

EENER

		HERITAGE SCRE
CTS Reference Number:	CTS21_208	Tacat Tabat 100.
SAHRA Ref Number	349	
Client:	Savannah	
Date:	November 2021	
Title:	San Solar PV Facility and Associated Infrastructure, Northern Cape Province	
		N Proposed Development
		0 10 20 km

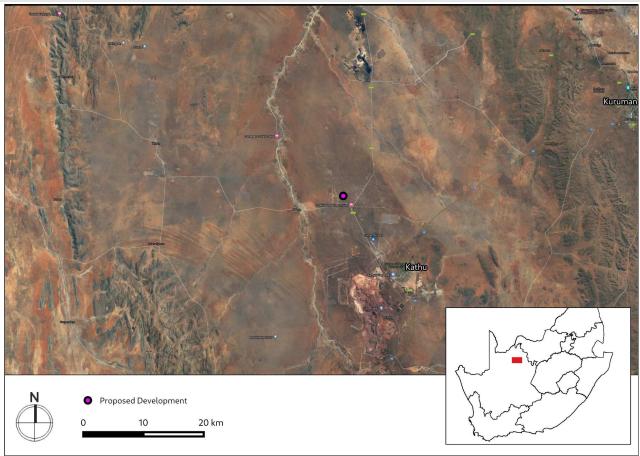


Figure 1a. Satellite map indicating the location of the proposed development in the Northern Cape Province

Recommendation:

RECOMMENDATION

Based on the available information, it is unlikely that the proposed development will impact significant archaeological or palaeontological heritage. However, it is possible that the excavations associated with the development may impact significant archaeological heritage located below the ground surface and as such, it is recommended that:

- Should any sink holes or ESA archaeological artefacts be uncovered during the course of excavation activities, work must cease in that area and SAHRA must be contacted regarding a way forward
- The attached Chance Fossil Finds Procedure is implemented for the duration of excavation activities



1. Proposed Development Summary

San Solar Energy Facility (Pty) Ltd proposes the development of the San Solar PV facility, a photovoltaic (PV) solar energy facility and associated infrastructure, on a site located approximately 16km north west of Kathu in the Northern Cape Province. The solar PV facility will be developed on the Remaining extent of the Farm Wincanton 472 and comprise several arrays of PV panels and associated infrastructure with a contracted capacity of up to 100MW. The study area¹ falls within the Gamagara Local Municipality within the John Taolo Gaetsewe District Municipality. The site is located east of Deben and is accessible via the R380 provincial route which branches off the N14 National Road, approximately 3km south of Kathu.

A facility development area², which will include the PV facility, BESS and a 132kV facility substation to be connected via a Loop-in-Loop out (LILO) connection to the Umtu 132kV overhead power line will be identified within the study area considered in the Scoping phase. The infrastructure associated with this 100MW PV facility includes:

- » PV modules and mounting structures
- » Inverters and transformers
- » Cabling between the panels, to be laid underground where practical.
- » Battery Energy Storage System (BESS)
- » Site and internal access roads (up to 8m wide)
- » Laydown area.
- » Operation and Maintenance buildings including a gate and security building, control centre, offices, warehouse, and workshop areas for maintenance and storage.
- » Grid connection solution including a 132kV facility substation to be connected via a Loop-in-Loop out (LILO) connection to the Umtu 132kV overhead power line (located ~5km east of the site).

The development area will be larger than the area needed for the construction of a 100MW PV facility and will provide the opportunity for the optimal placement of the infrastructure, ensuring avoidance of major identified environmental sensitivities by the development footprint³. To avoid areas of potential sensitivity and to ensure that potential detrimental environmental impacts are minimised as far as possible, the development footprint within which the infrastructure of San Solar PV facility and its associated infrastructure will be located will be fully assessed during the EIA Phase.

Three (3) solar facilities have been constructed in the broader area. These include the Sishen Solar PV and Kathu Solar PV facilities located immediately west of the farm Remaining extent of the Farm Wincanton 472. The Kathu Solar facility is a CSP facility located to the east of the study area

¹ The study area is defined as the Remaining extent of the Farm Wincanton 472, which has the extent of ~ 1000ha.

² The development area is that identified area (located within the study area) where the San Solar PV facility would be located.

³ The development footprint is the defined area (located within the development area) where the PV panel array and other associated infrastructure for San Solar PV will be planned to be constructed. This will be the actual footprint of the facility, and the area which would be disturbed. The extent of the development footprint will be determined in the EIA Phase.



