CTS HERITAGE

HERITAGE SCREENER

CTS Reference Number:	**CTS22_136**
Client:	**Savannah**
Date:	**February 2023**
Title:	**BASIC ASSESSMENT FOR LETSOAI I SOLAR PHOTOVOLTAIC AND BESS FACILITY IN THE NORTHERN CAPE**

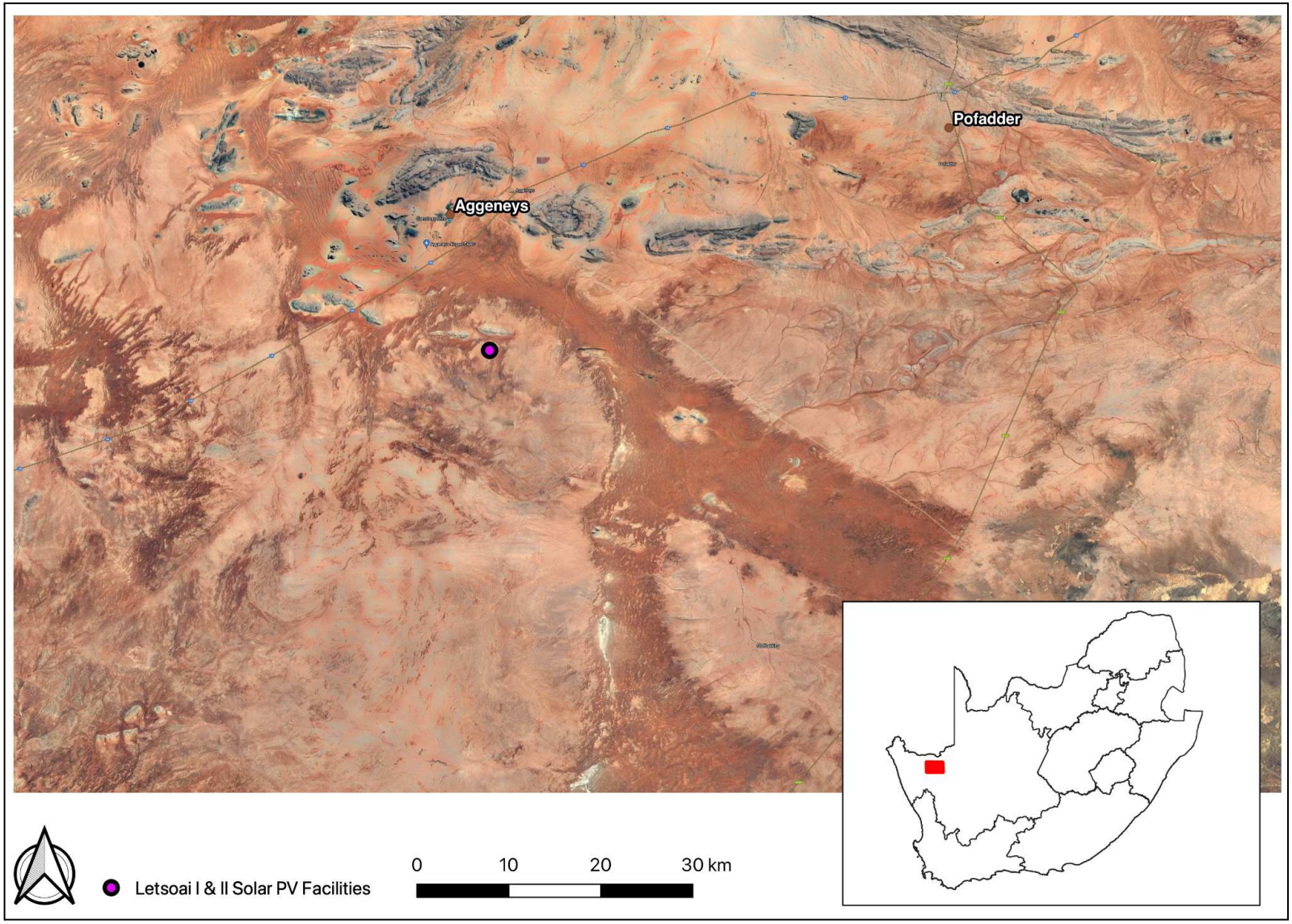

Figure 1a. Satellite map indicating the location of Letsoai I & II Solar Photovoltaic Facilities in the Northern Cape

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1. Proposed Development Summary

Letsoai I Solar Photovoltaic Facilities, Northern Cape Province application by BioTherm Energy.
BioTherm Energy (Pty) Ltd proposes the development of a solar PV and Battery Energy Storage System ("BESS") cluster comprising 2x Solar PV and 2x BESS facilities, to be located approximately 17km south-west of Aggeneys in the Northern Cape Province.

Subsequent to the completion of this assessment, the project developer has updated the project layout to avoid sensitive and no-go areas identified on the project site in line with prescribed specialist mitigation measures. Thus mitigating potential negative impacts associated with the project site.

2. Application References

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

3. Property Information

Latitude / Longitude	-29.38092599, 18.87167784
Erf number / Farm number	Hartebeest Vlei 86
Local Municipality	Khâi-Ma
District Municipality	Namakwa
Province	Northern Cape
Current Use	Agriculture
Current Zoning	Agricultural

4. Nature of the Proposed Development

Total Surface Area	1243.5ha
Depth of excavation (m)	2 - 3m
Height of development (m)	6m

