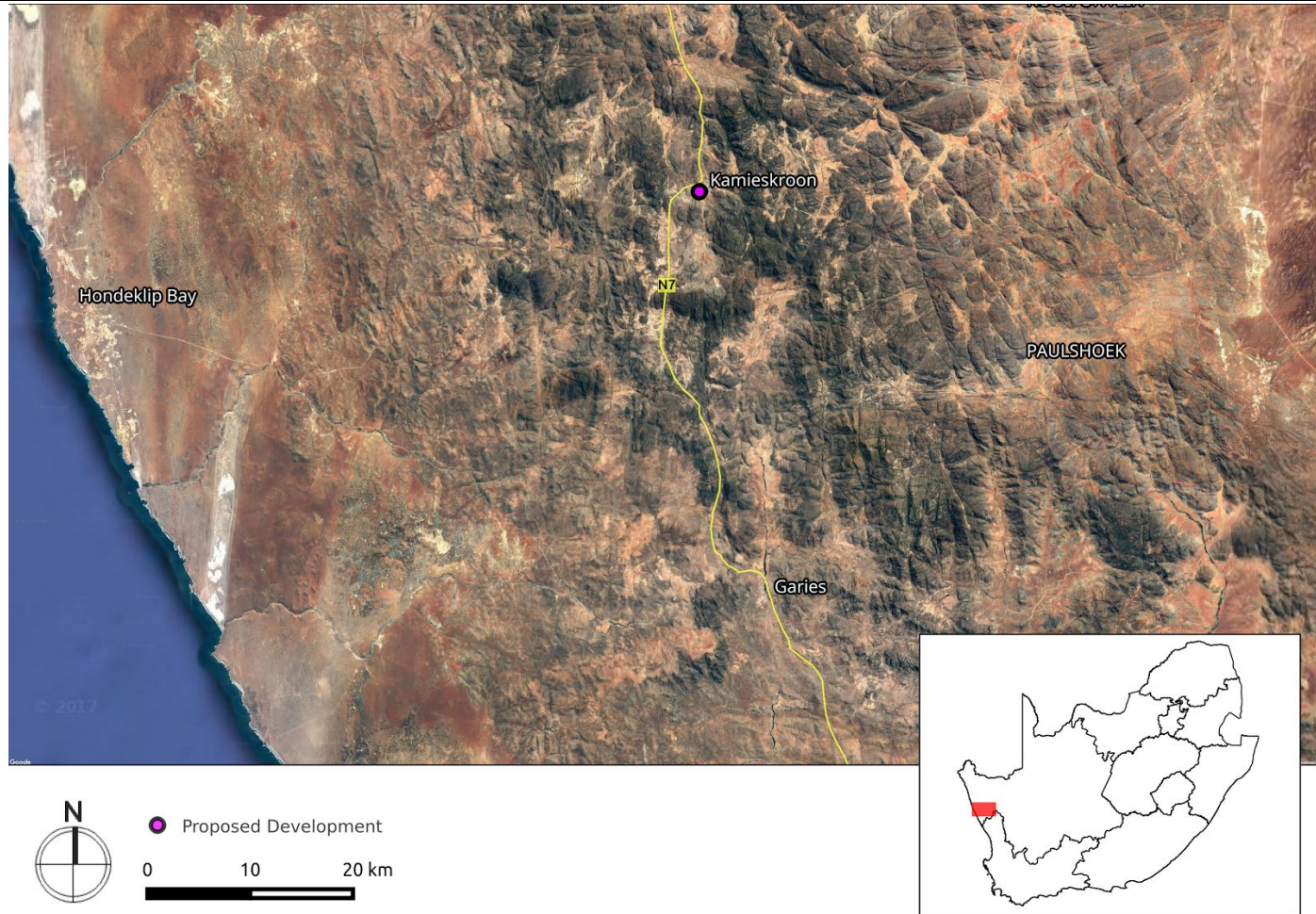
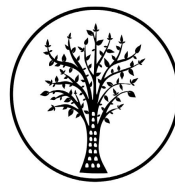


CTS HERITAGE

HERITAGE SCREENER

CTS Number:	Reference	
SAHRIS Case ID:		
Client:	Enviro Africa	
Date:	9 November 2017	
Title:	Kamieskroon Bulk Water Supply	
Recommendation by CTS Heritage Specialists: (Type 1)	RECOMMENDATION: (1) The heritage resources in the area proposed for development are sufficiently recorded See Section 8 for full recommendations.	



