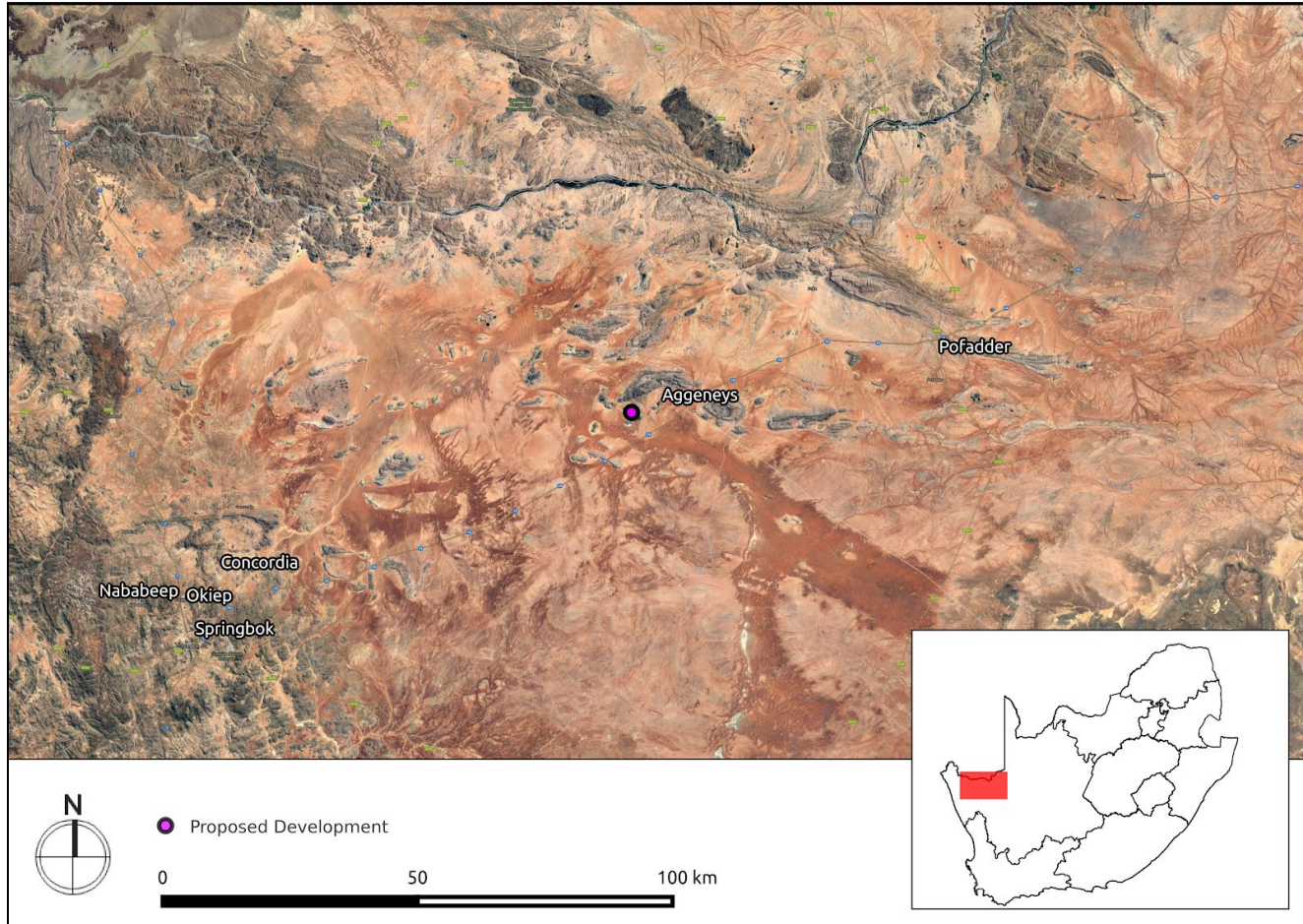


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HERITAGE SCREENER

CTS Reference Number:	CTS18_111	
SAHRIS Reference:	12386	
Client:	EnviroAfrica	
Date:	20 July 2018	
Title:	Proposed Bioremediation site for Black Mountain Mining, Farm Aggeneys 56/1, Aggeneys Northern Cape.	
Recommendation by CTS Heritage Specialists	RECOMMENDATION: The heritage resources in the area proposed for development are sufficiently recorded Based on the available information, including the scale and nature of the proposed development, it is unlikely that any significant heritage resources will be impacted and as such it is recommended that no further heritage studies are required.	



