
District Municipality	Namakwa District Municipality
Province	Northern Cape
Current Use	Grazing (mainly cattle)
Current Zoning	Agriculture
Extent of Project Area	~4935ha

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4. Nature of the Proposed Development

Total Area	Approximately 944ha
Depth of excavation (m)	Up to 2m
Height of development (m)	Up to 2.5m

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
	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
	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

- facility man camp (including on-site accommodation),
- all water reservoirs and pipelines,
- power block and thermal storage solution.

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

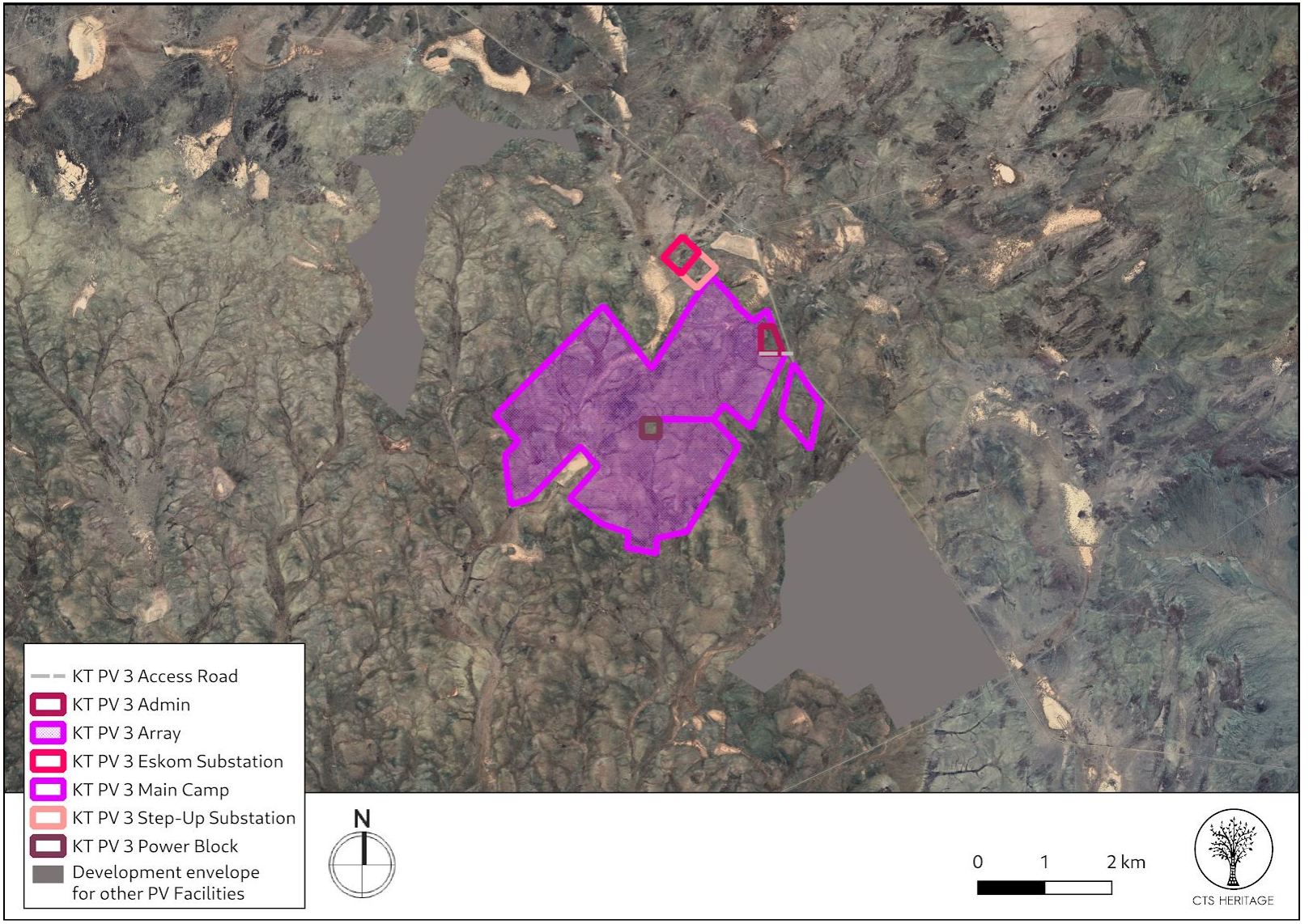

Figure 1b. Overview Map. Satellite image (2020) indicating the proposed development area relative to other proposed Solar Energy Facilities