CTS HERITAGE

1. Proposed Development Summary

The proposed Kamieskroon Bulk Water Supply System includes the following:

- equipment for existing boreholes,
- equipment for additional boreholes,
- construction of a 600Kl clean water storage reservoir,
- installation of pipelines,
- construction of a Water Treatment Works (desalination plant) and associated evaporation ponds (waste brine).

2. Application References

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

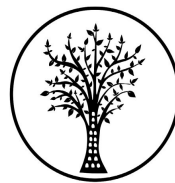
3. Property Information

Latitude / Longitude	-30.216124° / 17.928121°
Erf number / Farm number	Portion 4 of Farm 445
Local Municipality	Kamiesberg Municipality
District Municipality	Namakwa Municipality
Previous Magisterial District	Namakwaland
Province	Northern Cape
Current Use	Vacant
Current Zoning	Agriculture
Total Extent	~0.5 ha

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

4. Nature of the Proposed Development

Total Surface Area	~0.5 ha
Depth of excavation (m)	~1-2m
Height of development (m)	Low - WWTW single storey and pipeline
Expected years of operation before decommission	Unknown

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	X
1. Construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier over 300m in length.	X
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	X
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):	

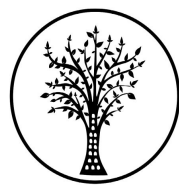
6. Additional Infrastructure Required for this Development

NA

CTS Heritage

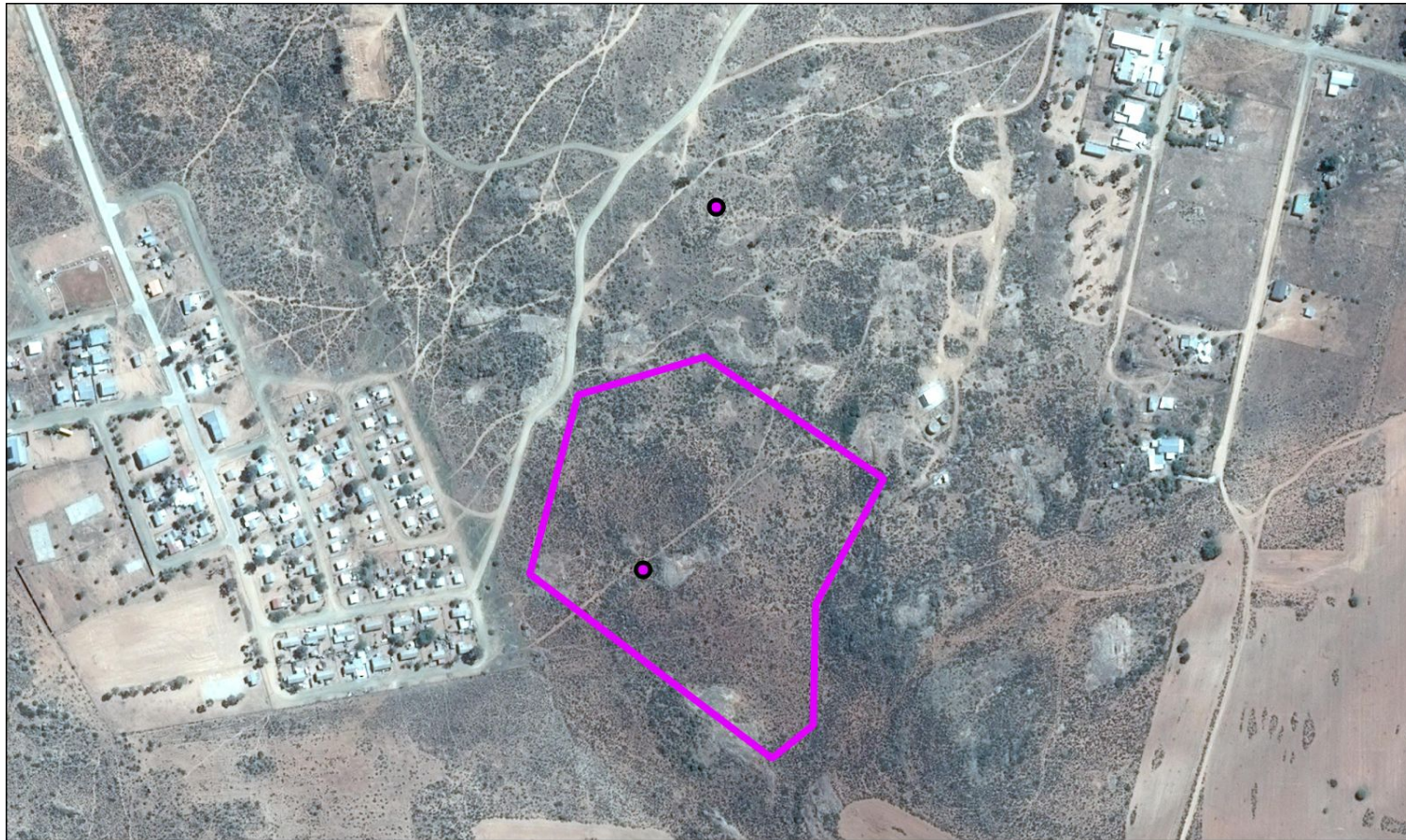
34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