CTS HERITAGE

1. Proposed Development Summary

Black Mountain Mine (BMM) is located next to the town of Aggeneys on Farm 54/1, Farm Aggeneys 56/0 & 56/1 & Farm Zuurwater 62/4. BMM wants to establish a bioremediation site on the mine on Farm 56/1. The purpose of the bioremediation site will be to treat between 500 kg but less than 1 ton of hydrocarbon contaminated soil and cardboard boxes per day. It is proposed that hydrocarbon contaminated soil and cardboard be treated using biological agents and organic matter to break down the hydrocarbon rings. The treated soil and compost will be used as rehabilitation sand. The bioremediation process is eco-friendly, leaving no effect on the environment.

2. Application References

Name of relevant heritage authority(s)	SAHRA
Name of decision making authority(s)	DMR - NC

3. Property Information

Latitude / Longitude	29°15'12.23" S ; 18°47'42.9" E
Erf number / Farm number	Farm 56/1
Local Municipality	Khai-Ma
District Municipality	Namakwa
Previous Magisterial District	Namakwaland
Province	Northern Cape
Current Use	Heavy Industrial
Current Zoning	Mining
Total Extent	Unknown

4. Nature of the Proposed Development

Total Surface Area	630 m ²
Depth of excavation (m)	NA
Height of development (m)	NA
Expected years of operation before decommission	NA

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5. Category of Development

Triggers: Section 38(8) of the National Heritage Resources Act	X
Triggers: Section 38(1) of the National Heritage Resources Act	
1. Construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier over 300m in length.	
2. Construction of a bridge or similar structure exceeding 50m in length.	
3. Any development or activity that will change the character of a site-	
a) exceeding 5 000m ² in extent	
b) involving three or more existing erven or subdivisions thereof	
c) involving three or more erven or divisions thereof which have been consolidated within the past five years	
4. Rezoning of a site exceeding 10 000m ²	
5. Other (state):	

6. Additional Infrastructure Required for this Development

NA

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



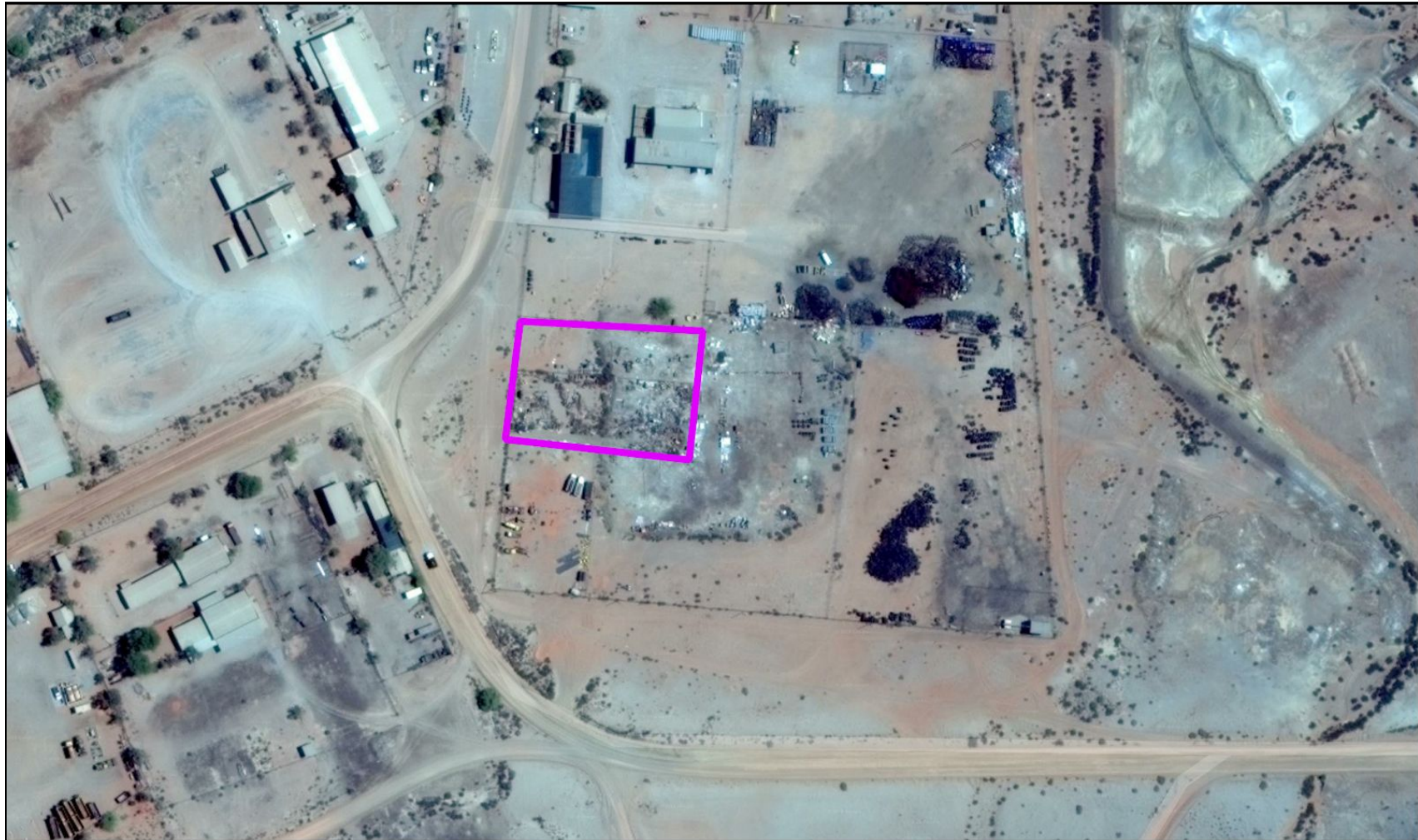
Figure 1b. Overview Map. Satellite image (2017) indicating the proposed development area at closer range.