2. Application References

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

3. Property Information

Latitude / Longitude	27°34'47.09"S 22°56'54.25"E
Erf number / Farm number	Remainder of Farm 472
Local Municipality	Gamagara
District Municipality	John Taolo Gaetsewe
Province	Northern Cape
Current Use	Agriculture
Current Zoning	Agriculture

4. Nature of the Proposed Development

Total Surface Area	~ 1000ha
Depth of excavation (m)	TBA
Height of development (m)	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
	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-
Х	a) exceeding 5 000m² 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

See project description above.



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

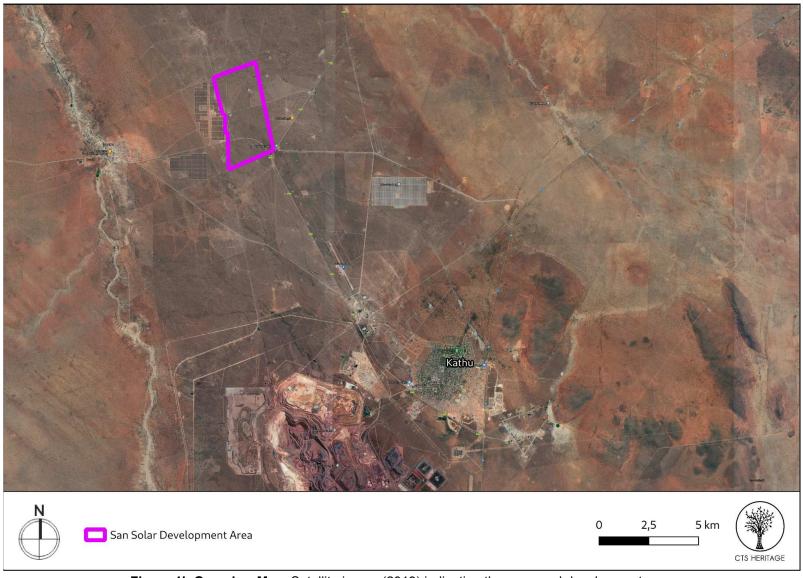


Figure 1b Overview Map. Satellite image (2019) indicating the proposed development area



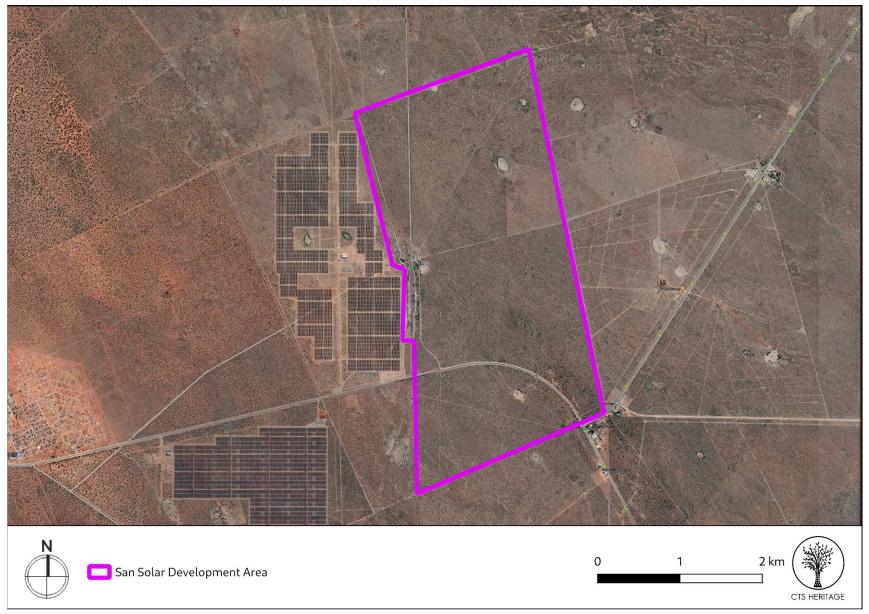


Figure 1c. Overview Map. Satellite image (2019) indicating the proposed development area at closer range.