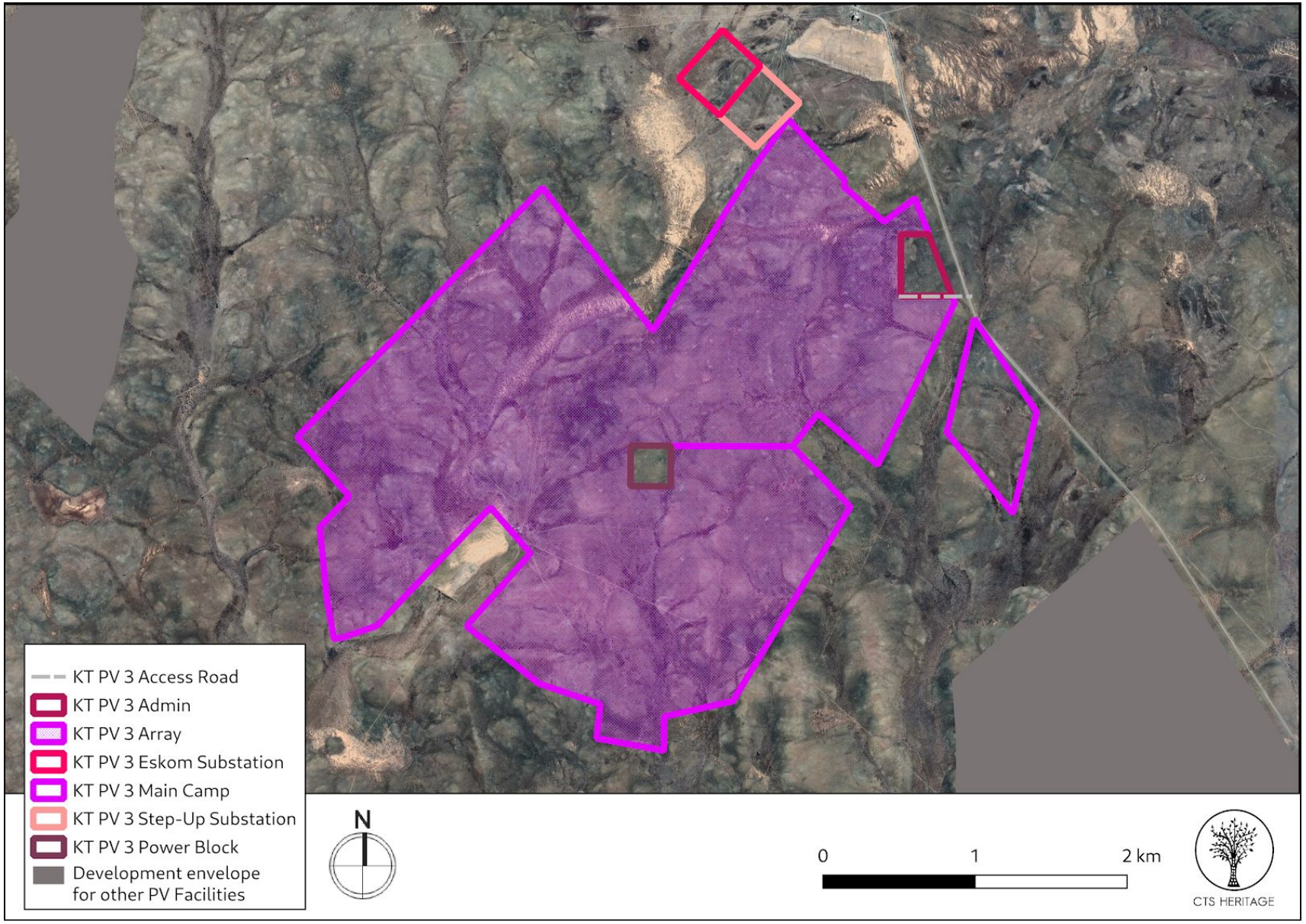

Figure 1c. Overview Map. Satellite image (2020) indicating the proposed development area

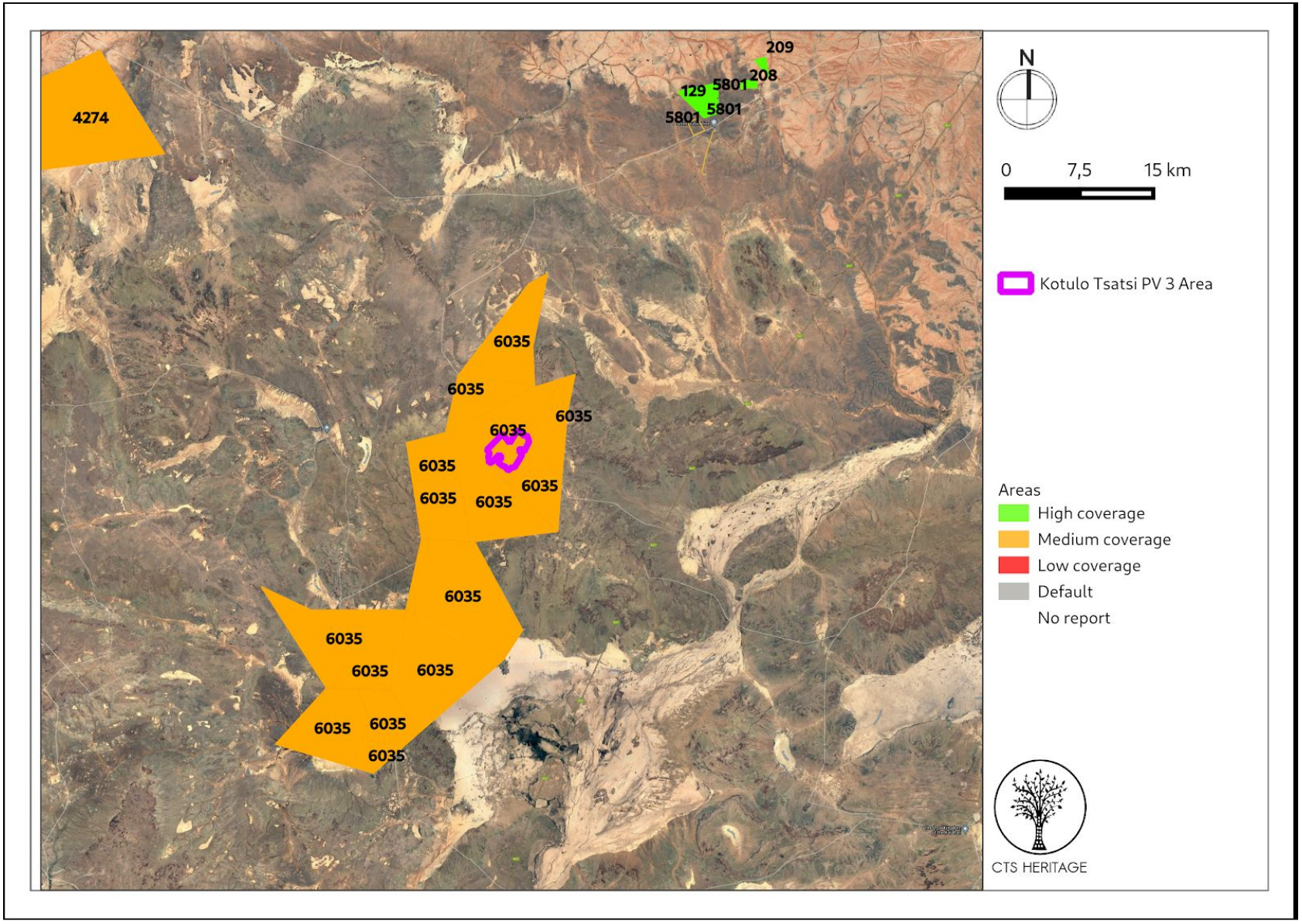

Figure 2. Previous HIAs Map. Previous Heritage Impact Assessments covering the proposed development area with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.