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

TBA

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

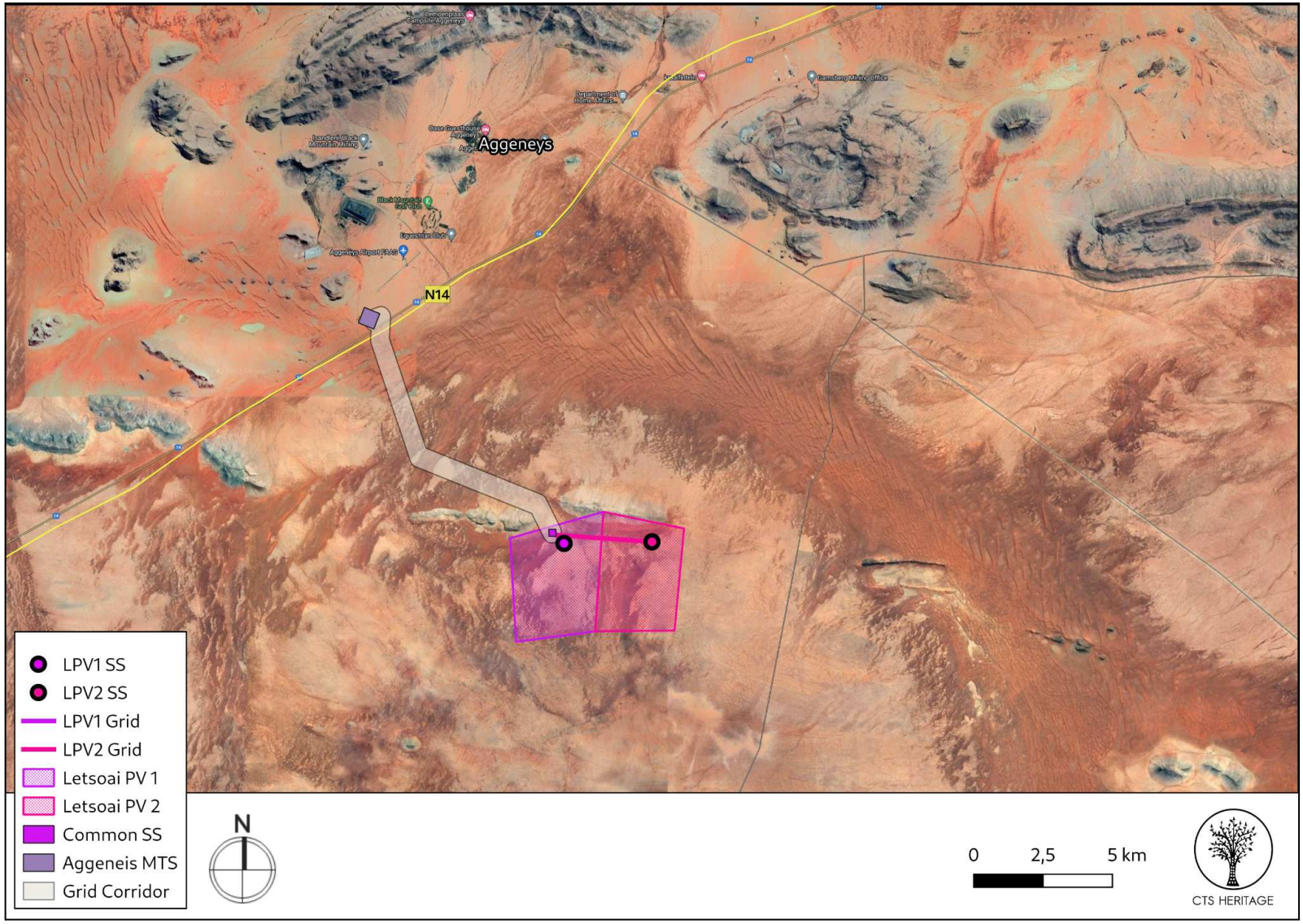

Figure 1b Overview Map. Satellite image (2022) indicating the proposed development area of Letsoai I & II

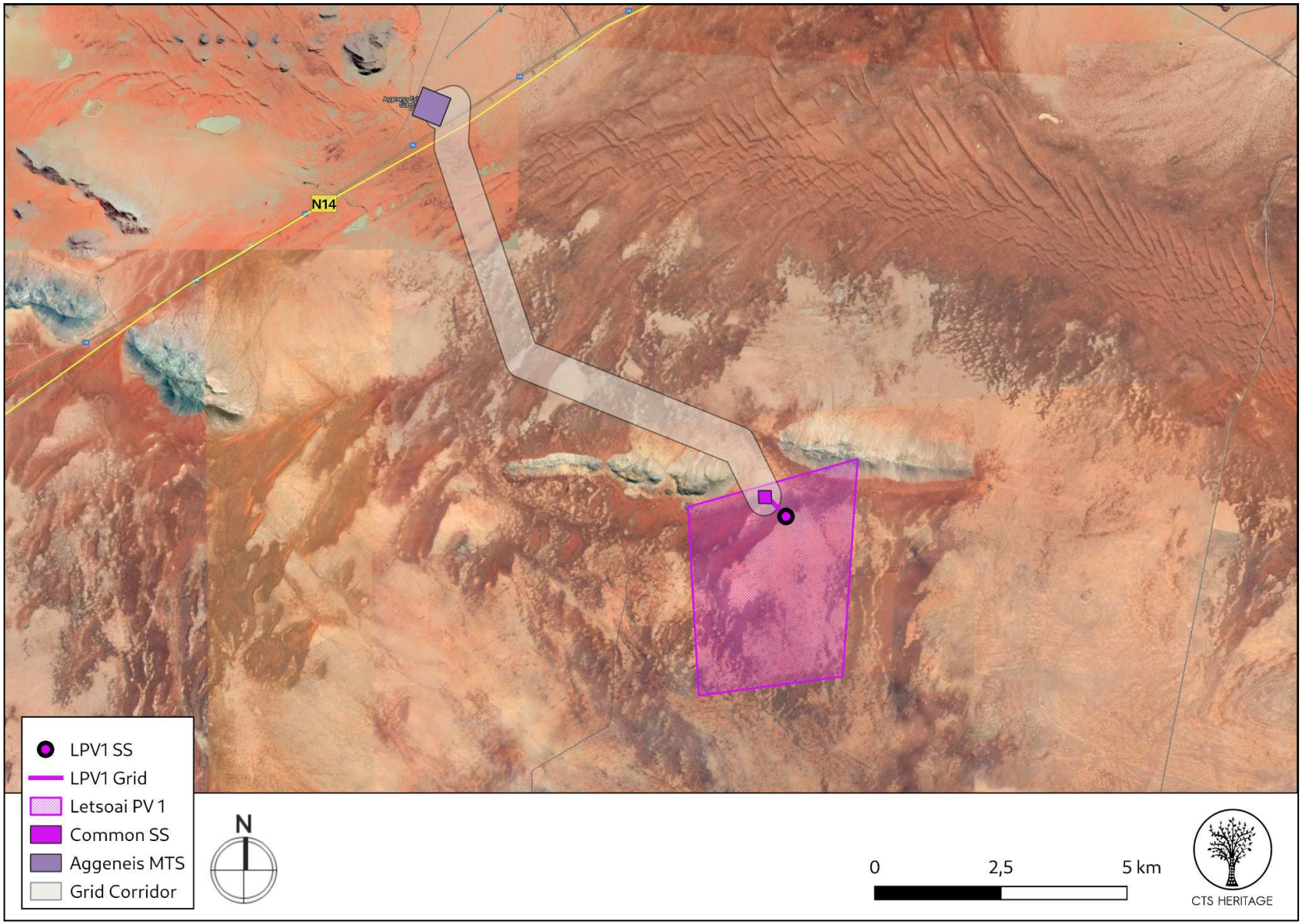

Figure 1c Overview Map. Satellite image (2022) indicating the proposed development area of Letsoai I, close up.

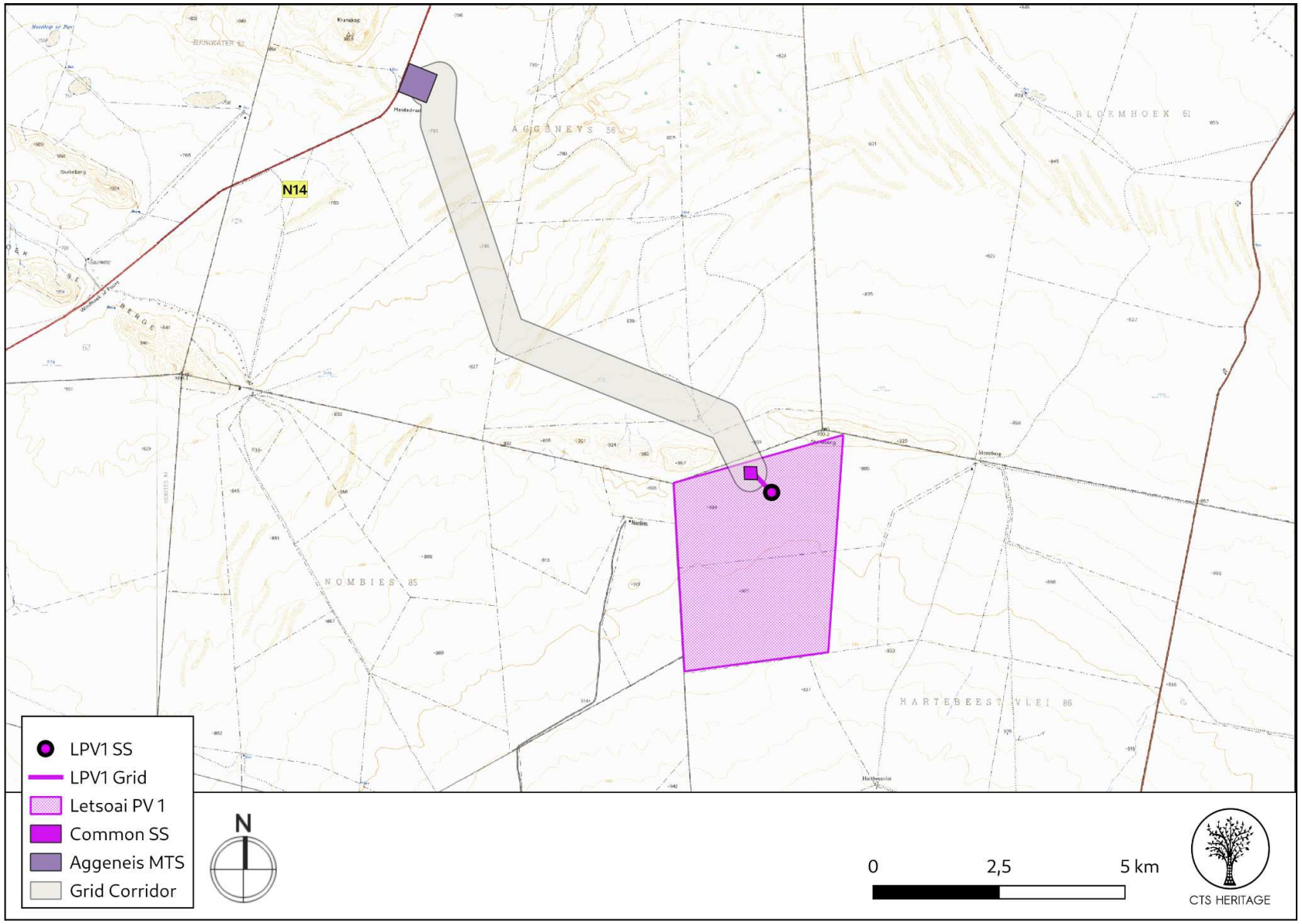

Figure 1d Overview Map. Extract from the 1:50 000 Topo map for the development area.