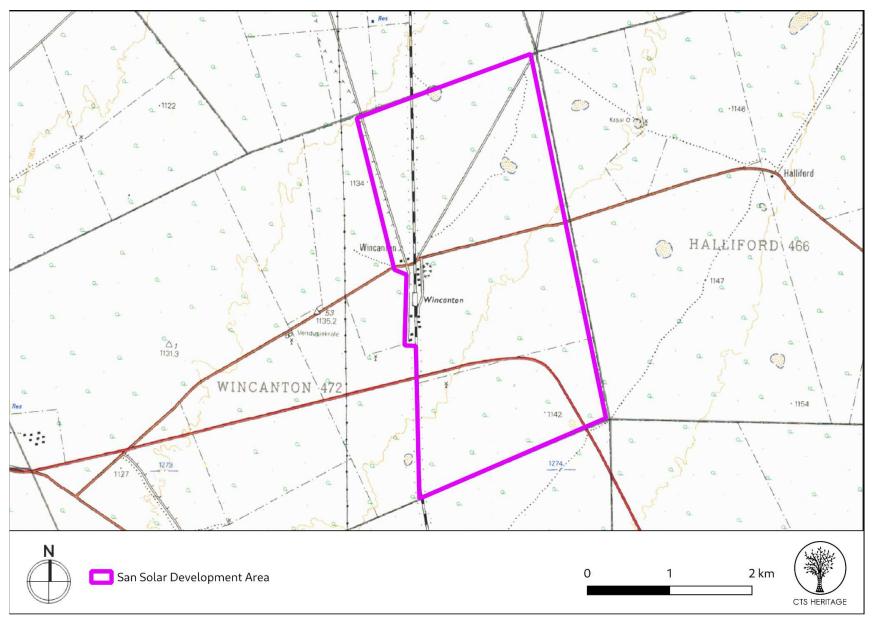


Figure 1d. Overview Map. Extract from the 1:50 000 Topo Map indicating the proposed development area



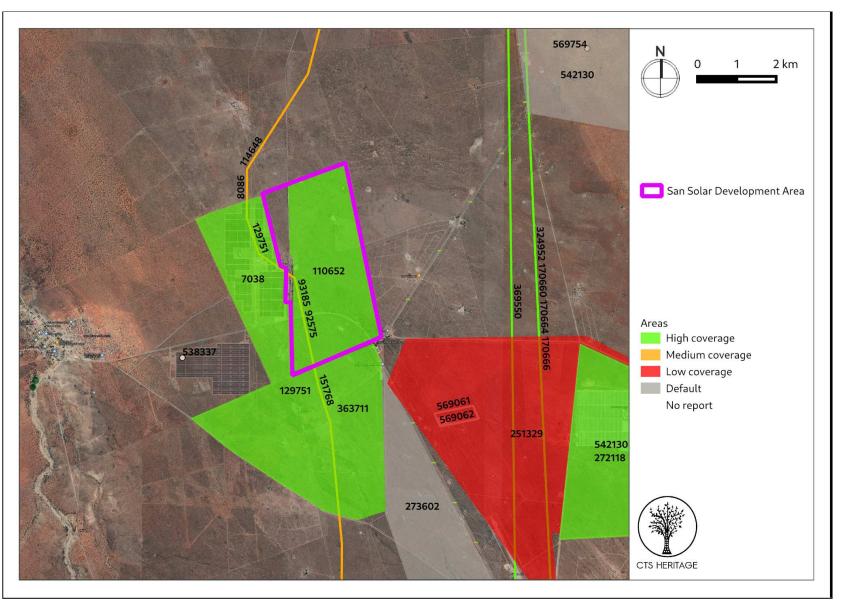


Figure 2. Previous HIAs Map. Previous Heritage Impact Assessments surrounding the proposed development area within 5km, with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.



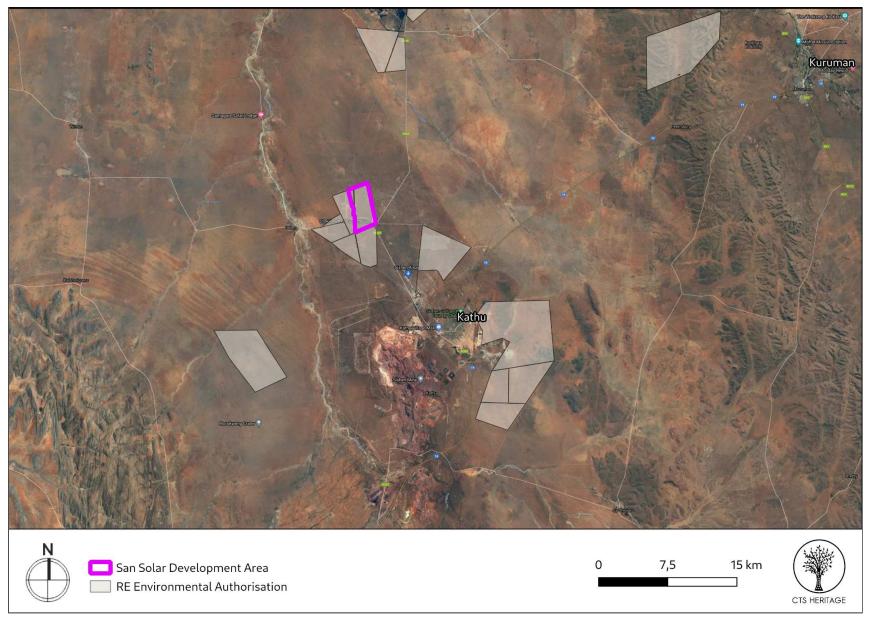


Figure 2a. Renewable Energy EA Map. Renewable energy projects with Environmental Authorisation (EA)