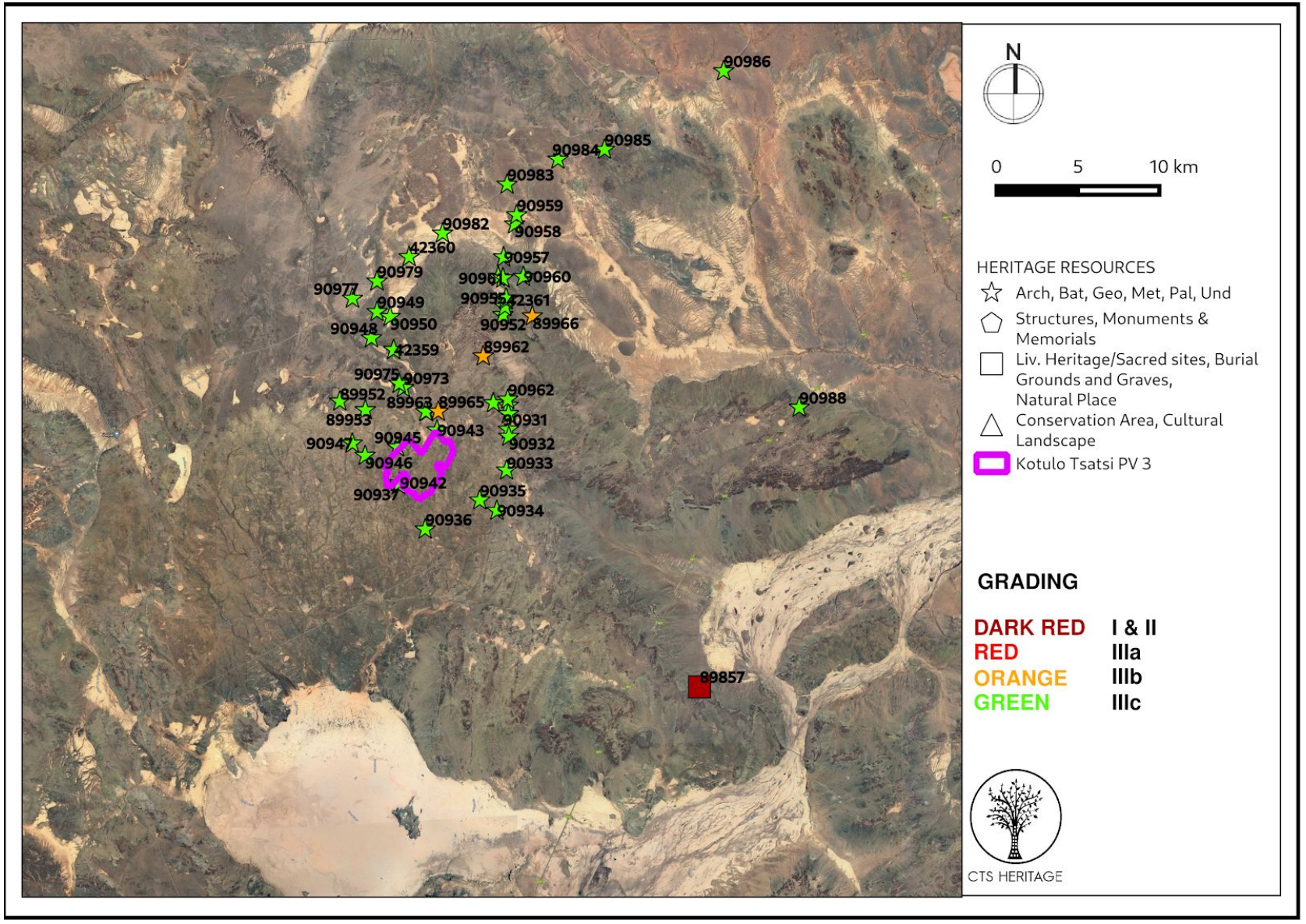

Figure 3. Heritage Resources Map. Heritage Resources previously identified within the study area, with SAHRIS Site IDs indicated in the insets below. Please See Appendix 4 for full description of heritage resource types.