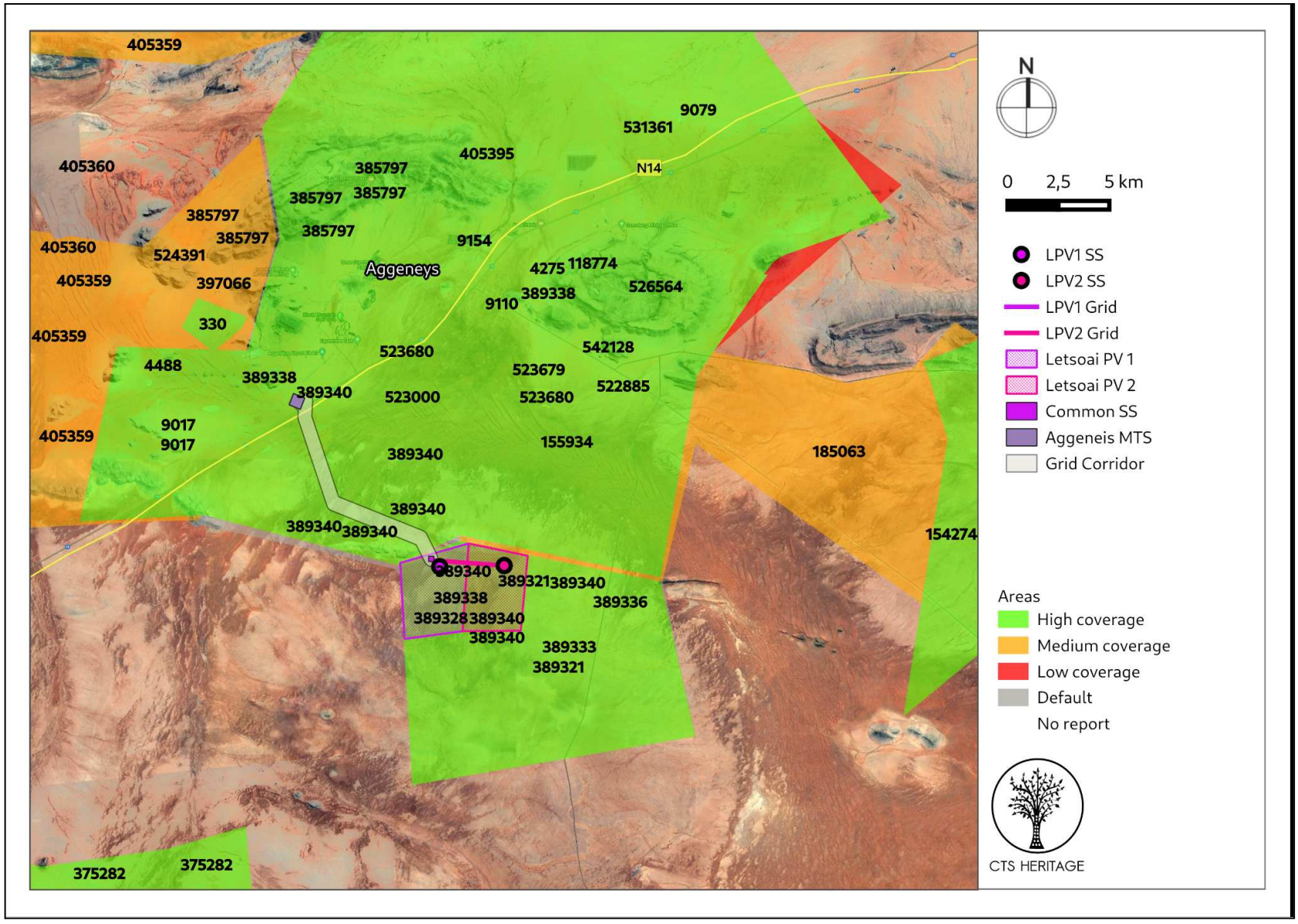

Figure 2. Previous HIAs Map. Previous Heritage Impact Assessments surrounding the proposed development area within 50km, with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.

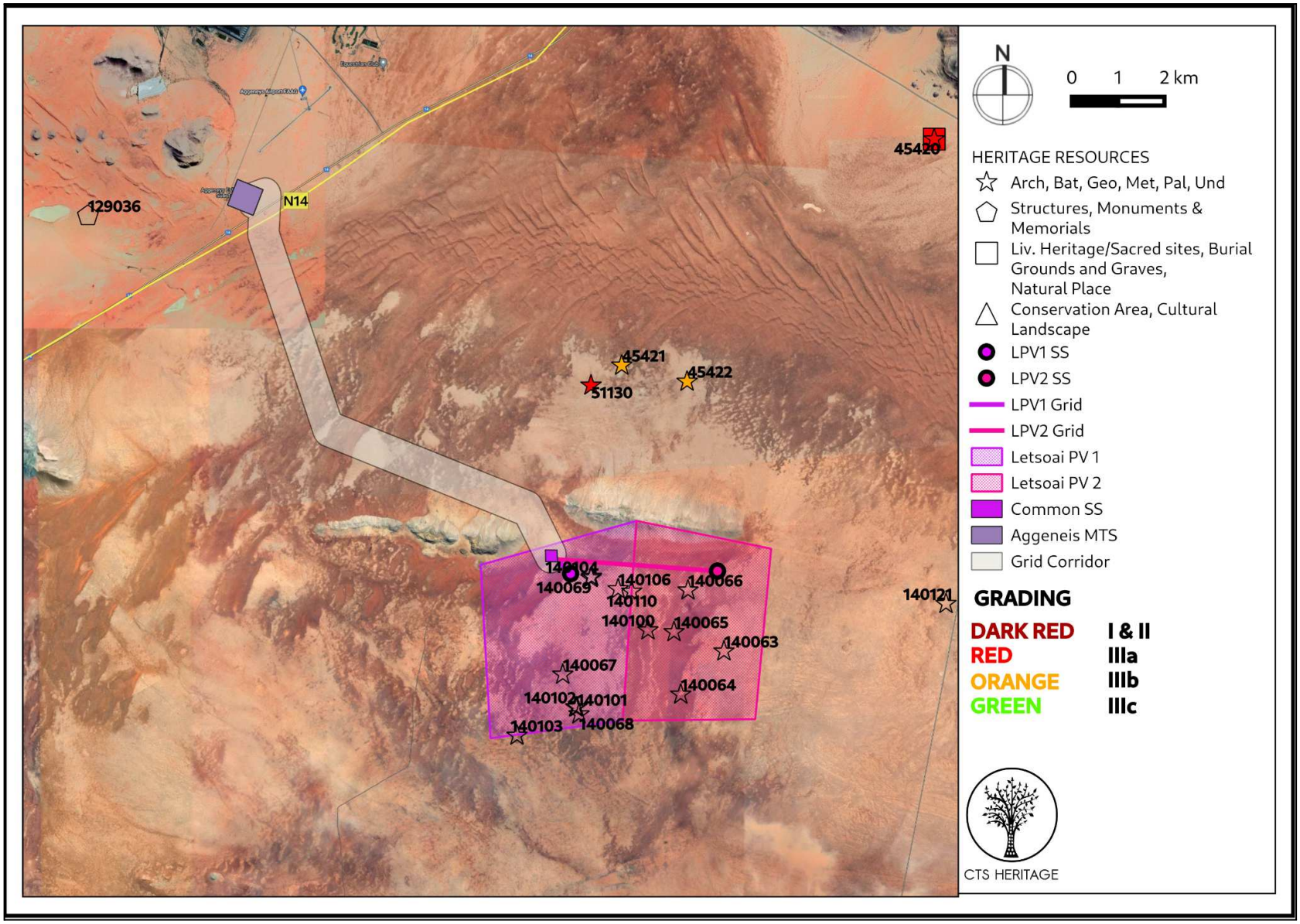

Figure 3. Heritage Resources Map. Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated within 10km. Please See Appendix 4 for full description of heritage resource types.