Figure 1c. Overview Map. Satellite image (2017) indicating the proposed development area at closer range.



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 Bioremediation Site

100 0 100 m



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Figure 1d. Overview Map. Satellite image (2017) indicating the proposed development area at closer range.

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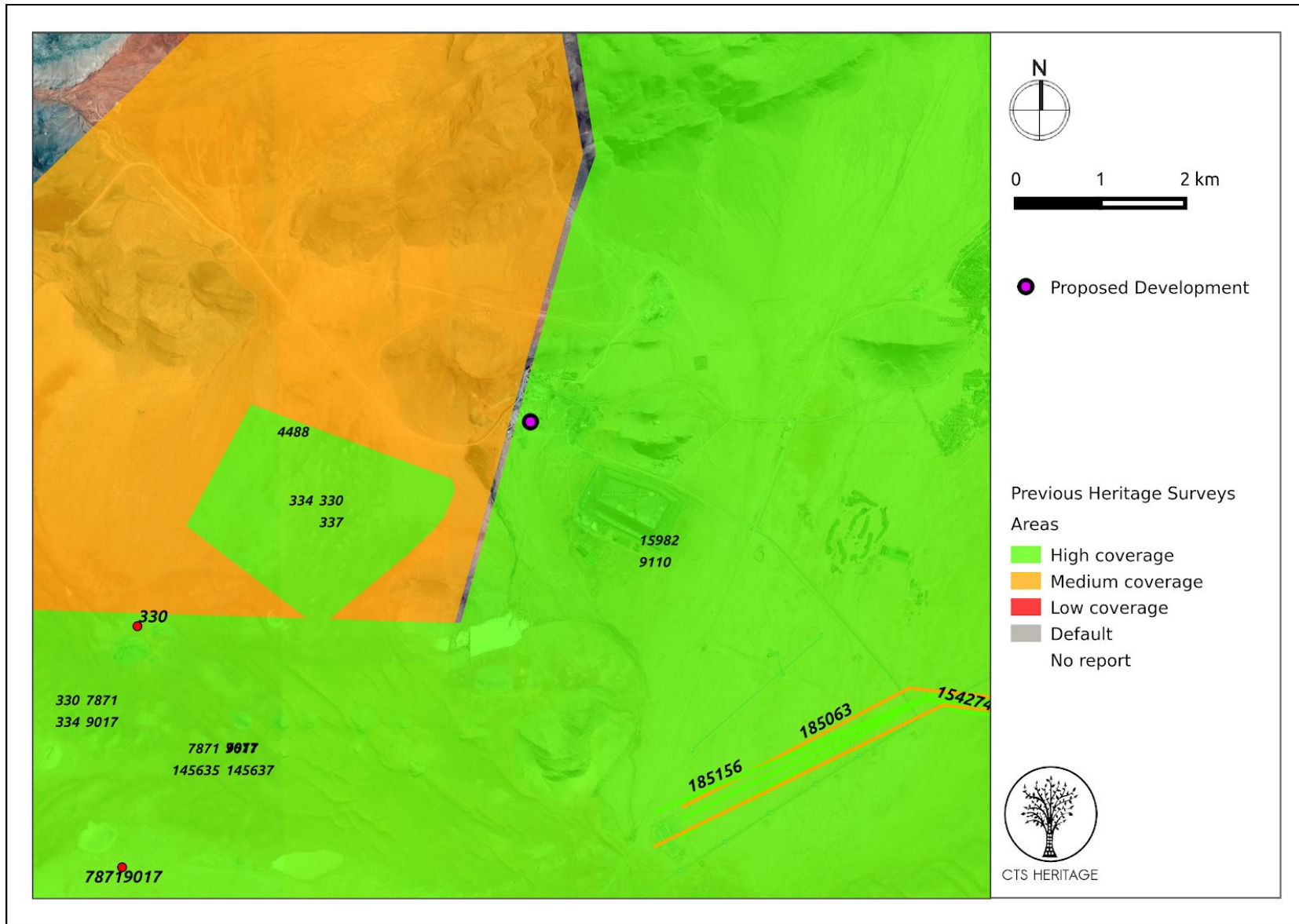
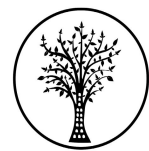