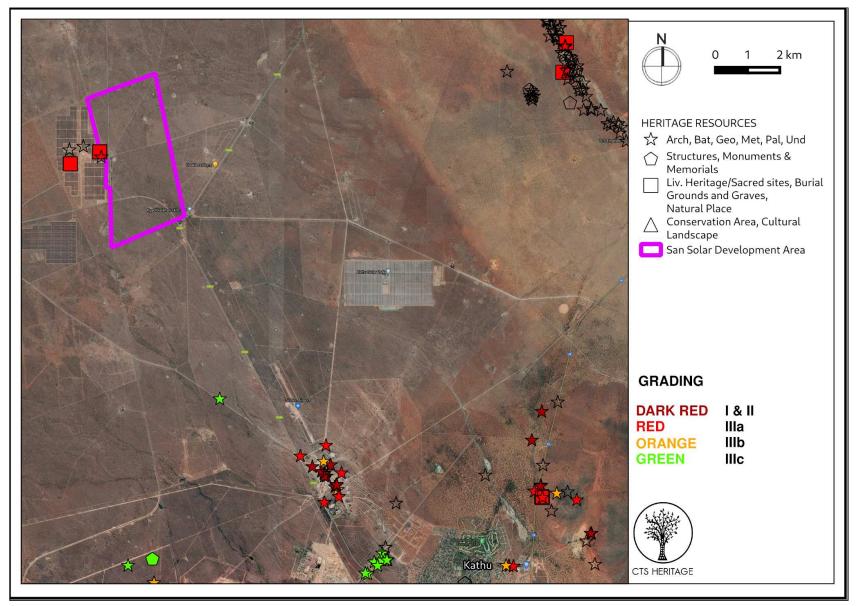


Figure 3. Heritage Resources Map. Heritage Resources previously identified in and near the study area



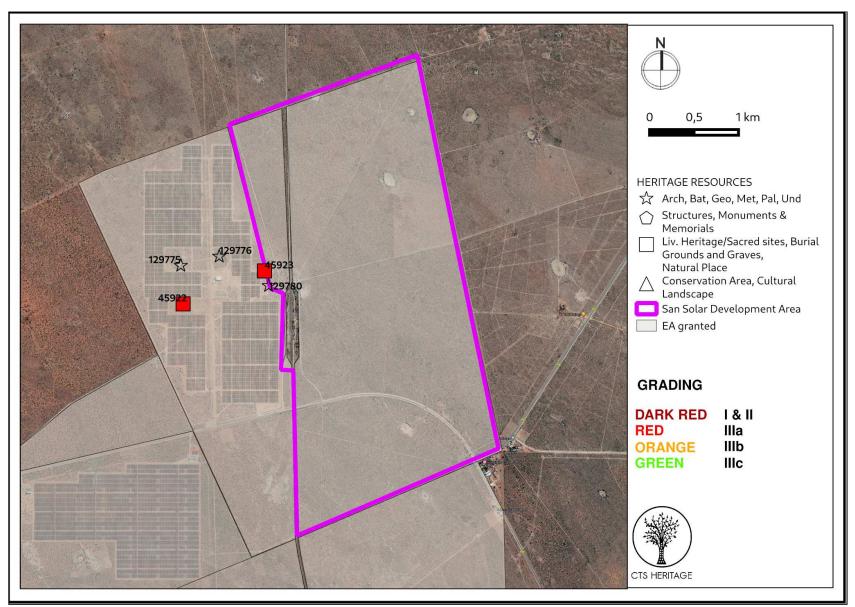


Figure 3a. Heritage Resources Map. Inset A, with SAHRIS Site IDs indicated. Please See Appendix 4 for full description of heritage resource types.