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



● Proposed Development
— Proposed Development

0 0.1 0.2 km



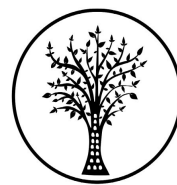
CTS HERITAGE

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

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

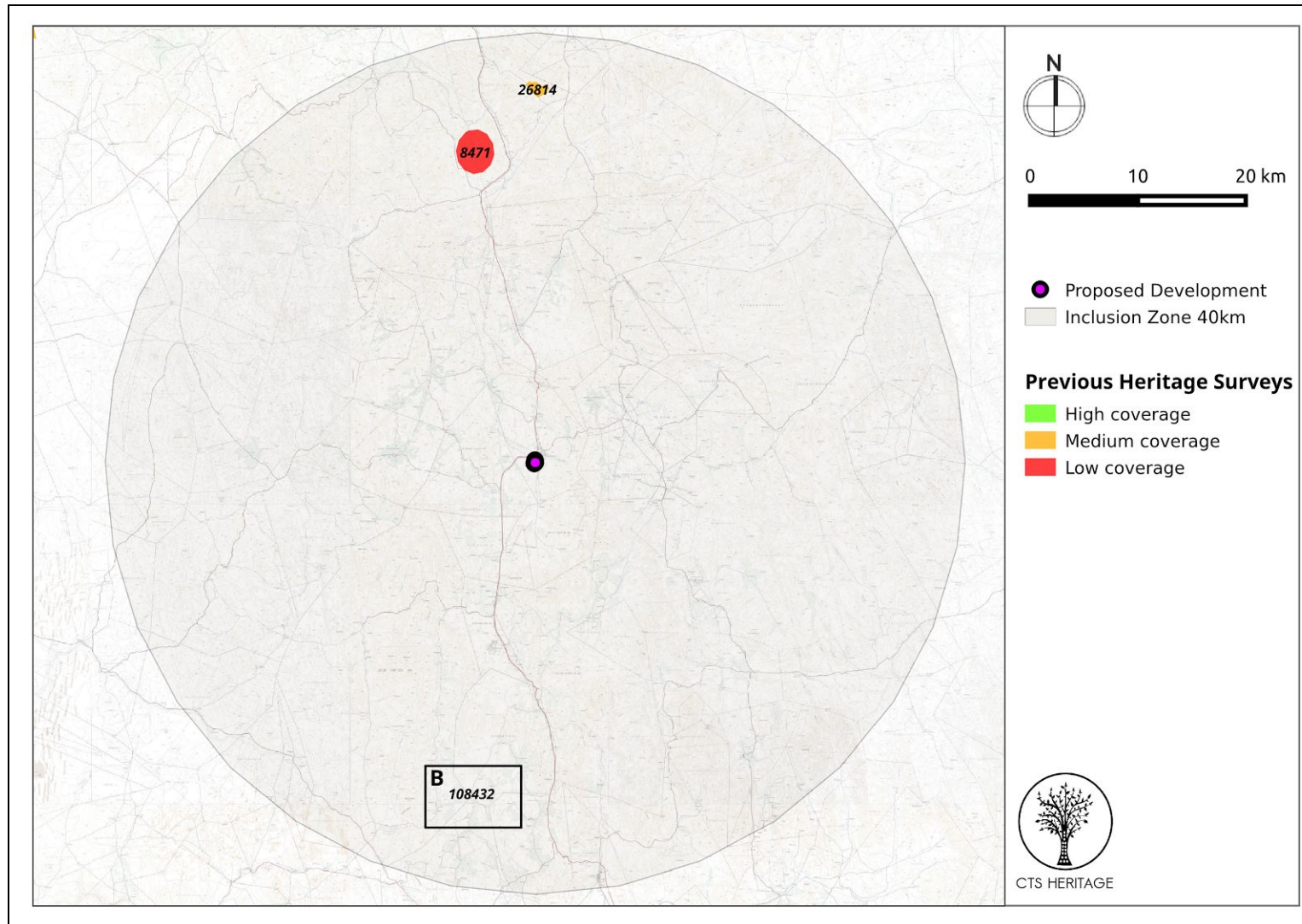
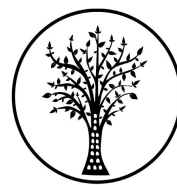