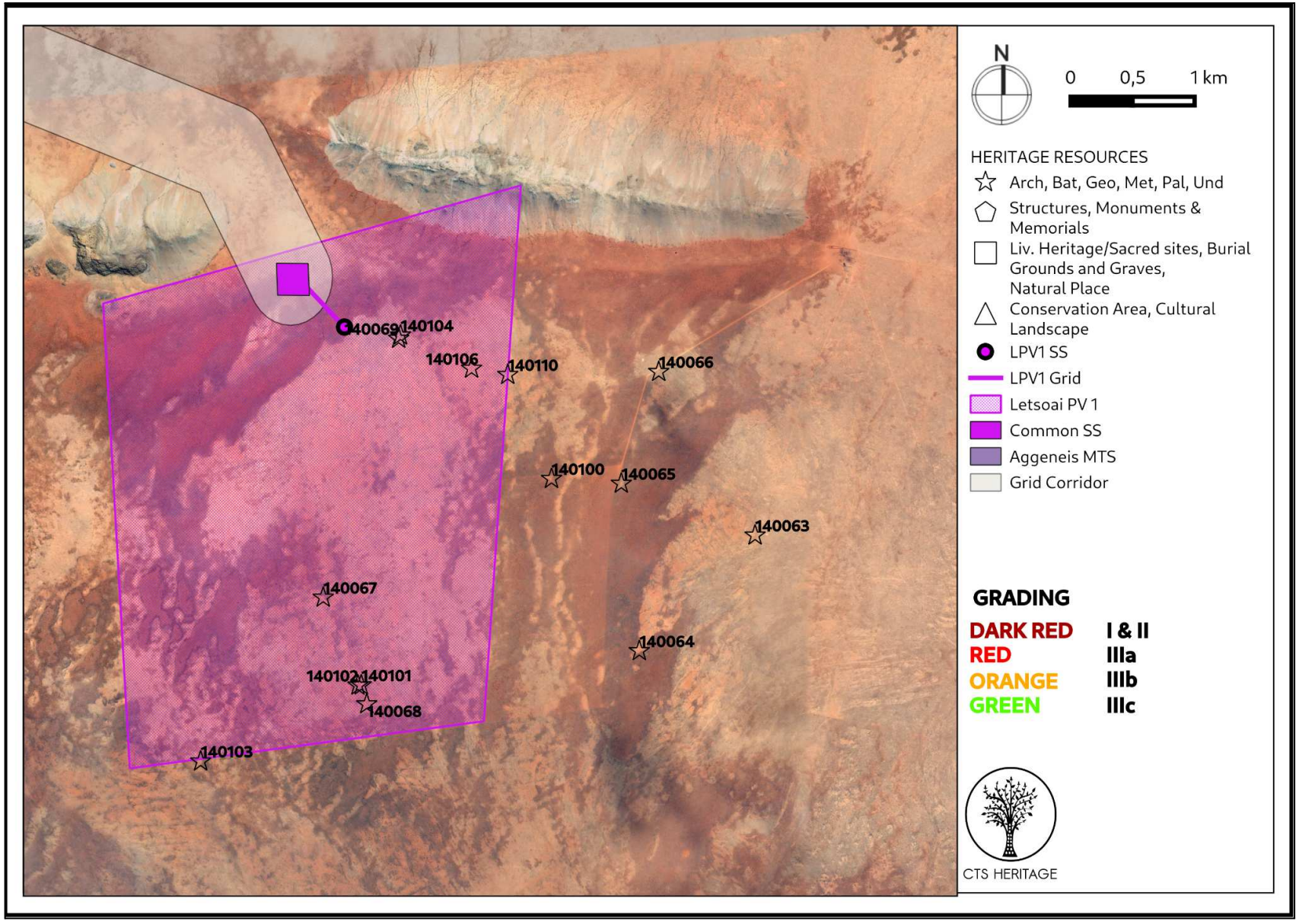

Figure 3a. Heritage Resources Map. Inset A.

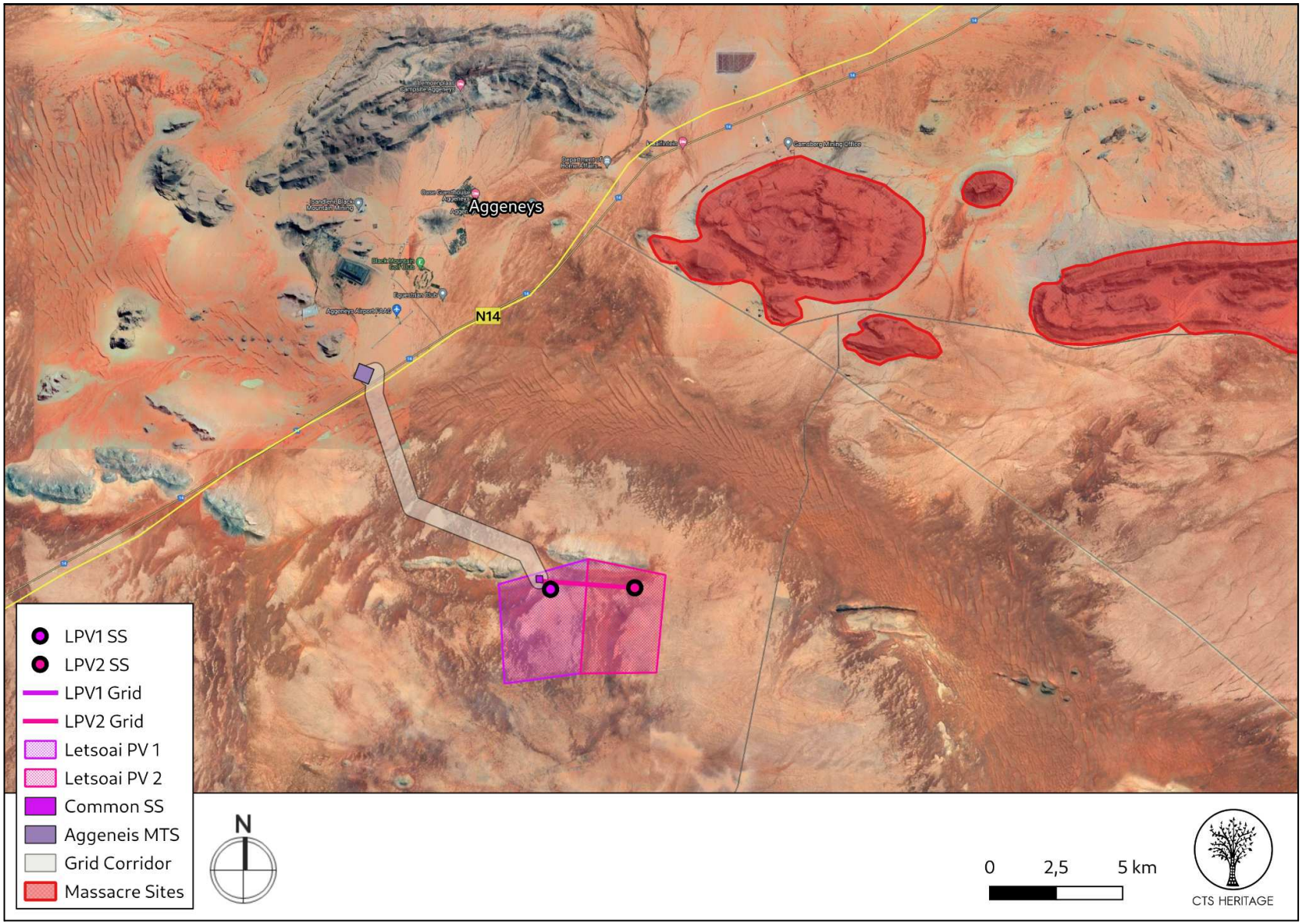

Figure 3c. Heritage Resources Map showing the Gamsberg and Namiesberg Massacre sites