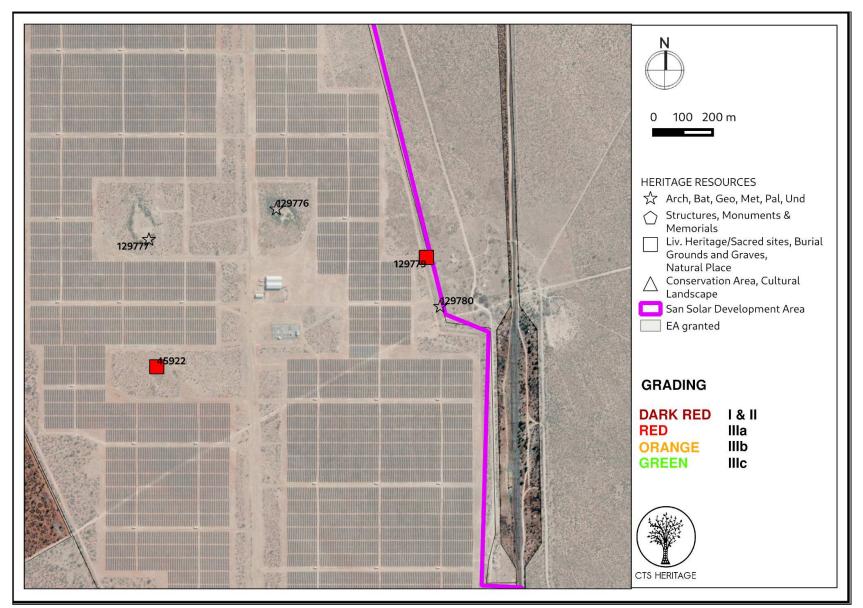


Figure 3b. Heritage Resources Map. Inset B



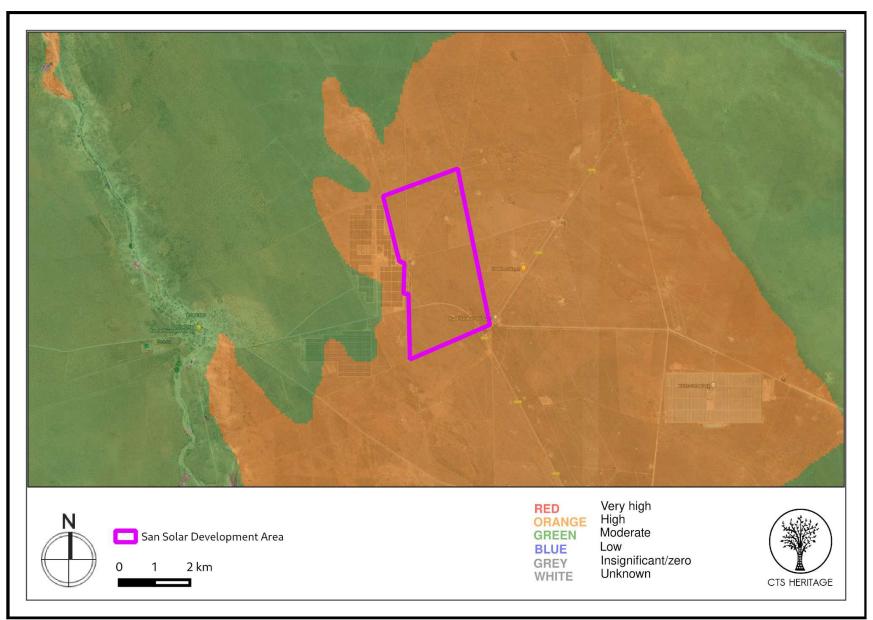


Figure 4a. Palaeosensitivity Map. Indicating moderate and high fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.



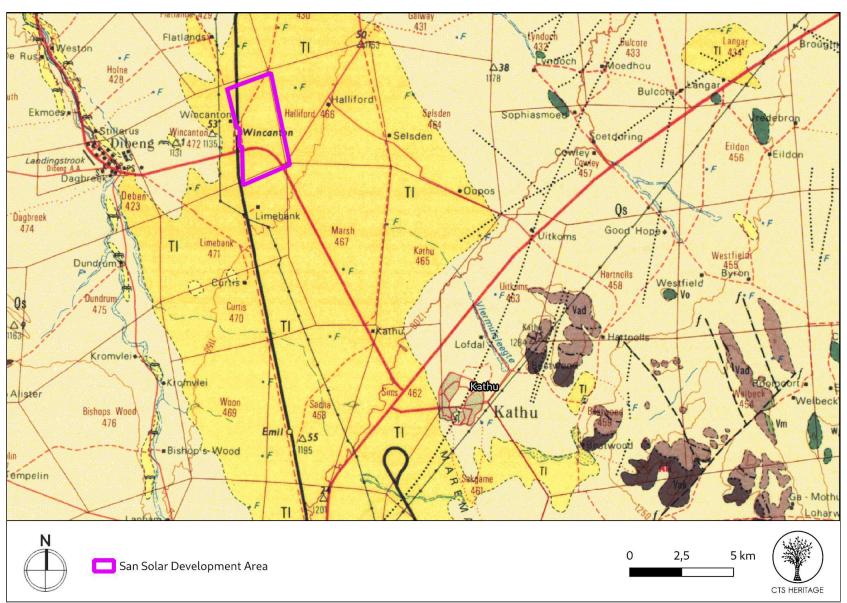


Figure 4b. Geology Map. Extracted from the CGS Map 2722 for Kuruman indicates that the area proposed for development is underlain by TI: surface Limestone dated to the Tertiary Period