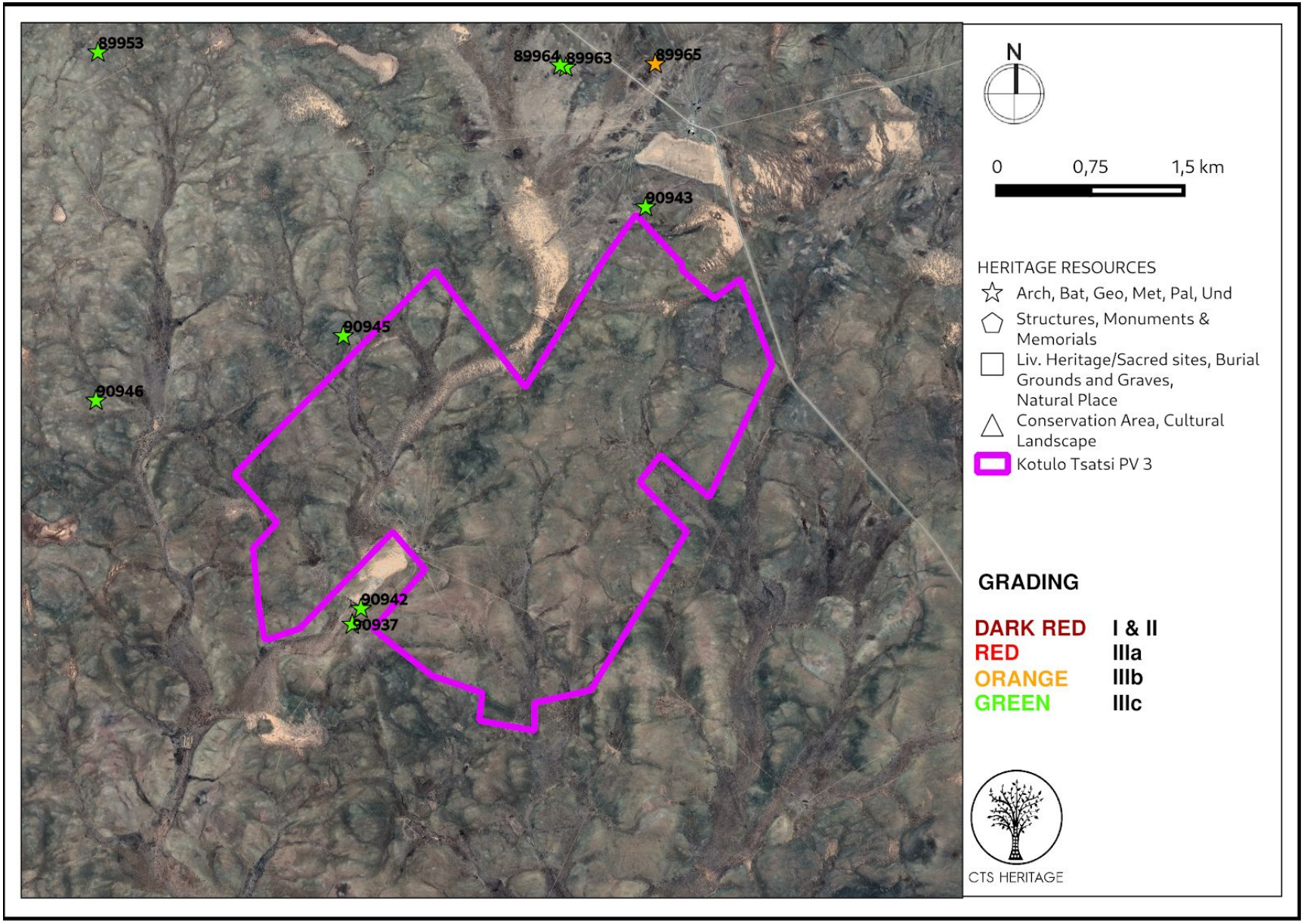

Figure 3a. Heritage Resources Map Inset A

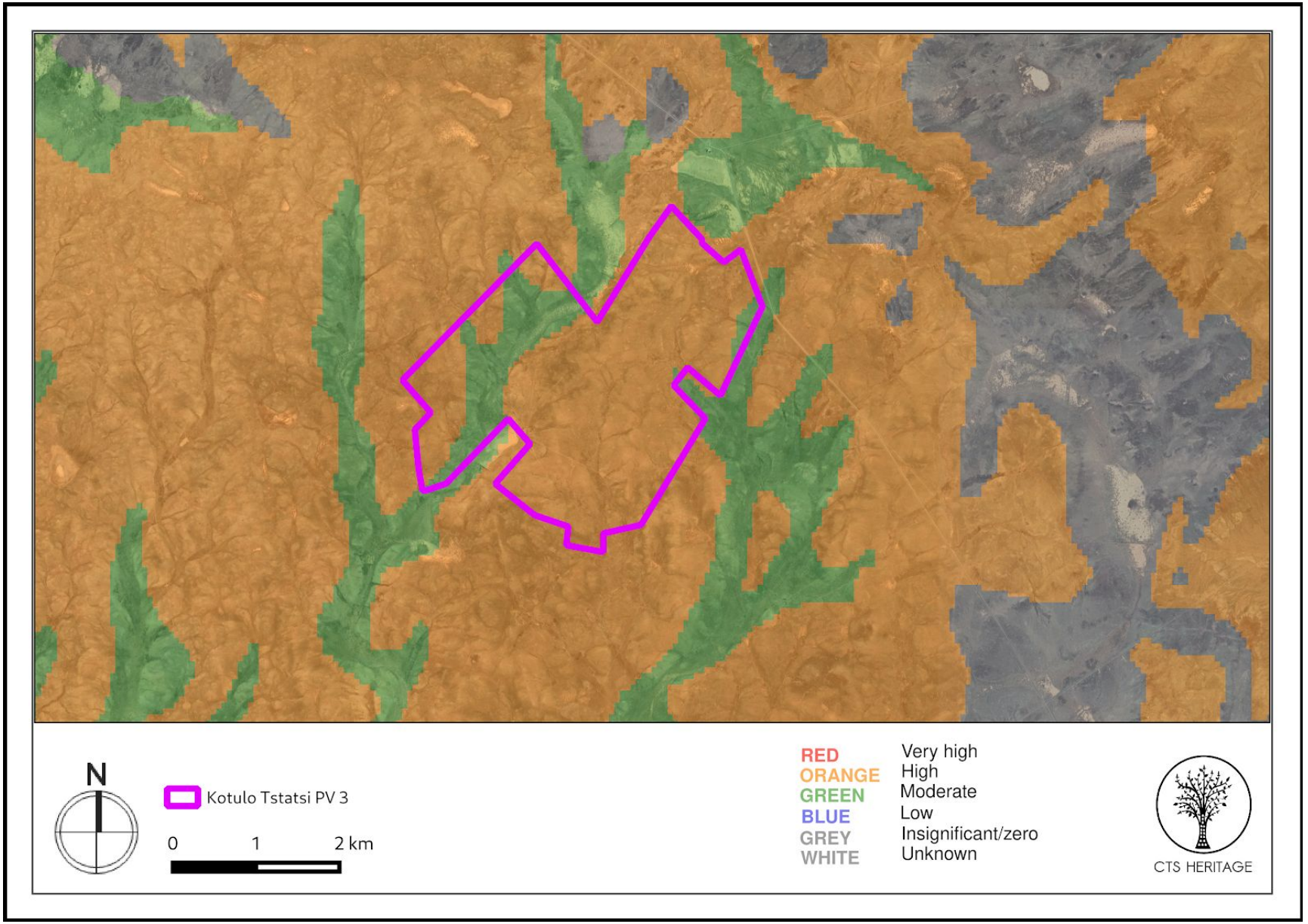

Figure 4a. Palaeosensitivity Map. Indicating fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.