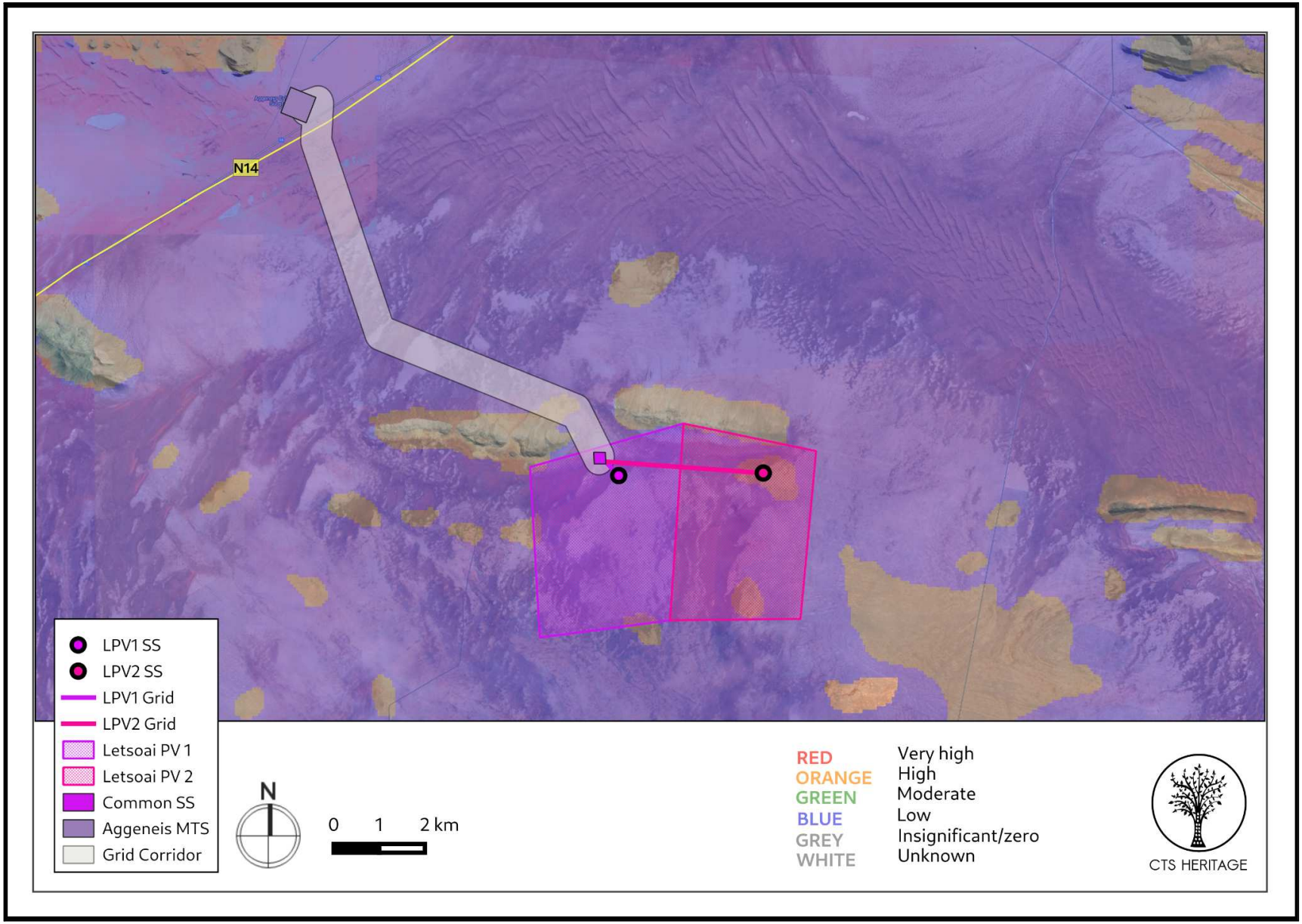

Figure 4a. Palaeosensitivity Map. Indicating low fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.

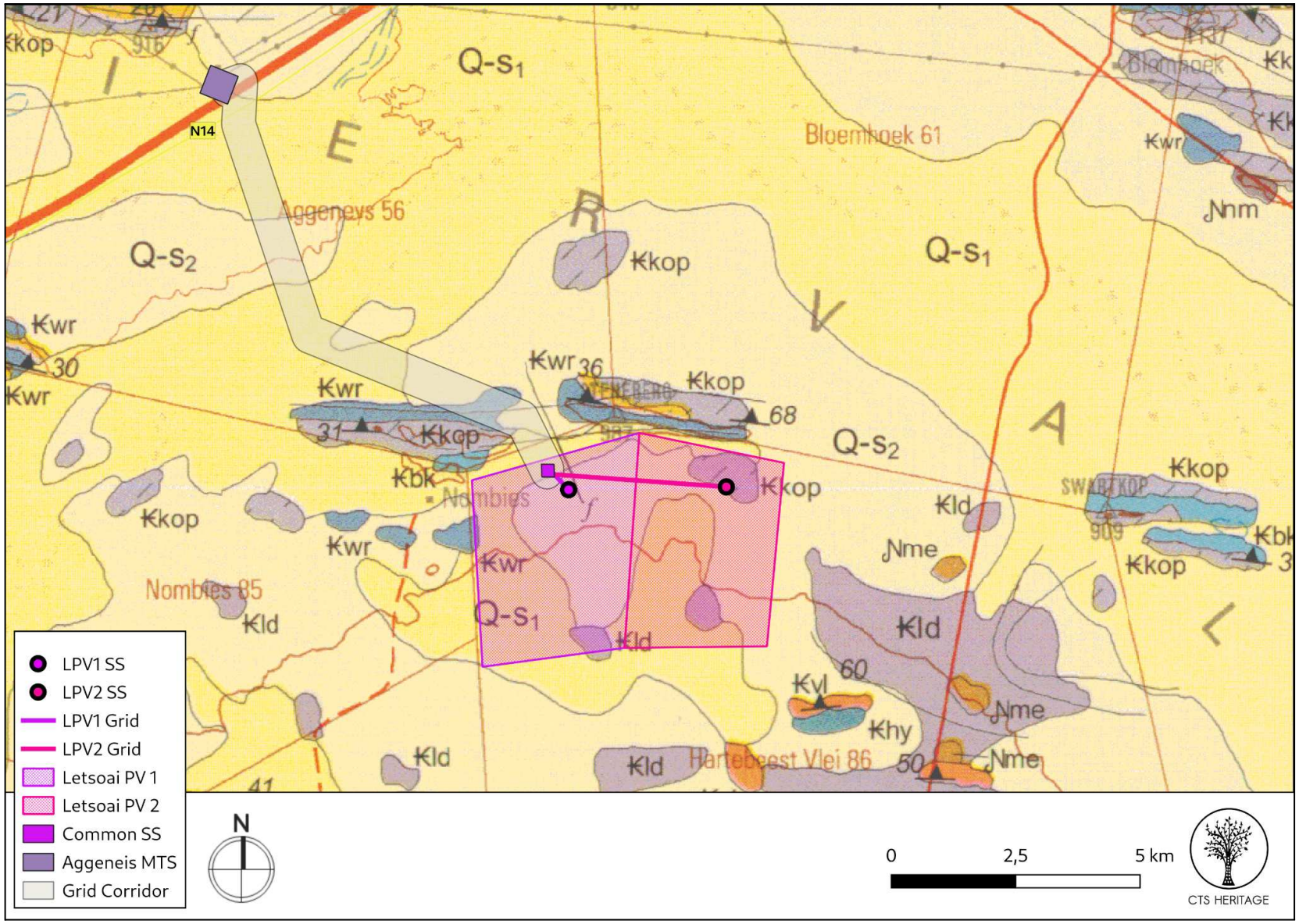

Figure 4b. Geology Map. Extract from the Council of GeoScience Geology Map tile 2918 for Pofadder indicating that the area proposed for development is underlain by Quaternary Sands and Lekkerdrink Gneiss.