Figure 2a. Previous HIAs Map. Previous Heritage Impact Assessments surrounding the proposed development area within 40kms, with SAHRIS NIDS indicated (see Figure 2b for inset) (please see Appendix 2 for full reference list). Note there are no PIAs within the inclusion zone.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

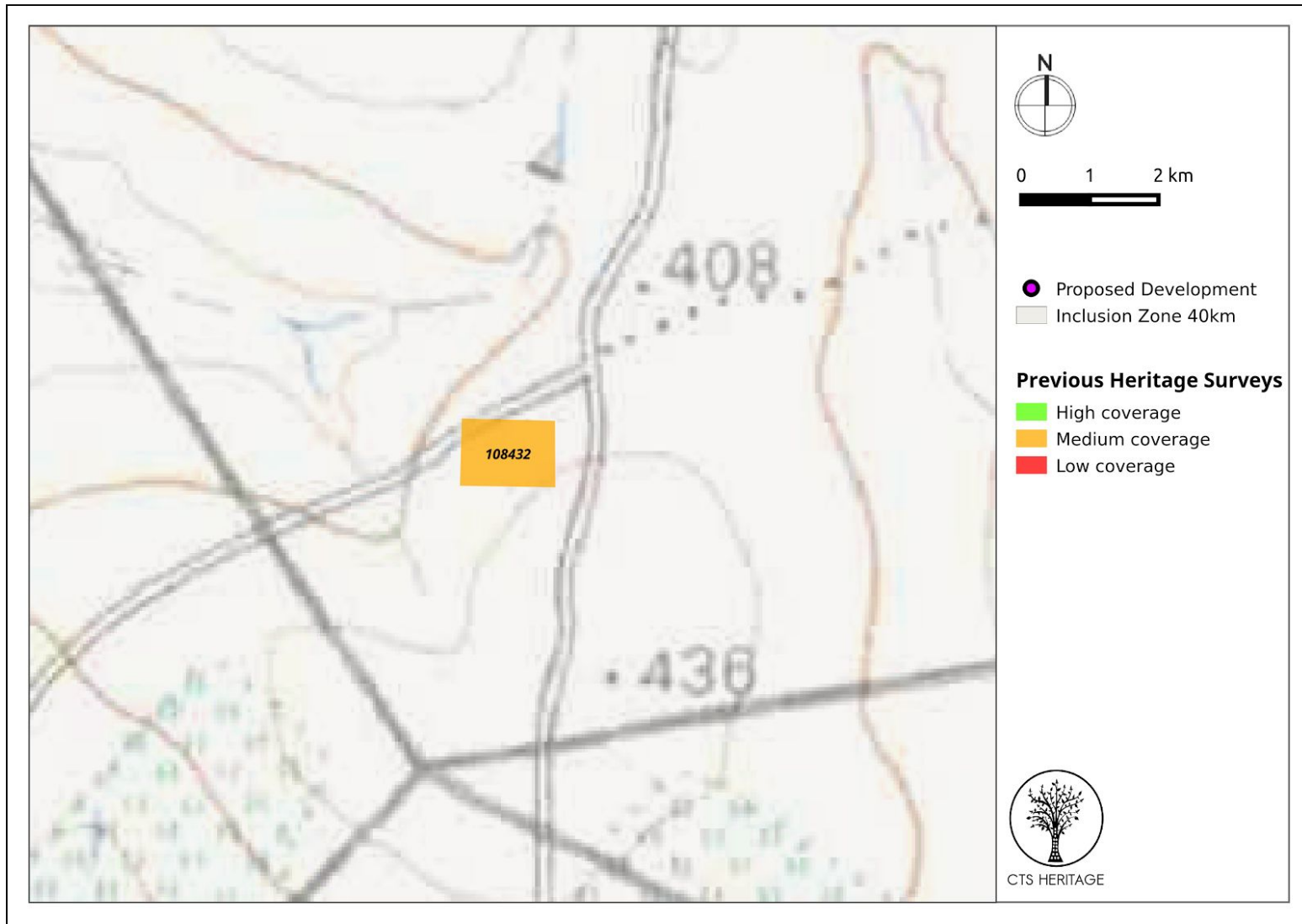
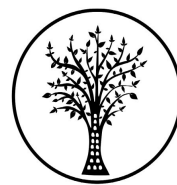