Figure 2a. Previous HIAs Map. Previous Heritage Impact Assessments surrounding the proposed development area within 5km, with SAHRIS NIDS indicated. Please see Appendix 2 for full reference list.

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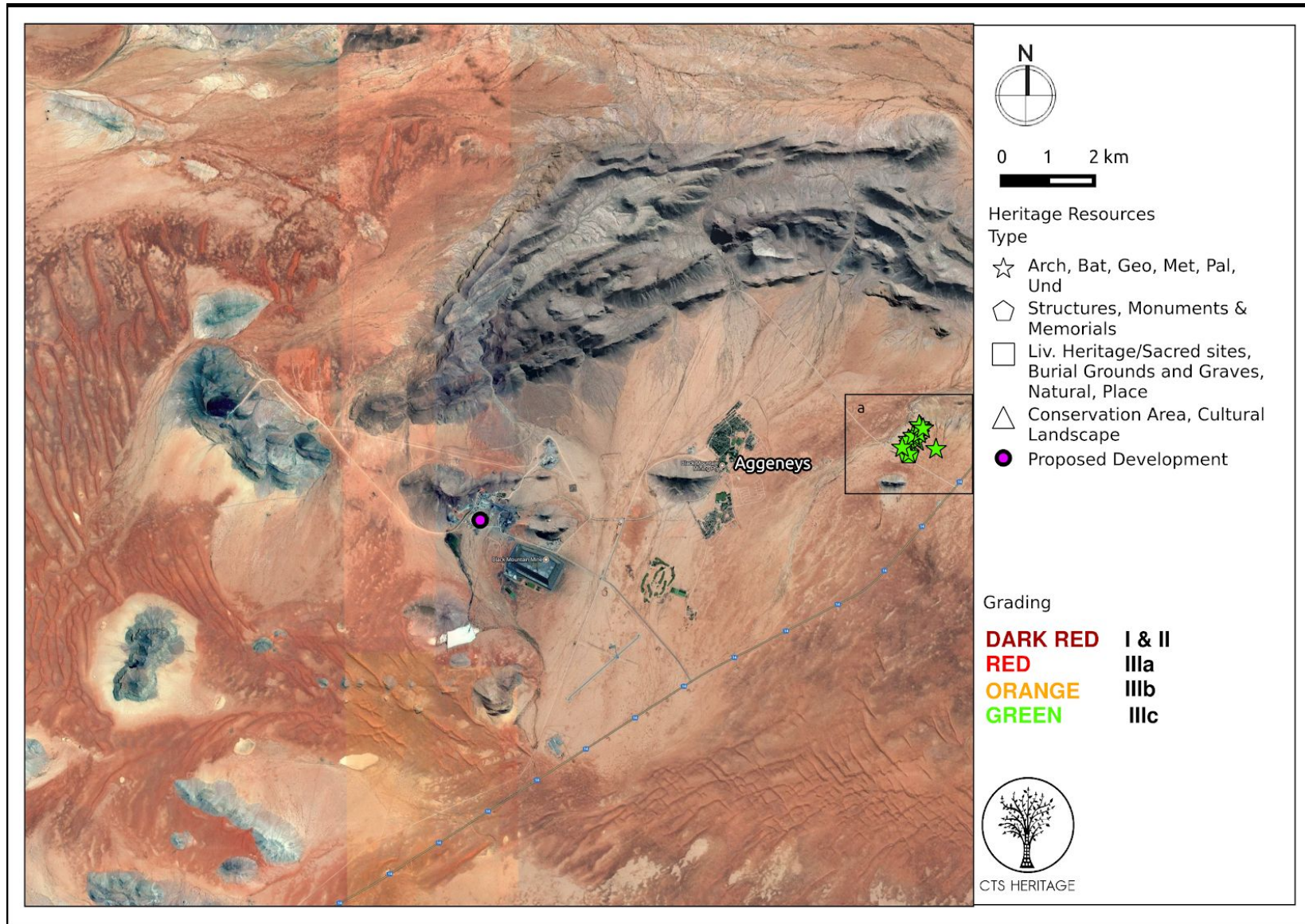