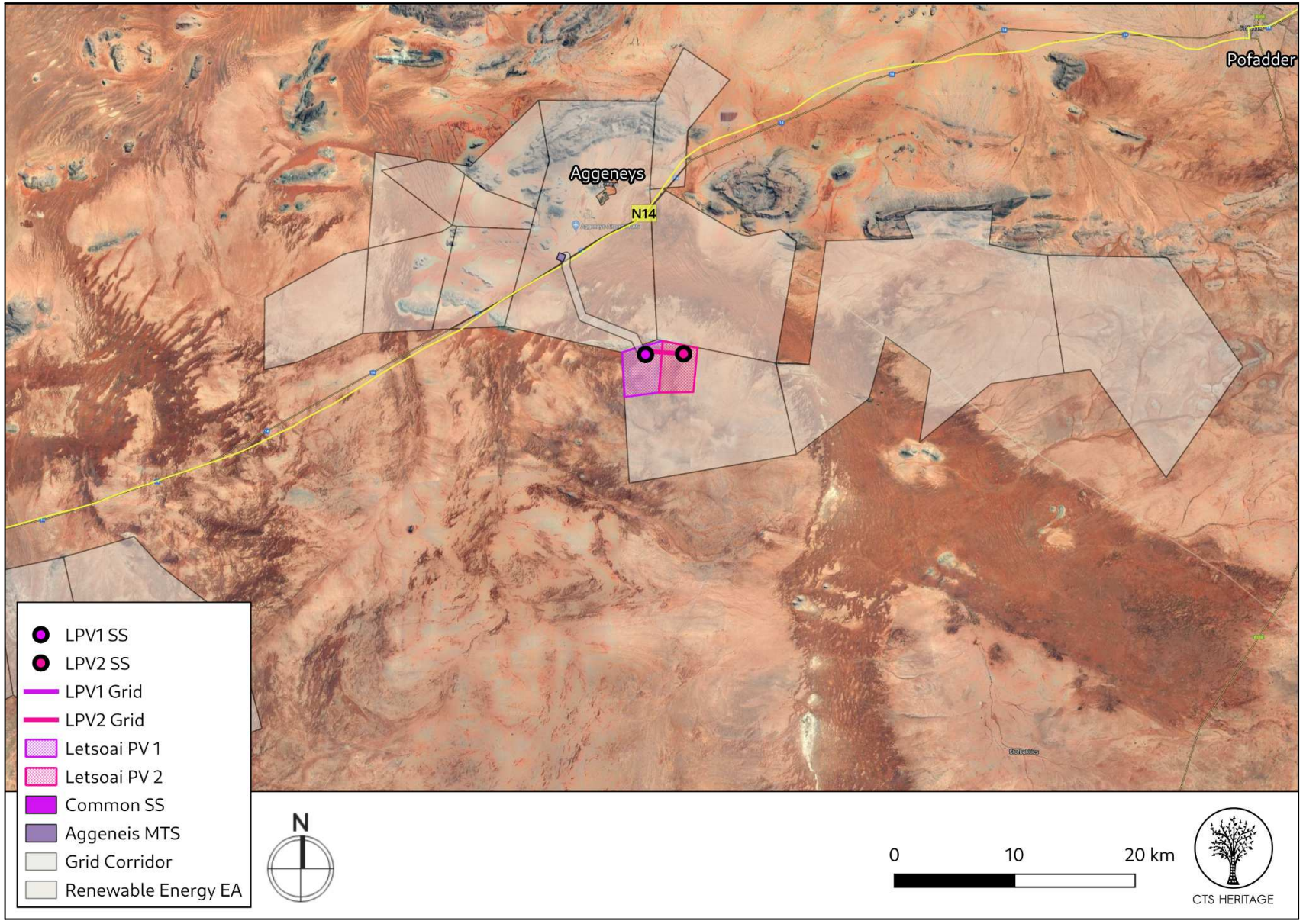

Figure 5. Cumulative Impact Map. Indicating other Renewable Energy Facilities that have been granted Environmental Authorisation (EA).

8. Heritage Assessment

Background

Aggeneys is a mining town established in 1976 on a farm of that name, situated between Pofadder and Springbok in the Northern Cape. This application is for the proposed establishment of a PV and BESS facility just outside of Aggeneys, in an area that has previously been assessed for impacts to heritage resources for an approved CSP development. The area proposed for development has previously been thoroughly assessed for impacts to heritage resources by Webley (2017; SAHRIS NID 389338 and 389339) and this desktop assessment refers extensively to this work. The area proposed for development is described by Morris (2013) as “arid, comprising relatively flat drainage plains with inselbergs such as the Aggeneys Mountains, Black Mountain and Gamsberg rising above the plains in the wider landscape. In the immediate vicinity of the proposed development the predominant topographic feature is the band of dunes running east to west defining the Koa Valley, a fossil relict of a major Miocene drainage line from the interior. The landscape is on the whole sparsely vegetated… (and) includes parts of dune fields and… the adjacent plains to the north and south…”

Cultural Landscape and Built Environment Heritage

The area in general is dominated by heritage associated with copper mining, including the adjacent Black Mountain Mine which is still mined for copper deposits. Prior to 1652, the indigenous peoples (the Khoisan or Nama) of the area extracted raw or "native copper" from the gneiss and granite hills that make up the surrounding Namaqualand Copper belt. This copper was beaten into decorative items, worn as bangles and neck adornments. Early settlers in the Cape Colony heard rumours of mountains in the north-west that were fabulously rich in copper. Governor Simon van der Stel was inclined to believe these tales when, in 1681, a group of Namas visited the Castle in Cape Town and brought along some pure copper. Van der Stel himself led a major expedition in 1685 and reached the fabled mountains on 21 October. Three shafts were sunk and revealed a rich lode of copper ore - the shafts exist to this day. For almost 200 years nothing was done about the discovery, largely because of its remote location. The explorer James Alexander was the first to follow up on van der Stel's discovery. In 1852 he examined the old shafts, discovered some other copper outcrops and started mining operations. Prospectors, miners and speculators rushed to the area, but many companies collapsed when the logistical difficulties became apparent. The first miners were Cornish, and brought with them the expertise of centuries of tin-mining in Cornwall. The ruins of the buildings they constructed as well as the stonework of the bridges and culverts of the railway built to transport the ore to Port Nolloth, can still be seen. The Namaqualand Railway started operating in 1876 and lasted for 68 years, carrying ore to Port Nolloth and returning with equipment and provisions. The historical built environment heritage resources associated with the Namaqualand Copper Mining Landscape form a significant part of the cultural landscape of this area.

Additional built environment heritage resources that are known from this area include corbelled buildings and built structures associated with the colonial frontier. Based on the

information available, no such built environment or cultural landscape resources fall within the area proposed for development. However, Webley and Halkett (2012, SAHRIS NID 9110) note that appreciation has started emerging regarding the “genocide against the Bushmen in this area, with certain mountainous areas (like Gamsberg and Namiesberg located within very close proximity to the proposed development area - Figure 3d) being likely massacre sites”. This has resulted in moves to include the Gamsberg in a potential /Xam and Khomani Heartland World Heritage Site. According to Morris (2013), “the southern/south eastern side of Gamsberg was the site of an incident in which a group of San were cornered and shot – part of what historians now characterise as a genocide against the indigenous people of the region. Some evidence suggests that this most likely took place in the kloof known as ‘Inkruip’ (‘Creep in’).”