Figure 2b. Inset Map. SAHRIS NID 108432 Heritage assessment.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

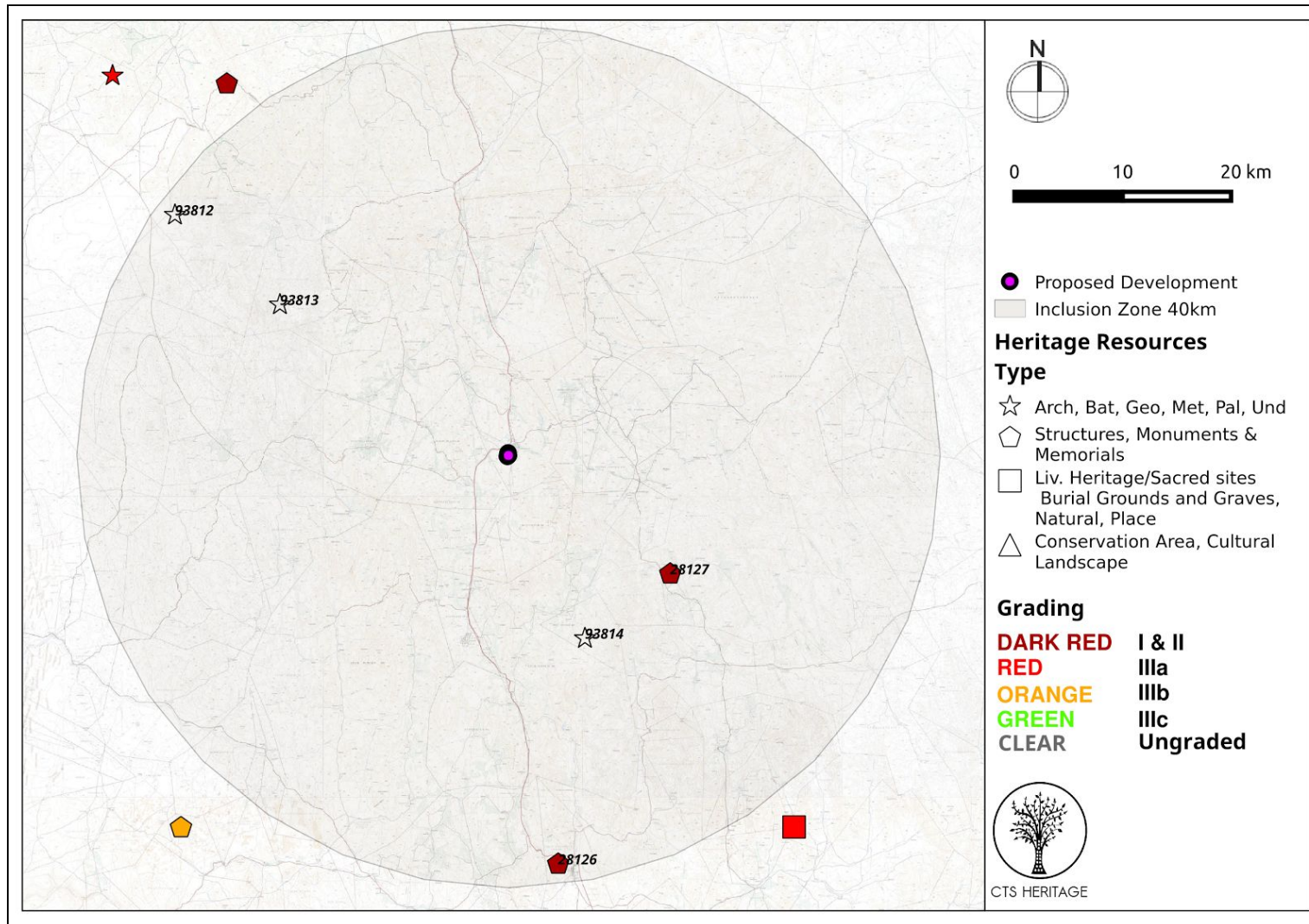
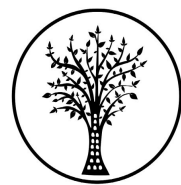