Figure 3. Heritage Resources Map. Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated. Please See Appendix 4 for full description of heritage resource types.

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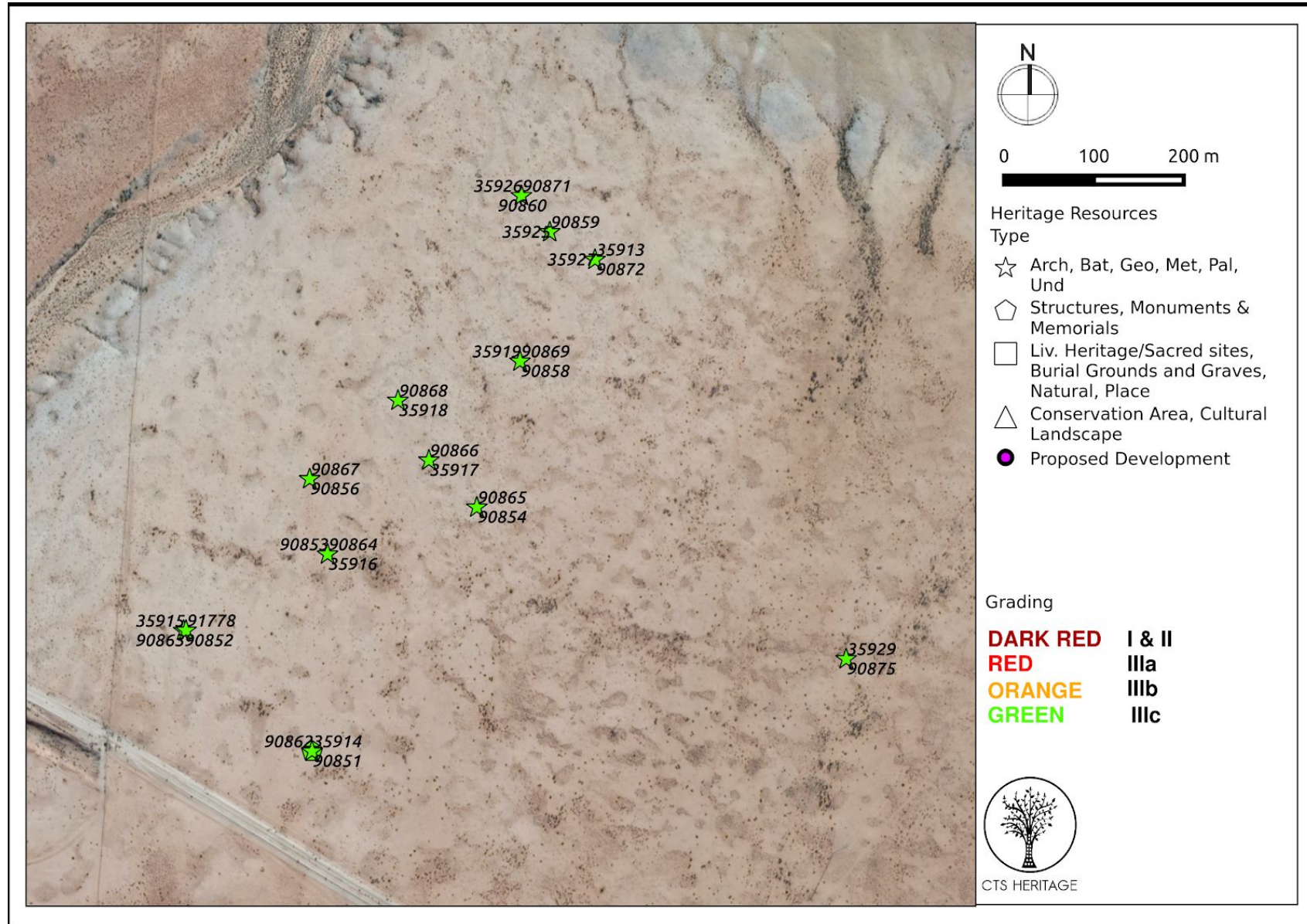