In Webley’s assessment (2017) of this specific area she noted that “No impacts are anticipated on the Built Environment; Impacts to the Cultural Landscape and the N14 are low because the proposed facilities will be shielded by a low rise of hills. There will be no direct impact on the Gamsberg.” Due to the similar nature of the proposed PV and BESS facility in the same location as the CSP, no impacts to the cultural landscape or built environment heritage are anticipated from this proposed development.

Archaeology

Prior to colonial settlement, this area was occupied by Khoe and San people, as evidenced by the number of Khoe and San names still evident in the landscape (such as Aggeneys). According to Morris (2013, SAHRIS NID 155934), Later Stone Age (LSA) resources are the predominant archaeological trace known from this broader area, with Early (ESA) and Middle Stone Age (MSA) resources occuring in much lower densities and all known archaeological resources associated with rocky outcrops and duns sands. A number of detailed archaeological assessments have been conducted in the broader area by Halkett and Webley (2012, SAHRIS NID 9110) for a proposed solar energy facility, Smith (2012, SAHRIS NID 334) and Morris (2011, SAHRIS NID 7871). Halkett and Webley (2012) noted that “Stone artefacts scatters from the Middle Stone Age are sparsely distributed across the study area and are found on gravel pavements between the vegetation; The absence of associated archaeological material, and lack of discrete individual sites reduces the significance of the material overall; Further mitigation of sites is considered unnecessary in this case. There are no buildings of heritage significance on the site.” Smith (2012) noted that “Tracks, dry pans and sub-surface indications using spring-hare and aardvark holes all produced widely scattered material with no concentrations of note.” Similar conclusions were reached by Morris (2011). The specific area proposed for development was assessed by Morris (2013; SAHRIS NID 155934). Morris (2013) found “extremely low to zero incidence of any form of artefact whatsoever, whether Stone Age or colonial in age, over most of the area”. Significant heritage resources identified by Morris (2013) are all mapped in Figures 3a to 3c and include Later Stone Age artefact scatters including stone tools, pottery and ostrich eggshell flask fragments and LSA grinding grooves, possible unmarked burials, colonial era stone walling and glass and porcelain fragments

As per the findings of Morris (2013), it is predicted that “features such as rock outcrops or the immediate footslopes of hills might be places where Stone Age and probably also colonial era traces would occur, if present. Previous experience has shown that the flat plains away from such features are almost entirely bereft of heritage traces. The dunes may also have been a focus of past human activity.” As such, based on the location of the proposed development area in the flat plains and the fact that no known heritage resources have been identified within the development footprint (despite the completion of a foot survey by Morris (2013)), it is very unlikely that the proposed development will impact on significant archaeological resources.

Webley (2017) found that the specific area proposed for development “is characterised by a low level (ephemeral) spread of quartz artefacts. They do not occur in sufficient densities in specific areas to be considered as “sites”. The artefacts comprise cores, chunks and flakes. No diagnostic artefacts were identified. The weathering of the artefacts suggests that they may be of Middle Stone Age origins. They are of low significance; There is a single large exposure of bedrock to the south (outside) of the study area with bedrock grinding grooves and LSA archaeological remains. This site is of medium significance but it is outside the study area and will not be impacted. No archaeological sites were identified along the route of the water pipeline to the Orange River; The area around the Pelladrift pump station on the Orange River has been significantly disturbed and our survey did not identify any undisturbed areas along the river which might contain in situ archaeological sites or graves.” Webley (2017) concluded that the likely impact of the development of the CSP to archaeological resources is very low.

Due to the stable nature of the geology with limited erosion, and due to the similar nature of the anticipated impacts from the PV and BESS facility, it is anticipated that the likely impacts to archaeological heritage from the PV facility is also very low and no further specialist archaeological assessment is recommended.

Palaeontology

The area proposed for development is overlain with Quaternary cover sands (of low palaeontological sensitivity), and is underlain by granites of the Koeipoort Formation and quartzite of the Wortel Formation (of zero palaeontological sensitivity). The general area has been subject to numerous palaeontological impact assessments. Butler (2016, SAHRIS NID 406396) notes that “The broader area near Aggeneys is underlain by the Mid-Proterozoic (Mokolian) basement rocks of the Namaqua-Natal Metamorphic Province (Bushmanland Group) as well as Cenozoic superficial deposits. The Proterozoic granite-gneiss basement rocks of the Namaqua-Natal Metamorphic Province do not contain any fossils because they are igneous in origin or too highly metamorphosed and their palaeontological sensitivity is similarly low. The low palaeontological sensitivity of the Cenozoic superficial deposits can be attributed to the scarcity of fossil heritage in these deposits. In Palaeontological terms the significance is thus rated as LOW (negative). Consequently, pending the discovery of significant new fossil material here, no further specialist studies are considered to be necessary.” Pether reaches a similar conclusion in his assessment (2012, SAHRIS NID 15982)

noting of the general area that the “bedrock underlying the property is unfossiliferous and of no palaeontological interest.”

In his Desktop Palaeontology Assessment completed for the CSP project located in the same development footprint as this project, Almond (2016) notes that “In terms of palaeontological sensitivity outcrop areas of basement rocks are very low while the overlying Late Caenozoic superficial deposits (alluvium, gravels, aeolian sands etc) are generally of low sensitivity. No highly-sensitive palaeontological sites or no-go areas have been identified within the Letsoai CSP site”. The impacts that are anticipated from the proposed PV facility and BESS are very similar to the impacts likely from the CSP facility. As such, it is very unlikely that the proposed development will impact on significant palaeontological heritage resources, however it is recommended that a Chance Fossil Finds Procedure be implemented for the duration of construction activities.

Conclusion

The project developer has updated the project layout to avoid sensitive and no-go areas identified on the project site in line with prescribed specialist mitigation measures. Thus mitigating potential negative impacts associated with the project site. Based on the existing heritage information available for the proposed development in addition to the fieldwork conducted by Webley (2017), it is unlikely that the proposed PV facility and BESS will negatively impact on significant heritage resources. There is no heritage objection to the proposed development. Furthermore, due to the number of Renewable Energy Facility projects in the immediate vicinity of this development that have already been granted Environmental Authorisation (EA, Figure 5), it is likely that this project will have low levels of cumulative impact significance for Heritage (archaeology, palaeontology and cultural landscape). That being said, due to the general heritage sensitivity of the broader context, it is recommended that:

- If concentrations of historical and pre-colonial archaeological heritage material and/or human remains (including graves and burials) are uncovered during construction, all work in the vicinity must cease immediately and be reported to the South African Heritage Resources Agency (SAHRA) so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the pre-colonial shell middens and associated artefacts will then be conducted to establish the contextual status of the sites and possibly remove the archaeological deposit before development activities continue.
- The attached Chance Fossil Finds Procedure must be implemented for the duration of construction activities
- Should substantial fossil remains such as vertebrate bones and teeth, plant-rich fossil lenses, fossil wood or dense fossil burrow assemblages be exposed during construction, the responsible ECO/EO/Environmental Representative should safeguard these, preferably in situ, and alert SAHRA, i.e. The South African Heritage Resources Authority, as soon as possible (Contact details: Mr P. Hine P.O. Box 4637, Cape Town 8000. Tel: 021 462 4502. Email: phine@sahra.org.za) so that appropriate action can be taken by a

professional palaeontologist, at the Proponent's expense. Mitigation would normally involve the scientific recording and judicious sampling or collection of fossil material as well as associated geological data (e.g. stratigraphy, sedimentology, taphonomy) by a suitably qualified palaeontologist.