Figure 3. Heritage Resources Map. Heritage resources previously identified in and near the study area, with SAHRIS Site IDs indicated. See Appendix 4 for full description of heritage resource types.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

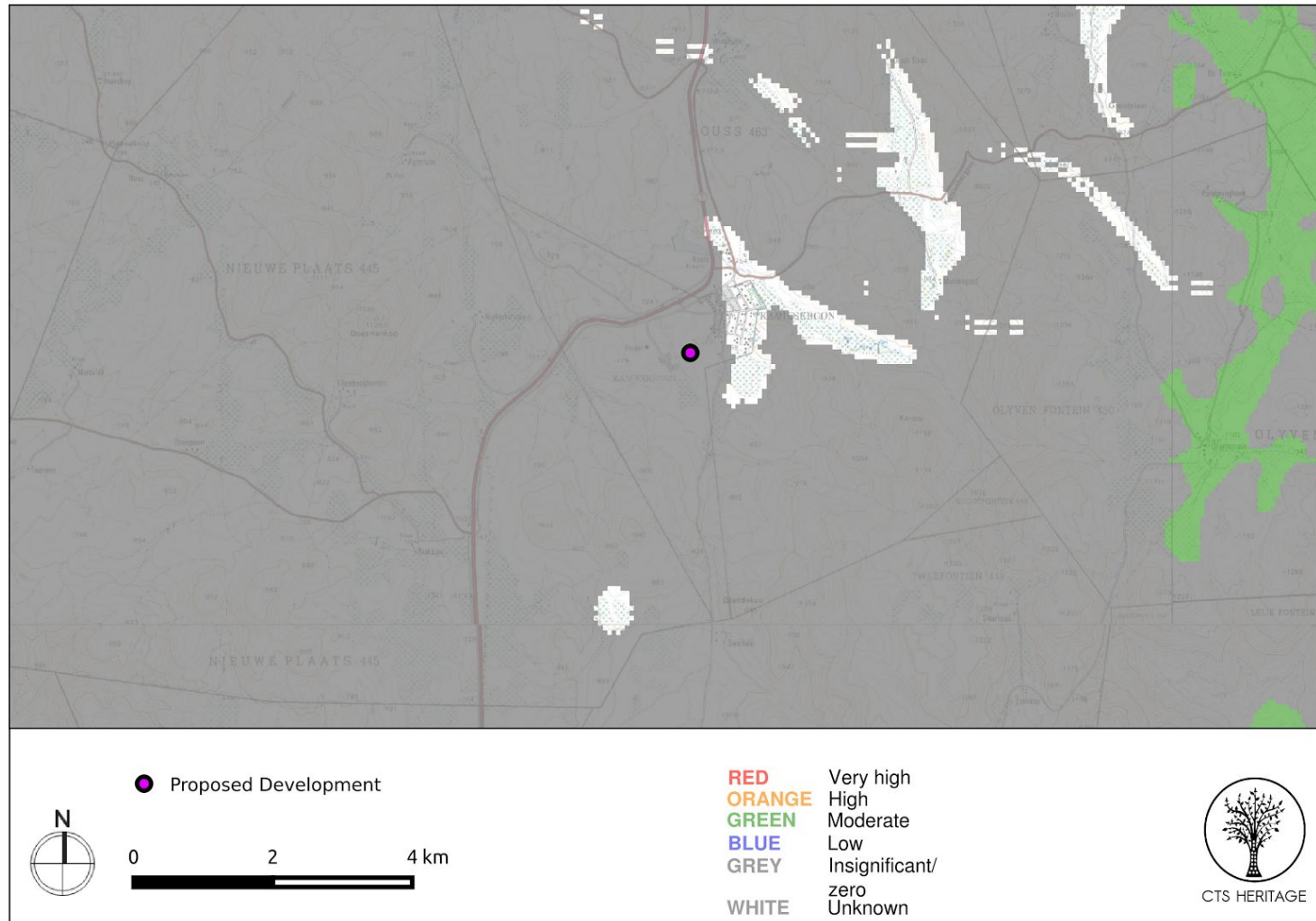
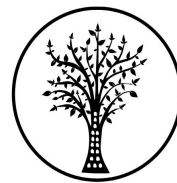