8. Heritage statement and character of the area

This application is for the development of the San Solar PV facility, a photovoltaic (PV) solar energy facility and associated infrastructure, on a site located approximately 16km north west of Kathu in the Northern Cape Province. The previous EA that was undertaken for the project lapsed, hence a new process is being followed.

The town of Kathu was established in the 1960's and 1970's as a result of the iron ore mining taking place at the neighbouring Sishen mine. It is important to note that the Grade I Kathu Pan Archaeological site lies approximately 10km southeast of the proposed development. At Kathu Pan, evidence of early hominin occupation has been observed at multiple sinkhole sites within the pan, and the results of scientific investigation into these sites has been broadly published. These sites are known for their rich collection of Early Stone Age artefacts, and several Archaeological and Heritage Impact Assessments have recorded the area (see Figure 2 Appendix 2). These archaeological resources occur in areas associated with outcrops of banded ironstone, and the localised natural pan, with most coming specifically from sinkholes in the pan itself.

As indicated in Figure 1c, the area proposed for the San Solar PV Facility is located immediately adjacent to an existing PV facility to the west. As such, it is not anticipated that the proposed development will have a negative impact on any significant cultural landscape in the area due to the existing similar infrastructure here. Furthermore, it is often preferred to have development such as PV facilities clustered in one area to mitigate the sprawl of this infrastructure across otherwise pristine landscapes. As no impact to the cultural landscape is anticipated, no further assessment of impacts to the cultural landscape is recommended.

Gaigher (2013) conducted an assessment for the San Solar Energy Facility located north of Kathu on a Portion of the Farm Wincanton 472 - for this exact development proposal (SAHRIS NID 110765). According to Gaigher (2013), "One site for the placement of Solar Array generation plant was investigated. Due to the topographic requirements of Solar Arrays the areas are by nature flat and featureless with limited possibilities of water intrusion. Traditionally people have congregated in areas where shelter is found in some geographic feature or in areas that are elevated above the surrounding landscape. Accesses to water sources are also a deciding factor in the location of occupational sites. None of these factors were present in the areas investigated. Some dry dongas were located in some of the sites; however these are not reliable sources of water. The area could still contain the remains of nomadic hunter/gatherer camps and some areas with suitable substrates could have been used as quarries for material to produce Stone Age tools. No such sites were however identified. We should however in this case apply the rule of Absence of Evidence is not Evidence of Absence." Gaigher (2013) did note the presence of some poorly defined quartz stone artifacts. No cores or manufacturing amounts of flakes could be identified. It is believed that these tools are the result of alluvial relocation from a more prominent site, possibly within the river valley. The amount and composition of the finds does not warrant the site being described as a tool location site. Gaigher (2013) also noted the presence of railway related structures located outside of the study area to the west, but these were neither described, photographed nor indicated on any map. Based on the information included in Gaigher (2013), it is not anticipated that the proposed development of solar PV facilities in this area will have a negative impact on significant archaeological heritage. Due to the proximity to Kathu Pan site, and the similar geology of the area,

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



RECOMMENDATION

Based on the available information, it is unlikely that the proposed development will impact significant cultural landscape, archaeological or palaeontological heritage and as such, the assessment of archaeology and palaeontology will not be necessary during the EIA phase.