9. Impact Assessment Table

NATURE: Significant archaeological, built environment and palaeontological heritage resources may be impacted by the construction phase of the proposed expansion								
		Archaeology, Built Environment and Cultural Landscape without Mitigation		**Archaeology, Built Environment and Cultural Landscape with Mitigation**		**Palaeontology without Mitigation**		**Palaeontology with Mitigation**
MAGNITUDE	**L (1)**	No significant heritage resources were identified within the proposed development footprint	**L (1)**	No significant heritage resources were identified within the proposed development footprint	**L (1)**	The sediments underlying the proposed development have low palaeontological sensitivity.	**L (1)**	The sediments underlying the proposed development have low palaeontological sensitivity.
DURATION	**H (5)**	Where manifest, the impact will be permanent.	**H (5)**	Where manifest, the impact will be permanent.	**H (5)**	Where manifest, the impact will be permanent.	**H (5)**	Where manifest, the impact will be permanent.
EXTENT	**L (1)**	Localised within the site boundary	**L (1)**	Localised within the site boundary	**L (1)**	Localised within the site boundary.	**L (1)**	Localised within the site boundary.
PROBABILITY	**L (1)**	Probability is low	**L (1)**	Probability is low	**L (1)**	Probability is low	**L (1)**	Probability is low
SIGNIFICANCE	**L**	(1+5+1)x1=7 (Low)	**L**	(1+5+1)x1=7 (Low)	**L**	(1+5+1)x1=7 (Low)	**L**	(1+5+1)x1=7 (Low)
STATUS		Neutral		Neutral		Negative		Neutral
REVERSIBILITY	**L**	Any impacts to heritage resources that do occur are irreversible	**L**	Any impacts to heritage resources that do occur are irreversible	**L**	Any impacts to heritage resources that do occur are irreversible	**L**	Any impacts to heritage resources that do occur are irreversible
IRREPLACEABLE LOSS OF RESOURCES?	**L**	Possible	**L**	Possible	**L**	Possible	**L**	Possible
CAN IMPACTS BE MITIGATED		NA				Yes		
MITIGATION: ● The attached Chance Fossil Finds Procedure must be implemented for the duration of the construction phase								
RESIDUAL RISK: ● If concentrations of archaeological heritage material and human remains or fossils are uncovered during construction, all work must cease immediately and be reported to SAHRA so that systematic and professional investigation/ excavation can be undertaken.								

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

Site ID	Site no	Full Site Name	Site Type	Grading
140063	FHV/86-001	FARM HARTEBEEST VLEI 86	Artefacts	Ungraded
140064	FHV/86-002	FARM HARTEBEEST VLEI 86	Artefacts	Ungraded
140065	FHV/86-003	FARM HARTEBEEST VLEI 86	Artefacts	Ungraded
140066	FHV/86-004	FARM HARTEBEEST VLEI 86	Artefacts	Ungraded
140067	FHV/86-005	FARM HARTEBEEST VLEI 86	Artefacts	Ungraded
140068	FHV/86-006	FARM HARTEBEEST VLEI 86	Artefacts	Ungraded
140069	FHV/86-007	FARM HARTEBEEST VLEI 86	Artefacts	Ungraded
140070	FHV/86-008	FARM HARTEBEEST VLEI 86	Artefacts	Grade IIIc
140071	FHV/86-009	FARM HARTEBEEST VLEI 86	Artefacts	Grade IIIc
140074	FHV/86-012	FARM HARTEBEEST VLEI 86	Artefacts	Ungraded
140075	FHV/86-013	FARM HARTEBEEST VLEI 86	Artefacts	Ungraded
140076	FHV/86-014	FARM HARTEBEEST VLEI 86	Artefacts	Grade IIIa
140077	FHV/86-015	FARM HARTEBEEST VLEI 86	Artefacts	Grade IIIa
140078	FHV/86-016	FARM HARTEBEEST VLEI 86	Artefacts	Grade IIIa
140079	FHV/86-017	FARM HARTEBEEST VLEI 86	Artefacts	Grade IIIa
140080	FHV/86-018	FARM HARTEBEEST VLEI 86	Artefacts	Grade IIIa
140081	FHV/86-019	FARM HARTEBEEST VLEI 86	Artefacts	Grade IIIa

140082	FHV/86-020	FARM HARTEBEEST VLEI 86	Artefacts	Grade IIIa
140083	FHV/86-021	FARM HARTEBEEST VLEI 86	Artefacts	Grade IIIa
140085	FHV/86-023	FARM HARTEBEEST VLEI 86	Artefacts	Grade IIIa
140094	FHV/86-032	FARM HARTEBEEST VLEI 86	Artefacts	Grade IIIa
140095	FHV/86-033	FARM HARTEBEEST VLEI 86	Artefacts	Grade IIIa
140096	FHV/86-034	FARM HARTEBEEST VLEI 86	Artefacts	Grade IIIa
140097	FHV/86-035	FARM HARTEBEEST VLEI 86	Artefacts	Grade IIIa
140100	FHV/86-038	FARM HOUTHAALDOORNS 2	Artefacts	
140101	FHV/86-039	FARM HARTEBEEST VLEI 86	Artefacts	
140102	FHV/86-040	FARM HARTEBEEST VLEI 86	Artefacts	
140103	FHV/86-041	FARM HARTEBEEST VLEI 86	Artefacts	
140104	FHV/86-042	FARM HARTEBEEST VLEI 86	Artefacts	
140106	FHV/86-043	FARM HARTEBEEST VLEI 86	Artefacts	
140110	FHV/86-044	FARM HARTEBEEST VLEI 86	Artefacts	
140120	FHV/86-048	FARM HARTEBEEST VLEI 86	Artefacts	
140121	FHV/86-049	FARM HARTEBEEST VLEI 86	Artefacts	
140122	FHV/86-050	FARM HARTEBEEST VLEI 86	Artefacts	
140123	FHV/86-051	FARM HARTEBEEST VLEI 86	Artefacts	
140124	FHV/86-052	FARM HARTEBEEST VLEI 86	Artefacts	
140125	FHV/86-053	FARM HARTEBEEST VLEI 86	Artefacts	

140126	FHV/86-054	FARM HARTEBEEST VLEI 86	Artefacts	
140127	FHV/86-055	FARM HARTEBEEST VLEI 86	Artefacts	
140128	FHV/86-056	FARM HARTEBEEST VLEI 86	Artefacts	
140129	FHV/86-057	FARM HARTEBEEST VLEI 86	Artefacts	
140130	FHV/86-058	FARM HARTEBEEST VLEI 86	Artefacts	
140131	FHV/86-059	FARM HARTEBEEST VLEI 86	Artefacts	
51130	GAMS09	Gamsberg 09	Artefacts	Grade IIIa
45421	BLOEM02	Bloemhoek 02	Artefacts	Grade IIIb
45422	BLOEM03	Bloemhoek 03	Artefacts	Grade IIIb

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APPENDIX 2: Reference List

Heritage Impact Assessments				
Nid	**Report Type**	**Author/s**	**Date**	**Title**
118774	HIA Phase 1	David Morris	01/03/2013	Archaeological and Cultural Heritage Investigation for the Environmental and Social Impact Assessment (ESIA) for the Gamsberg Zinc Mine and Associated Infrastructure in Northern Cape, South Africa
118776	PIA Desktop	John Pether	20/03/2013	Environmental and Social Impact Assessment [ESIA] for the Gamsberg Zinc Mine and Associated Infrastructure, Northern Cape Province PALAEONTOLOGICAL IMPACT ASSESSMENT Desktop Study
155934	HIA Phase 1	David Morris	01/04/2013	HERITAGE IMPACT ASSESSMENT: PROPOSED AGGENEYS PHOTOVOLTAIC SOLAR ENERGY FACILITY AT BLOEMHOEK NEAR AGGENEYS, NORTHERN CAPE PROVINCE
15982	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
9110	HIA Phase 1	Lita Webley, Dave Halkett	01/04/2012	Heritage Impact Assessment: Proposed Aggeneys Photo-voltaic Solar Power Plant on Portion 1 of the Farm Aroams 57, Northern Cape Province

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APPENDIX 3 - Keys/Guides

Key/Guide to Acronyms

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

Full guide to Palaeosensitivity Map legend

	RED:	VERY HIGH - field assessment and protocol for finds is required
	ORANGE/YELLOW:	HIGH - desktop study is required and based on the outcome of the desktop study, a field assessment is likely
	GREEN:	MODERATE - desktop study is required
	BLUE/PURPLE:	LOW - no palaeontological studies are required however a protocol for chance finds is required
	GREY:	INSIGNIFICANT/ZERO - no palaeontological studies are required
	WHITE/CLEAR:	UNKNOWN - these areas will require a minimum of a desktop study.

CTS HERITAGE

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, 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 a member 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 throughout South Africa.