Figure 3a. Heritage Resources Map. Inset Map

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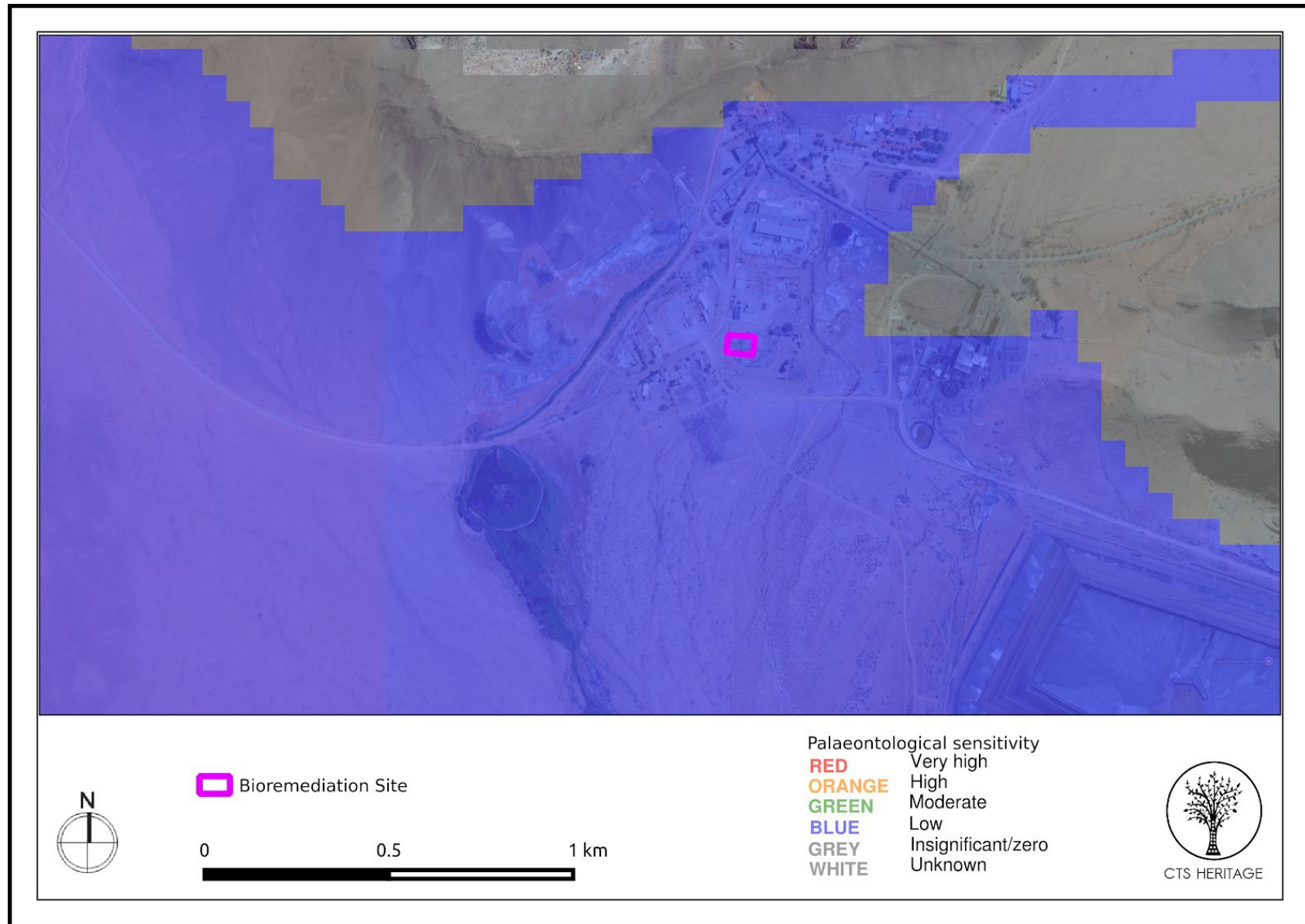
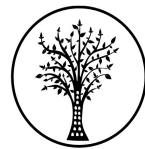