Figure 4. Palaeosensitivity Map, indicating **zero/insignificant fossil sensitivity** underlying the study area. See Appendix 3 for full guide to the legend.



CTS HERITAGE

8. Heritage statement and character of the area

The proposed Kamieskroon Bulk Water Supply System includes equipment for existing boreholes, equipment for additional boreholes, construction of a 600Kl clean water storage reservoir, installation of pipelines, construction of a Water Treatment Works (desalination plant) and associated evaporation ponds (waste brine). At present, the layout of these components has not yet been determined and the applicant has only provided estimated locations for the proposed water treatment works and evaporation ponds, and not the position of boreholes and pipelines. The proposed development will be located on a portion of open ground between the eastern and western extents of Kamieskroon (Figure 1b). The development area comprises open veld that has been disturbed by foot traffic, with several informal paths crisscrossing the area.

The central Namaqualand region has been inhabited since the Early Stone Age (ESA) and was increasingly exploited throughout the Middle and Later Stone Ages (MSA and LSA, respectively). In the period of recent prehistory, the area was home to Khoekhoen who moved seasonally through the landscape with their flocks, a pattern of transhumance that was repeated by the early European settlers in the region. In the early 1800s several Mission Stations were established in the area, and these became settled towns through time. Kamieskroon itself was settled in 1924 after a water shortage forced residents of a nearby village to relocate. Historically, the mining of copper was important to the economy of this region, having been discovered and mined for European trade since the 17th century.

Very few heritage surveys have been conducted in this region, with only three previous archaeological surveys completed within a 40km radius (Figures 2a and 2b). These reports indicate that at least parts of the area are of low archaeological heritage significance (Webley 2012, SAHRIS NID 26814; Gaigher 2012, SAHRIS NID 108432), with recorded finds restricted to a low-density diffuse background scatters of glass and ceramic shards at one location that represents displaced historic domestic refuse (Deacon 2003, SAHRIS NID 8471). This pattern is more likely a consequence of the lack of reconnaissance and research in the area rather than a real lack of archaeological material.

Known heritage sites in the area include two Provincial Heritage Sites, being the Letterklip at Garies (SAHRIS SID 28126) and the Methodist Church and Manse at nearby Leliefontein (SAHRIS SID 28127) (Figure 3). In addition to these declared sites, three rock art sites have been identified within a 40km radius of the development area, two to the northwest (SAHRIS SIDs 93812 and 93813), and one to the southeast (SAHRIS SID 93814); all three are located on rocky ridges or outcrops.