However, it is possible that the excavations associated with the development may impact significant archaeological heritage located below the ground surface and as such, it is recommended that:

- Should any sink holes or ESA archaeological artefacts be uncovered during the course of excavation activities, work must cease in that area and SAHRA must be contacted regarding a way forward
- The attached Chance Fossil Finds Procedure is implemented for the duration of excavation activities



9. Scoping Assessment Impact Table

Impact

- Impact to archaeological and built environment resources
- Impact to palaeontological resources
- Impact to Cultural Landscape
- Cumulative Impact

Desktop Sensitivity Analysis of the Site

- Impact to significant archaeological resources such as Stone Age artefact scatters, burial grounds and graves, historical artefacts, historical structures and rock art engravings through destruction during the development phase and disturbance during the operational phase is unlikely.
- Impacts to palaeontological resources are unlikely.
- There is the potential for the cumulative impact of proposed solar energy facilities to negatively impact the cultural landscape due to a change in the landscape character from natural wilderness to semi-industrial, however, due to the remoteness of the area, and the presence of existing PV infrastructure adjacent to the site, the impact on the experience of the cultural landscape is not foreseen to be significant. As no impact to the cultural landscape is anticipated, no further assessment of impacts to the cultural landscape is recommended.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Impact to significant heritage resources through destruction during the development phase and disturbance during the operational phase.	Destruction of significant heritage resources	Local scale with broader impacts to scientific knowledge	None known at present

Gaps in knowledge & recommendations for further study

A Desktop Palaeontological Assessment is recommended to provide further insight into the palaeontological sensitivity of the development area

No impacts to significant heritage resources are likely based on the information available, however, due to the possibility of impact to archaeological and palaeontological resources located below the ground surface, it is recommended that:

- Should any sink holes or ESA archaeological artefacts be uncovered during the course of excavation activities, work must cease in that area and SAHRA must be contacted regarding a way forward
- The attached Chance Fossil Finds Procedure is implemented for the duration of excavation activities



APPENDIX 1: List of heritage resources within close proximity to the development area

Site ID	Site no	Full Site Name	Site Type	Grading
45922	KAT-SIS05	Kathu-Sishen 05	Burial Grounds & Graves	Grade IIIa
45923	KAT-SIS06	Kathu-Sishen 06	Burial Grounds & Graves	Grade IIIa
129775	2722DD/Solar/Farm Wincanton 472/Site 1	Stone artefacts	Artefacts	Ungraded
129776	2722DD/Solar/Farm Wincanton 472/Site 2	Dolines	Archaeological	Ungraded
129777	2722DD/Solar/Farm Wincanton 472/Site 3	Stone artefacts	Artefacts	Ungraded
129778	2722DD/Solar/Farm Wincanton 472/Site 4	Grave	Burial Grounds & Graves	Ungraded
129779	2722DD/Solar/Farm Wincanton 472/Site 5	Grave	Burial Grounds & Graves	Ungraded
129780	2722DD/Solar/Farm Wincanton 472/Site 6	Ash-heap	Archaeological	Ungraded



APPENDIX 2: Reference List

	Heritage Impact Assessments				
Nid	Nid Report Type Author/s Date Title		Title		
109484	Heritage Statement	Stephan Gaigher	09/05/2012	HERITAGE IMPACT ASSESSMENT REPORT ENVIRONMENTAL IMPACT ASSESSMENT PHASE Proposed establishment of the San Solar Energy Facility located south of Kathu on a Portion of the Farm Wincanton 472, Northern Cape Province.	
110652	HIA Phase 1	Stephan Gaigher	01/02/2013	HERITAGE IMPACT ASSESSMENT REPORT ENVIRONMENTAL IMPACT ASSESSMENT PHASE Proposed establishment of the San Solar Energy Facility located south of Kathu on a Portion of the Farm Wincanton 472, Northern Cape Province	
110765	HIA Phase 1	Stephan Gaigher	26/02/2013	HERITAGE IMPACT ASSESSMENT REPORT ENVIRONMENTAL IMPACT ASSESSMENT PHASE Proposed establishment of the San Solar Energy Facility located north of Kathu on a Portion of the Farm Wincanton 472, Northern Cape Province	
114648	PIA Desktop	John E Almond	01/09/2012	Palaeontological specialist assessment: desktop study PROPOSED 16 MTPA EXPANSION OF TRANSNETS 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	
129751	HIA Phase 1	Elize Becker	20/02/2013	Phase 1 Heritage Impact Assessment Hotazel to Kimberley and De Aar to Port of Ngqura	
153307	Heritage Impact Assessment Specialist Reports	Robert de Jong	22/02/2011	Kalahari Solar Power Project Heritage Impact Assessment Report and Heritage Management Plan developed by Robert De Jong and Associates	
157923	Heritage Scoping	R. C. De Jong	10/12/2010	Heritage Scoping Report for the Proposed Kalahari Solar Project on Portions of the Farm Kathu 465, Kuruman Registration Division, Gamagara Local Municipality, Northern Cape Province	
159473	AIA Phase 1	Johnny Van Schalkwyk		Archaeological impact survey report for THE PROPOSED DEVELOPMENT OF A SOLAR POWER PLANT ON THE FARM BESTWOOD 459, KATHU REGION, NORTHERN CAPE PROVINCE	
160089	AIA Phase 1	Johnny Van		Archaeological impact survey report for THE PROPOSED KALAHARI SOLAR PARK DEVELOPMENT ON	