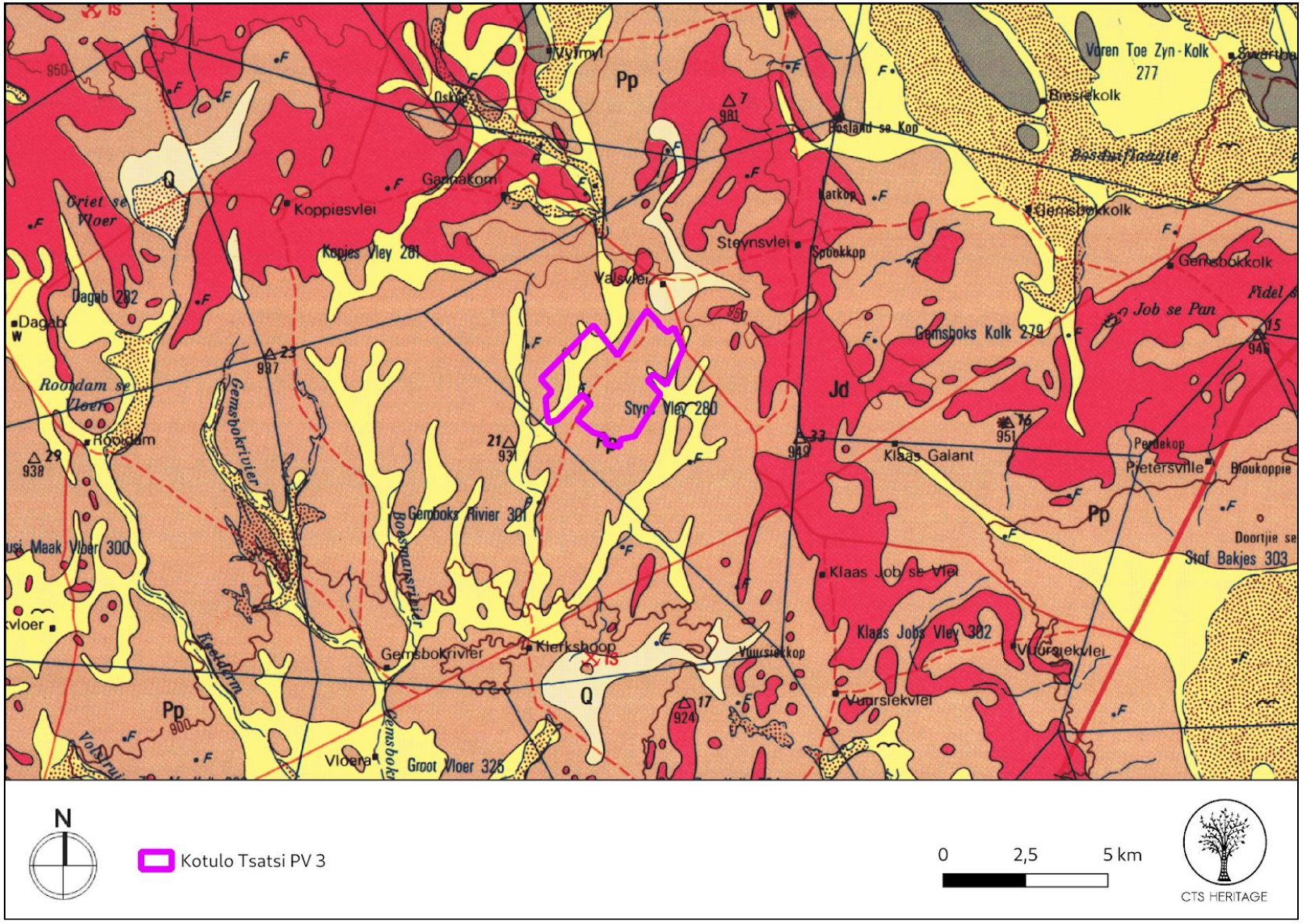

Figure 4b. Geology Map. Extract from the CGS 2920 Kenhardt Map indicating that the development area for development is underlain by Pp: Prince Albert Formation of the Ecca Group and Quaternary Sands (yellow)

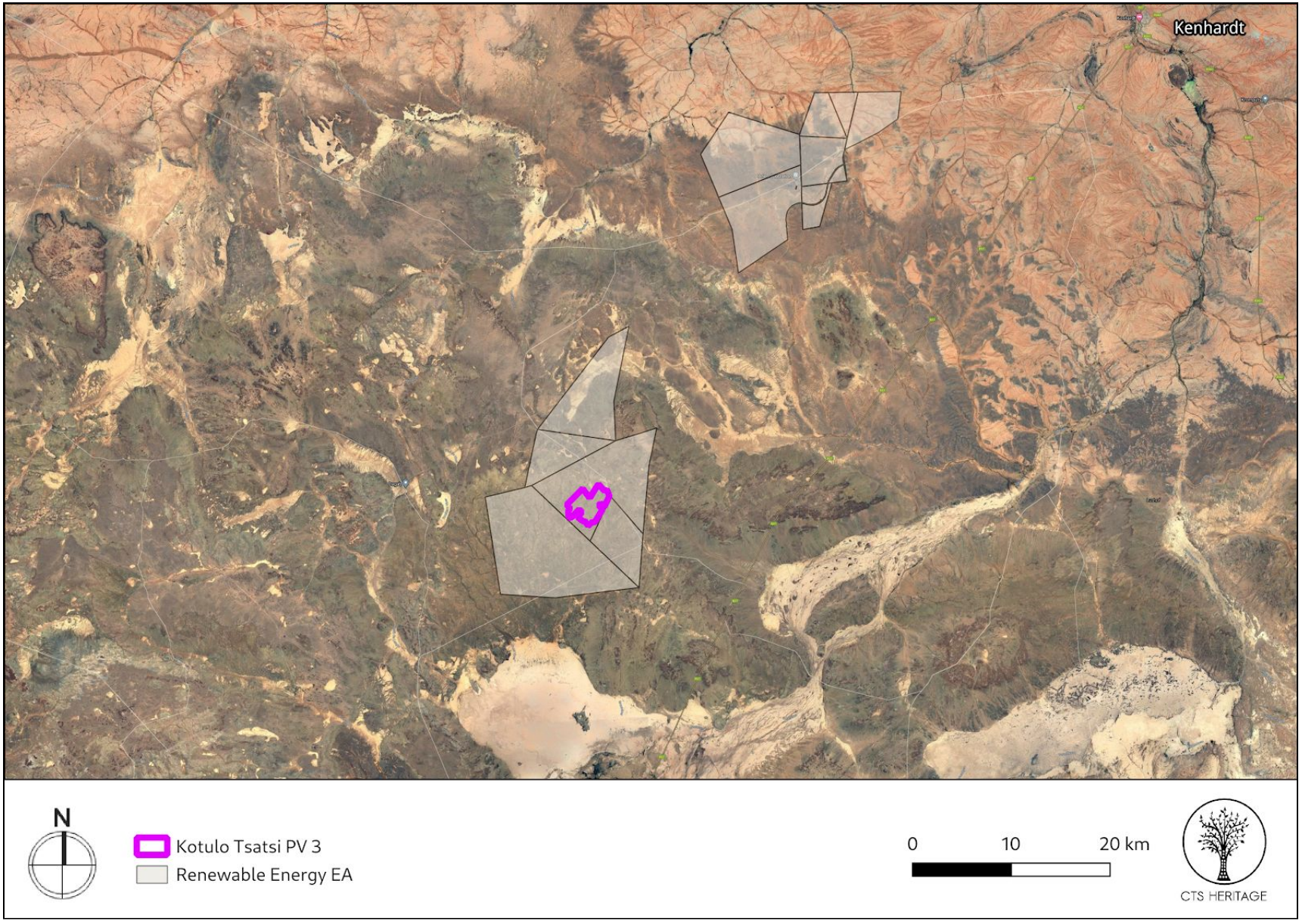

Figure 5. Cumulative Impact Map. Map indicating all of the authorised renewable energy facilities (as of 2018) in proximity to the proposed development