According to the SAHRIS Palaeosensitivity Map (2014) the area is of **insignificant/zero fossil sensitivity**, and is underlain by Mesklip and Hunboom Gneiss which are metamorphosed deposits that are unfossiliferous. While no Palaeontological Impact Assessments have been undertaken in the area, a Letter of Exemption (LOE) compiled by Dr John Almond (2012, SAHRIS NID 108434) some 35kms southwest of the area describes the geology thus: "The Kamieskroon Gneiss...is part of the highly-metamorphosed Late Precambrian rocks of the Garies Terrane (Bushmanland Subprovince, Namaqua-Natal Metamorphic Belt). This bedrock is not fossiliferous. Minor Quaternary regolith and colluvial soil mantles the bedrock, but these deposits are very poorly fossiliferous." (This LOE has not been mapped, but covers the area indicated in Figure 2b by SAHRIS NID 108432).

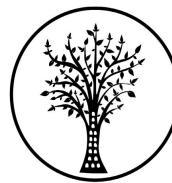
Given the featurelessness of the study area, and its relatively disturbed character, despite the paucity of prior survey work in the area, it is unlikely that any significant archaeological resources will be impacted, similarly, the unfossiliferous nature of the bedrock means that no impacts are likely to significant fossil heritage. No further heritage studies are recommended.

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

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

APPENDIX 1

List of heritage resources within the 40km Inclusion Zone

Site ID	Site no	Full Site Name	Site Type	Grading	Declaration
28126	9/2/066/0011	Letterklip, Garies, Namaqualand District	Building	Grade II	Provincial Heritage Site
28127	9/2/066/0012	Methodist Church and Manse, Leliefontein, Namaqualand District	Building	Grade II	Provincial Heritage Site
93812	Kookfontein 6	Kookfontein 6 Rock Art Site	Rock Art	NA	NA
93813	Canariefontein 1	Canariefontein 1 Rock Art Site	Rock Art	NA	NA
93814	Twee Rivieren	Twee Rivieren Rock Art Site	Rock Art	NA	NA

APPENDIX 2

Reference List

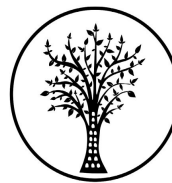
Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title
8471	AIA	Hilary Deacon	26/05/2003	Naroeshuis Report
26814	HIA	Stephan Gaigher	02/05/2012	Heritage Impact Assessment Report Basic Assessment: Proposed Establishment of the Brax Energy Photovoltaic Solar Park on a Portion of the Farm Mesklip 259 near Springbok in the Northern Cape Province
108432	HIA	Lita Webley	06/12/2012	Desktop HIA Brakfontein 431

Palaeontological Impact Assessments				
Nid	Report Type	Author/s	Date	Title
108434	PIA LOE	John Almond	2012	Note in Support of Exemption from a Desktop Palaeontological Impact Assessment: Environmental Management Plan for the Proposed Raumix Aggregates (Pty) Ltd. Quarry on Brakfontein 431, Near Garies, Northern Cape

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

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)
DEDEA	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

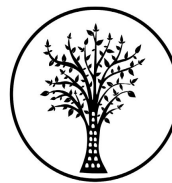
Full guide to Palaeosensitivity Map legend

	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

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



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 PALAEOLOGICAL SENSITIVITY

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

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

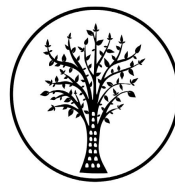
DETERMINATION OF THE COVERAGE RATING ASCRIBED TO A REPORT POLYGON

Each report assessed for the compilation of the Heritage Screener is colour-coded according to the level of coverage accomplished. The extent of the surveyed coverage is labeled in

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

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

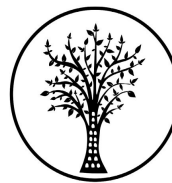
(2) The heritage resources and the area proposed for development are only partially recorded - The surveys undertaken in the area have not adequately captured the heritage resources and/or there are sites which require mitigation or management plans. Further specific heritage work is recommended for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

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

- 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.

The compilation of the Heritage Screener will not include any field assessment.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com