Figure 4. Palaeosensitivity Map. Indicating varied fossil sensitivity underlying the study area. Please See Appendix 3 for full guide to the legend.

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8. Heritage statement and character of the area

Black Mountain Mining (BMM) wishes to establish a bioremediation site to treat between 500 kg but less than 1 ton of hydrocarbon contaminated soil and cardboard boxes per day. Using biological agents, soil and cardboard contaminated by hydrocarbons are treated, breaking down the hydrocarbon rings. This will have a massive cost reduction since all contaminated soils and cardboard at present, is sent to Vissershok, a hazardous waste disposal site. An application was made on SAHRIS for this proposed development on 28 March 2018. A response was received from SAHRA on 26 April 2018 indicating that archaeological and palaeontological “letters of exemption” are required (SAHRIS Case No. 12386).

The area proposed for development has been extensively disturbed through activities associated with the Black Mountain Mine, as the proposed development area is located within the Black Mountain Mine compound. As such, the likelihood of the proposed development impacting on significant archaeological resources is very low. A detailed archaeological assessment was conducted of this area by Halkett and Webley (2012, SAHRIS NID 9110) for a proposed solar energy facility. They 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.” In addition, Smith (2012, SAHRIS NID 334) conducted a field assessment for a proposed solar facility located approximately 1km away from the proposed development area. Smith 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, SAHRIS NID 7871). In addition, the nearest known archaeological resources, according to SAHRIS, are of Grade IIIc significance and are located approximately 8km away from the proposed development area (Figure 3 and Appendix 1). Based on the available information, it is very unlikely that the proposed development will impact on significant archaeological heritage resources.

The area proposed for development is overlain with Quarternary cover sands (of low palaeontological sensitivity), and is underlain by granites of the Koeipoort FM and quartzite of the Wortel Fm (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.” As such, it is very unlikely that the proposed development will impact on significant palaeontological heritage resources.

RECOMMENDATION:

The heritage resources in the area proposed for development are sufficiently recorded

Based on the available information, including the scale and nature of the proposed development, it is unlikely that any significant heritage resources will be impacted and as such it is recommended that no further heritage studies are required.

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APPENDIX 1

List of heritage resources in Map 3a

Site ID	Site no	Full Site Name	Site Type	Grading
35913	ARO006	Aggeneys Orlight 006	Artefacts	Grade IIIc
35914	ARO007	Aggeneys Orlight 007	Structures	Grade IIIc
35915	ARO008	Aggeneys Orlight 008	Artefacts	Grade IIIc
35916	ARO009	Aggeneys Orlight 009	Artefacts	Grade IIIc
35917	ARO010	Aggeneys Orlight 010	Artefacts	Grade IIIc
35918	ARO011	Aggeneys Orlight 011	Artefacts	Grade IIIc
35919	ARO012	Aggeneys Orlight 012	Artefacts	Grade IIIc
35925	ARO013	Aggeneys Orlight 013	Artefacts	Grade IIIc
35926	ARO014	Aggeneys Orlight 014	Artefacts	Grade IIIc
35927	ARO015	Aggeneys Orlight 015	Artefacts	Grade IIIc
35929	ARO017	Aggeneys Orlight 017	Artefacts	Grade IIIc
91778	ASEF001	Aggeneys Solar Energy Facility 001	Artefacts	Grade IIIc
90852	AROA002	Aroams 57/ 002	Artefacts	Grade IIIc
90853	AROA003	Aroams 57/ 003	Artefacts	Grade IIIc
90854	AROA004	Aroams 57/ 004	Artefacts	Grade IIIc
90856	AROA006	Aroams 57/ 006	Artefacts	Grade IIIc
90859	AROA009	Aroams 57/ 009	Artefacts	Grade IIIc
90858	AROA008	Aroams 57/ 008	Artefacts	Grade IIIc
90860	AROA010	Aroams 57/ 010	Artefacts	Grade IIIc
90862	AROA012	Aroams 57/ 012	Artefacts	Grade IIIc
90851	AROA001	Aroams 57/ 001	Artefacts	Grade IIIc
90861	AROA011	Aroams 57/ 011	Artefacts	Grade IIIc