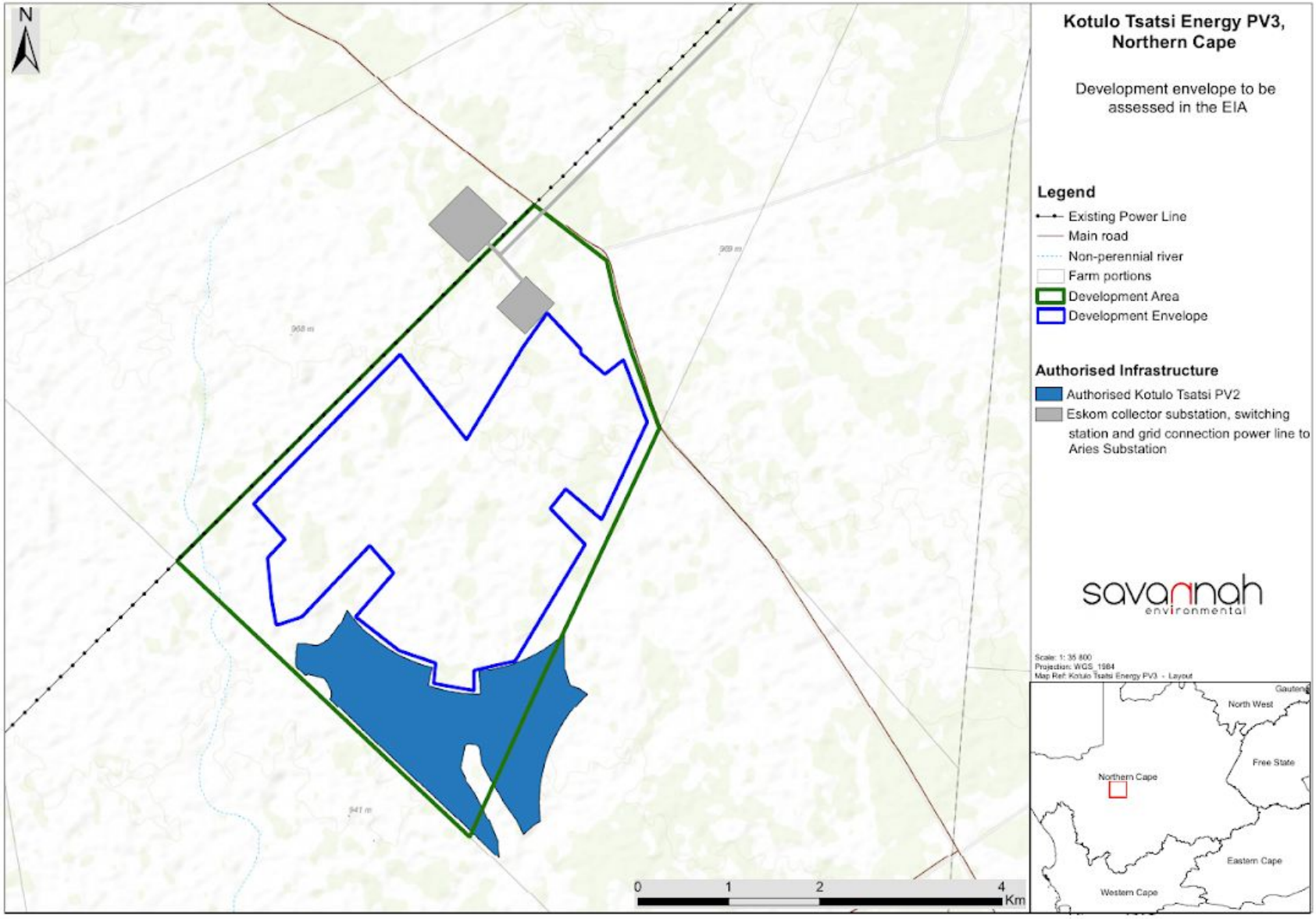

Figure 6. Map of development area. Relative to the previously authorised Kotulo Tstatsi PV2 project

8. Heritage Assessment

Background

The area proposed for development is located approximately halfway between Kenhardt and Brandvlei in the Northern Cape. In 2015, a process was followed to secure authorisation for the proposed development of a concentrated solar plant and associated infrastructure with a generating capacity of up to 200MW to be located on the farm Styns Vley 280. As part of this previous process, various archaeological specialist assessments (Van der Walt, 2014, SAHRIS NID 169885, 6035) and palaeontological specialist assessments (Almond, 2015, SAHRIS NID 340296), each with fieldwork components, were completed. The location of the proposed development of the Kotulo Tstatsi PV 3 assessed in this desktop report overlaps with the area assessed previously. As such, the reports previously drafted by Van der Walt and Almond are referred to below in order to inform this desktop screening assessment.

Cultural Landscape

According to Gaigher (2012, SAHRIS ID 34135), prior to colonial settlement, this area was occupied by the Korana who had been forced to the outskirts of the Cape Colony along the Gariep River. In 1868, colonial forces were sent to deal with the conflicts arising with the Korana. The colonial forces set up camp beneath a camelthorn tree and with time the town of Kenhardt developed from under this tree, becoming a municipality in 1909. When this area was eventually settled by colonists, war broke out between the colonial settlers and the Korana, who were then dispursed upon their defeat. Kenhardt has for a long time been the most remote settlement in the Northern Cape.

The area between Kenhardt and Brandvlei has previously been described as “a huge landscape of nothingness”, however this is misleading as this area was occupied for thousands of years by the Korana and their ancestors. Evidence of this is available in the distribution of stone age artefacts across the landscape, the rock engravings known from this area located on dolerite boulders that occur throughout the region between Kenhardt, Brandvlei and Vanwyksvlei. as well as in the accounts of Khoe and San culture available from the interviews by Bleek and Lloyd with /Xam men from the Kenhardt district (Deacon, 1997; Beaumont and Vogel, 1989; Skinner, 2017). Deacon (1997) notes that “the symbolism (of the /Xam) tends to be earth-bound in linking people to the land through ritual. The importance of the landscape can also be seen in the personification of geographical features through myths and legends that explain their form. As I have suggested elsewhere, rock art enhanced this symbolic linkage by marking those landscape features that were used in rituals over many generations”.

According to Deacon (1997), “The landscape of the Upper Karoo where the /Xam lived appears to the stranger to be flat, and indeed the /Xam who lived between Kenhardt and Vanwyksvlei called themselves the "Flat Bushmen". To find one's way it is often necessary to climb a vantage point and such points are offered by dolerite dykes that snake across the plains.” Such a dolerite outcrop is located in the eastern section of the proposed development area (Figure 4b). According to Deacon (1997), these dolerite outcrops may have provided protection from the wind and scatters of artefacts can be found there confirming that people made use of them. Furthermore, Deacon (1997) posits that these dolerite hills were strongly culturally linked to rain-making activities, and may have played a role in men’s initiation.

Archaeology and the Built Environment

Many farm portions in the immediate vicinity of the area proposed for development have been assessed in terms of impacts to heritage resources (Figure 2). Based on the outcomes of these assessments, it is noted that most of the heritage resources identified are stone age artefact scatters of varying significance. Van der Walt completed two field assessments immediately adjacent to the proposed development area (2015, SAHRIS NID 6035 and 2017, SAHRIS NID 397221). While Van der Walt (2015) had anticipated that quantities of Early, Middle and Later Stone Age artefacts would be present within the area surveyed, he noted a marked paucity of sites resulting from systematic field survey. He noted that “In fact no Stone Age sites (knapping, quarry or habitation site) were recorded. Stone Age Material was restricted to isolated widely dispersed low density scatters (less than 2 artefacts per m²)”.

With regard to the farm Steyns Vley 280, Van der Walt (2017) notes “In the study area there were only a few areas where surface material was noted. Artefact density is so low that they do not represent individual sites but rather background scatter or find spots. All observations are on the surface and there are no indicators that would suggest deeply stratified material anywhere in the study area. No associated organic remains (such as bone or ostrich eggshell) were noted with any of the stone scatters. Most of the material observed can

probably be ascribed to the Middle Stone Age although some can be ascribed to the LSA and are smaller in size (< 5 cm in length). Miscellaneous Flakes, blades and chunks make up the majority of the scatters, and retouch was present on some items. The most predominant raw material was grey/white quartzite, although hornfel, banded ironstone and quartz were also recorded." He further indicates that widely distributed stone artefacts were noted across the farm Steyns Vley 280.