		Schalkwyk		THE FARM KATHU 465, NORTHERN CAPE PROVINCE
251329	Heritage Impact Assessment Specialist Reports	Jayson Orton	20/02/2015	Heritage Impact Assessment for a Proposed 132 kV Power Line, Kuruman Magisterial District, Northern Cape
272118	Archaeological Specialist Reports	Jayson Orton, Steven Walker	20/04/2015	Archaeological Survey for the Proposed Kalahari Solar Project, Kuruman Magisterial District, NC Province
273602	Heritage Impact Assessment Specialist Reports	Polke Birkholtz	20/04/2015	Heritage Impact Assessment for the Proposed Establishment of a Grazing Project on a Portion of the Farm Marsh 467, Dingleton, Gamagara Local Municipality, Northern Cape.
363711	Heritage Impact Assessment Specialist Reports	Johann van Schalkwyk	01/03/2016	Cultural heritage impact assessment for THE DEVELOPMENT OF THE PROPOSED BOITSHOKO SOLAR POWER PLANT ON THE REMAINING EXTENT OF PORTION 1 OF THE FARM LIMEBANK NO 471 REGISTRATION DIVISION KURUMAN, NORTHERN CAPE PROVINCE
363712		Lloyd Rossouw	01/03/2016	Phase 1 Palaeontological Assessment of the proposed Boitshoko solar power plant (SPP) facility on the Remaining Extent of Portion 1 of the farm Limebank 471, near Kathu, Northern Cape Province.
7038	AIA Phase 1	David Morris	07/11/2010	PROPOSED KATHU-SISHEN SOLAR ENERGY FACILITIES. SPECIALIST INPUT FOR THE ENVIRONMENTAL IMPACT ASSESSMENT PHASE AND ENVIRONMENTAL MANAGEMENT PLAN FOR THE PROPOSED KATHU SISHEN SOLAR ENERGY FACILITIES, NORTHERN CAPE
8944	PIA Phase 1	John Pether	17/01/2011	BRIEF PALAEONTOLOGICAL IMPACT ASSESSMENT (Desktop Study) PROPOSED KATHU & SISHEN SOLAR ENERGY FACILITIES Portions 4 & 6 of the Farm WINCANTON 472 Kuruman District, Northern Cape
93163	HIA Phase 1	Stephan Gaigher	09/05/2012	Heritage Impact Assessment Report Environmental Impact Assessment Phase: Proposed Establishment of the San Solar Energy Facility, Located North of Kathu on a Portion of Farm Wincanton 472, Northern Cape Province



APPENDIX 3 - Keys/Guides

Key/Guide to Acronyms

Archaeological Impact Assessment
Department of Agriculture and Rural Development (KwaZulu-Natal)
Department of Environment, Forest and Fisheries (National)
Department of Environmental Affairs and Development Planning (Western Cape)
Department of Economic Development, Environmental Affairs and Tourism (Eastern Cape)
Department of Economic Development, Environment, Conservation and Tourism (North West)
Department of Economic Development and Tourism (Mpumalanga)
Department of economic Development, Tourism and Environmental Affairs (Free State)
Department of Environment and Nature Conservation (Northern Cape)
Department of Mineral Resources (National)
Gauteng Department of Agriculture and Rural Development (Gauteng)
Heritage Impact Assessment
Department of Economic Development, Environment and Tourism (Limpopo)
Mineral and Petroleum Resources Development Act, no 28 of 2002
National Environmental Management Act, no 107 of 1998
National Heritage Resources Act, no 25 of 1999
Palaeontological Impact Assessment
South African Heritage Resources Agency
South African Heritage Resources Information System
Visual Impact Assessment

Full guide to Palaeosensitivity Map legend

RE	ED:	VERY HIGH - field assessment and protocol for finds is required
OF	RANGE/YELLOW:	HIGH - desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GF	REEN:	MODERATE - desktop study is required
BL	LUE/PURPLE:	LOW - no palaeontological studies are required however a protocol for chance finds is required
GF	REY:	INSIGNIFICANT/ZERO - no palaeontological studies are required
W	HITE/CLEAR:	UNKNOWN - these areas will require a minimum of a desktop study.



APPENDIX 4 - Methodology

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

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

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

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

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

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

Tel: +27 (0)87 073 5739 Email: info@ctsheritage.com Web: www.ctsheritage.com



- 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.