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90863	AROA013	Aroams 57/ 013	Artefacts	Grade IIIc
90864	AROA014	Aroams 57/ 014	Artefacts	Grade IIIc
90865	AROA015	Aroams 57/ 015	Artefacts	Grade IIIc
90866	AROA016	Aroams 57/ 016	Artefacts	Grade IIIc
90867	AROA017	Aroams 57/ 017	Artefacts	Grade IIIc
90868	AROA018	Aroams 57/ 018	Artefacts	Grade IIIc
90869	AROA019	Aroams 57/ 019	Artefacts	Grade IIIc
90870	AROA020	Aroams 57/ 020	Artefacts	Grade IIIc
90871	AROA021	Aroams 57/ 021	Artefacts	Grade IIIc
90872	AROA022	Aroams 57/ 022	Artefacts	Grade IIIc
90875	AROA025	Aroams 57/ 025	Artefacts	Grade IIIc

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APPENDIX 2

Reference List

Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title
330	HIA	Stefan de Kock	01/04/2012	DRAFT PHASE ONE INTEGRATED HERITAGE IMPACT ASSESSMENT COMPILED IN TERMS OF SECTION 38(8) OF THE NATIONAL HERITAGE RESOURCES ACT, 1999 (ACT 25 OF 1999) PROPOSED BOESMANLAND SOLAR FARM (75MW): PORTION (300HA) OF THE FARM ZUURWATER 62/6, NAMAQUALAND DISTRIC
334	AIA	Andrew B Smith	01/03/2012	ARCHAEOLOGICAL REPORT Proposed 75MW Solar Facility on Farm 62 Zuurwater, Aggeneys, Northern Cape Province
337	PIA	John E Almond	01/03/2012	RECOMMENDED EXEMPTION FROM FURTHER SPECIALIST PALAEONTOLOGICAL STUDIES OR MITIGATION: PROPOSED 75 MW SOLAR FACILITY ON FARM ZUURWATER 62 (PORTIONS 2 & 3) NEAR AGGENEYS, NORTHERN CAPE
4488	PIA	Bruce Rubidge	06/08/2007	Palaeontological Desktop Study in Namaqualand
7871	AIA	David Morris	04/12/2011	Sato Energy Holdings Zuurwater Photovoltaic energy generation facility development near Aggeneys, Northern Cape
9017	PIA	John E Almond	28/09/2011	RECOMMENDED EXEMPTION FROM FURTHER SPECIALIST PALAEONTOLOGICAL STUDIES OR MITIGATION: Proposed Sato Energy Holdings (Pty) Ltd photovoltaic project on Portion 3 of Farm Zuurwater 62 near Aggeneys, Northern Cape Province
9110	HIA	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
15982	PIA	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
145635	HIA	David Morris	31/05/2013	Heritage Impact Assessment for Four Solar Energy Facilities on the Farm Zuurwater near Aggeneys, Northern Cape
145637	PIA	John E Almond	30/09/2011	Palaeontological studies
405396	PIA	Elize Butler	30/05/2016	PALAEONTOLOGICAL DESKTOP ASSESSMENT FOR THE PROPOSED AROAMS PROSPECTING RIGHT PROJECT, WITHOUT BULK SAMPLING, NEAR AGGENEYS, NORTHERN CAPE PROVINCE

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APPENDIX 3 - Keys/Guides

Key/Guide to Acronyms

AIA	Archaeological Impact Assessment
DARD	Department of Agriculture and Rural Development (KwaZulu-Natal)
DEA	Department of Environmental Affairs (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

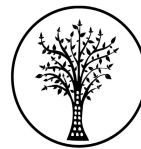
Full guide to Palaeosensitivity Map legend

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 PALAEOONTOLOGICAL 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.

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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

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- 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.

The compilation of the Heritage Screener will not include any field assessment. The Heritage Screener will be submitted to the applicant within 24 hours from receipt of full payment. **If the 24-hour deadline is not met by CTS, the applicant will be refunded in full.**

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