Van der Walt (2015) identified a site known as "Site 3" located on the farm Steyn's Vley 280. This site consists of a farm house and associated outbuildings as well as a grave/memorial dated to 2010. This site was determined to have little to no heritage significance. Van der walt (2015) and (2017) makes no recommendations in terms of mitigating impacts to any of the resources identified. As such, while the presence of low density scatters of stone age, likely Middle Stone Age, artefacts across the study area is almost guaranteed, these observations are of low heritage significance and are unlikely to warrant mitigation interventions.

However, based on the proximity of the proposed development area to a dolerite outcrop, and the likelihood of impacts to significant engraved rock art as well as other elements of the cultural landscape, it is recommended that a further specialist archaeological assessment be undertaken.

Palaeontology

According to the SAHRIS Palaeosensitivity Map (Figure 4a), the area proposed for development is underlain by sediments of moderate and high sensitivity for impacts to palaeontological heritage. According to the extract from the Council of GeoScience Map 2920 for Kenhardt (Figure 4b), the area proposed for development is underlain by sediments from the Prince Albert Formation from the Ecca Group which have high palaeontological sensitivity. Impacts to palaeontology for the proposed Kotulo Tsatsi Solar Reserve, which overlaps the proposed development area, were assessed by Almond (2015, SAHRIS NID 340296) and as such, his findings for Farm Styns Vley 280 are pertinent to this application.

Almond (2015) found that "Desktop analysis of the fossil records of the various sedimentary rock units underlying the broader Solar Reserve Kotulo Tsatsi Energy study area, including the solar energy facility development area and transmission/distribution overhead power line corridor, combined with field assessment of numerous representative rock exposures within and close to this area, indicate that all of these units are of low to very low palaeontological sensitivity. The potentially fossiliferous Karoo Supergroup bedrocks (Dwyka and Ecca Groups) are deeply weathered and extensively calcretised near-surface. Over the majority of their outcrop areas the bedrocks are mantled by various superficial deposits that may reach thicknesses of several meters and that are of low palaeontological sensitivity." Two palaeontological sites are present within the proposed development area assessed in this report - SAHRIS Site ID 90937 and 90942, each graded IIIC, however Almond (2015) does not recommend any mitigation in terms of impact to these resources. Amond (2015) further recommends that "During the construction phase all deeper (> 1 m) bedrock excavations should be monitored for fossil remains by the responsible ECO. Should substantial fossil remains such as vertebrate bones and teeth, plant-rich fossil lenses or dense fossil burrow assemblages be exposed during construction, the responsible Environmental Control Officer should safeguard these, preferably in situ, and alert SAHRA. Based on the work completed by Almond (2015) for this area, it is recommended that no further palaeontological assessment is necessary, but that the attached Chance Fossil Finds Procedure be implemented for all deep bedrock excavations.

RECOMMENDATION

Based on the information available, the proposed development is likely to impact a significant cultural landscape as well as archaeological resources in the form of engraved rock art. As such, it is recommended that an HIA be conducted that assesses such impacts. Furthermore, it is recommended that the HIA include a Chance Fossil Finds Procedure to be implemented for all deep bedrock excavations.

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APPENDIX 1

List of heritage resources within close proximity to the development area

Site ID	Site no	Full Site Name	Site Type	Grading
42359	KOT01	Kotulo 01	Palaeontological	Grade IIIc
42360	KOT02	Kotulo 02	Palaeontological	Grade IIIc
42361	KOT03	Kotulo 03	Palaeontological	Grade IIIc
89857	Klein Mummenkop	Klein Mummenkop (place marked on Bleek map)	Place	Grade II
89952	KOT04	Kotulo 04	Artefacts	Grade IIIc
89953	KOT05	Kotulo 05	Artefacts	Grade IIIc
89962	KOT08	Kotulo 08	Artefacts	Grade IIIb
89963	KOT09	Kotulo 09	Artefacts	Grade IIIc
89964	KOT10	Kotulo 10	Artefacts	Grade IIIc
89965	KOT11	Kotulo 11	Artefacts	Grade IIIb
89966	KOT12	Kotulo 12	Stone walling	Grade IIIb
90928	WOL001	Palaeo-Wolmaransstad75MWSEF 001	Palaeontological	Grade IIIc
90929	WOL002	Palaeo-Wolmaransstad75MWSEF 002	Palaeontological	Grade IIIc
90930	WOL003	Palaeo-Wolmaransstad75MWSEF 003	Palaeontological	Grade IIIc
90931	WOL004	Palaeo-Wolmaransstad75MWSEF 004	Palaeontological	Grade IIIc
90932	WOL005	Palaeo-Wolmaransstad75MWSEF 005	Palaeontological	Grade IIIc

90933	WOL006	Palaeo-Wolmaransstad75MWSEF 006	Palaeontological	Grade IIIc
90934	WOL007	Palaeo-Wolmaransstad75MWSEF 007	Palaeontological	Grade IIIc
90935	WOL008	Palaeo-Wolmaransstad75MWSEF 008	Palaeontological	Grade IIIc
90936	WOL009	Palaeo-Wolmaransstad75MWSEF 009	Palaeontological	Grade IIIc
90937	WOL010	Palaeo-Wolmaransstad75MWSEF 010	Palaeontological	Grade IIIc
90943	WOL012	Palaeo-Wolmaransstad75MWSEF 012	Palaeontological	Grade IIIc
90945	WOL013	Palaeo-Wolmaransstad75MWSEF 013	Palaeontological	Grade IIIc
90946	WOL014	Palaeo-Wolmaransstad75MWSEF 014	Palaeontological	Grade IIIc
90947	WOL015	Palaeo-Wolmaransstad75MWSEF 015	Palaeontological	Grade IIIc
90948	WOL016	Palaeo-Wolmaransstad75MWSEF 016	Palaeontological	Grade IIIc
90949	WOL017	Palaeo-Wolmaransstad75MWSEF 017	Palaeontological	Grade IIIc
90950	WOL018	Palaeo-Wolmaransstad75MWSEF 018	Palaeontological	Grade IIIc
90951	WOL019	Palaeo-Wolmaransstad75MWSEF 019	Palaeontological	Grade IIIc
90952	WOL020	Palaeo-Wolmaransstad75MWSEF 020	Palaeontological	Grade IIIc
90942	WOL011	Palaeo-Wolmaransstad75MWSEF 011	Palaeontological	Grade IIIc
90953	WOL021	Palaeo-Wolmaransstad75MWSEF 020	Palaeontological	Grade IIIc
90954	WOL022	Palaeo-Wolmaransstad75MWSEF 022	Palaeontological	Grade IIIc
90955	WOL023	Palaeo-Wolmaransstad75MWSEF 023	Palaeontological	Grade IIIc
90956	WOL024	Palaeo-Wolmaransstad75MWSEF 024	Palaeontological	Grade IIIc

90957	WOL025	Palaeo-Wolmaransstad75MWSEF 025	Palaeontological	Grade IIIc
90958	WOL026	Palaeo-Wolmaransstad75MWSEF 026	Palaeontological	Grade IIIc
90959	WOL027	Palaeo-Wolmaransstad75MWSEF 027	Palaeontological	Grade IIIc
90960	WOL028	Palaeo-Wolmaransstad75MWSEF 028	Palaeontological	Grade IIIc
90961	WOL029	Palaeo-Wolmaransstad75MWSEF 029	Palaeontological	Grade IIIc
90962	WOL030	Palaeo-Wolmaransstad75MWSEF 030	Palaeontological	Grade IIIc
90973	WOL031	Palaeo-Wolmaransstad75MWSEF 031	Palaeontological	Grade IIIc
90975	WOL032	Palaeo-Wolmaransstad75MWSEF 032	Palaeontological	Grade IIIc
90977	WOL033	Palaeo-Wolmaransstad75MWSEF 033	Palaeontological	Grade IIIc
90981	WOL035	Palaeo-Wolmaransstad75MWSEF 035	Palaeontological	Grade IIIc
90982	WOL036	Palaeo-Wolmaransstad75MWSEF 036	Palaeontological	Grade IIIc
90983	WOL037	Palaeo-Wolmaransstad75MWSEF 037	Palaeontological	Grade IIIc
90984	WOL038	Palaeo-Wolmaransstad75MWSEF 038	Palaeontological	Grade IIIc
90985	WOL039	Palaeo-Wolmaransstad75MWSEF 039	Palaeontological	Grade IIIc
90986	WOL040	Palaeo-Wolmaransstad75MWSEF 040	Palaeontological	Grade IIIc
90988	WOL042	Palaeo-Wolmaransstad75MWSEF 042	Palaeontological	Grade IIIc
90979	WOL034	Palaeo-Wolmaransstad75MWSEF 034	Palaeontological	Grade IIIc

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APPENDIX 2

Reference List with relevant AIAs and PIAs

Heritage Impact Assessments				
Case ID	**Report Type**	**Author/s**	**Date**	**Title**
6035	Archaeological Specialist Reports	Jaco van der Walt	03/08/2015	Revised Archaeological Impact Assessment Report for the proposed Kotulo Tsatsi CSP 3 Facility
5801	PIA Phase 1	John Pether	23/04/2012	BRIEF PALAEONTOLOGICAL IMPACT ASSESSMENT PROPOSED ORLIGHT SA DEVELOPMENT OF A SOLAR PHOTOVOLTAIC POWER PLANT NEAR AGGENEYS, NORTHERN CAPE PROVINCE Portion 1 of Farm Aroams 57 RD
129	HIA Phase 1	Lita Webley, Dave Halkett, John Pether	01/04/2012	Heritage Impact Assessment: Proposed Kenhardt Photo-voltaic Solar Power Plant on Remainder of the Farm Klein Zwart Bast 188, Northern Cape
208	AIA Phase 1	Jonathan Kaplan	01/11/2012	Archaeological Impact Assessment for the proposed Green Continent Partners 75 MW Photovoltaiv Electricity Generation Facility on Portion 8 of the Farm Olyvenkolk No. 187, Kenhardt, Northern Cape
209	AIA Phase 1	Jonathan Kaplan	01/11/2012	AIA: PROPOSED WINE ESTATE CAPITAL MANAGEMENT 75MW PHOTOVOLTAIC ELECTRICITY GENERATION FACILITY ON PORTION 12 OF THE FARM OLYVENKOLK NO. 187, KENHARDT
4274	AIA Phase 1	David Morris	01/04/2004	Archaeological Resources at Geel Vloer, Bushmanland: A Phase 1 Archaeological Impact Assessment
340296	Palaeontological Specialist Report	John Almond	02/03/2015	Palaeontological Heritage Assessment: Combined Desktop and Field Based Study for the Proposed SolarReserve Kotulo Tsatsi Energy CSP and PV Solar Energy Facilities near Kenhardt, NC Province
397221	Heritage Impact Assessment Specialist Report	Jaco van der Walt	31/03/2017	HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED SOLARRESERVE KOTULO TSATSI PHOTOVOLTAIC POWER PLANT 2
169885	Archaeological Specialist Reports	Jaco van der Walt	12/05/2014	Archaeological Scoping Report for the Proposed Kotulo Tsatsi Energy Solar Park including Concentrated Solar Power (Tower & Through Technologies) and Photovoltaic (PV) Solar Facilities, Northern Cape

257586	Archaeological Specialist Reports	Jaco van der Walt	05/02/2015	Archaeological Impact Assessment for the Proposed Kotulo Tsatsi CSP 3 Facility, located close to Kenhardt in the Northern Cape

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Other Sources:

Beaumont and Vogel. 1989. Patterns in the age and context of Rock Art in the Northern Cape. *The South African Archaeological Bulletin*. Vol 44, No. 150. Pp 73 to 81

Deacon, J. 1997. "My heart stands in the hill": Rock engravings in the Northern Cape. *Kronos*. No. 24. Pp 18 to 29

Skinner, 2017. The Changer of Ways: Rock Art and Frontier ideologies on the Standberg, Northern Cape, South Africa. Unpublished Thesis in fulfillment of MSc, University of the Witwatersrand.

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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 PALAEONTOLOGICAL SENSITIVITY

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

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

DETERMINATION OF THE COVERAGE RATING ASCRIBED TO A REPORT POLYGON

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

Low coverage will be used for:

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

Medium coverage will be used for

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

High coverage will be used for

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

RECOMMENDATION GUIDE

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

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

This recommendation is made when:

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

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

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

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

- undertaking mitigation measures requested in previous assessments/records of decision.

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

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

APPENDIX 5 -Summary of Specialist Expertise

Jenna Lavin, an archaeologist with an MSc in Archaeology and Palaeoenvironments, and currently completing an MPhil in Conservation Management , heads up the heritage division of the organisation since 2016, and has a wealth of experience in the heritage management sector. Jenna's previous position as the Assistant Director for Policy, Research and Planning at Heritage Western Cape has provided her with an in-depth understanding of national and international heritage legislation. Her 8 years of experience at various heritage authorities in South Africa means that she has dealt extensively with permitting, policy formulation, compliance and heritage management at national and provincial level and has also been heavily involved in rolling out training on SAHRIS to the Provincial Heritage Resources Authorities and local authorities.

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

Since 2016, Jenna has drafted over 100 Heritage Impact Assessments and Screening Assessments throughout South Africa.