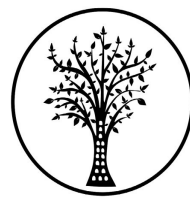


CTS HERITAGE

HERITAGE SCREENER

CTS Number:	Reference CTS17_011	<p data-bbox="772 1145 1227 1257"> </p>
Client:	PHS Consulting	
Date:	28/03/2017	
Title:	Namakwa Prospecting	
Recommendation by CTS Heritage Specialists: (Type 2)	<p data-bbox="772 1289 2083 1321"> Figure 1a. Satellite map indicating the location of the proposed prospecting area in the Northern Cape Province </p> <p data-bbox="347 1340 2161 1460"> RECOMMENDATION: The heritage resources along the routes proposed for development are only partially recorded Based on the available information, the proposed prospecting is unlikely to impact on heritage resources and as such, it is recommended that, at this stage and due to the limited nature of the proposed interventions, no further heritage studies are required See Section 8 for full recommendations. </p>	



CTS HERITAGE

1. Proposed Development Summary

Application is made for non-invasive and invasive prospecting to establish the presence of economic deposits of heavy minerals on four farms located in the Namakwa Municipal District. Prospecting will take place over a 60-month (five year) period, and will initially consist of non- invasive methods (Phase 1), which will include surface mapping and surveying of the deposit(s). Phase 2 will comprise invasive prospecting methods, which will include auger and RC drilling of material. Phases 3 and 4 will respectively comprise off-site sample processing and data analysis, and decision making. Phase 5 will include rehabilitation. Some of these phases will be undertaken in parallel.

2. Application References

Name of relevant heritage authority(s)	Northern Cape Provincial Heritage Resources Authority and SAHRA
Name of decision making authority(s)	Department of Mineral Resources

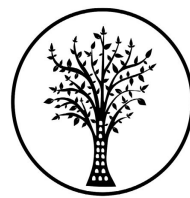
3. Property Information

Latitude / Longitude	16.7008306197 E -28.8927472619 S (centroid); 16.495685361 E -28.5703981929 S (north); 16.8509033257 E -29.2333237653 S (south)
Erf number / Farm number	Farm 1: Portions RE, 8, 9 and Farm 155: Portion 0
Local Municipality	Richtersveld
District Municipality	Namakwa
Previous Magisterial District	Namakwaland
Province	Northern Cape
Current Use	Mining
Current Zoning	Agricultural with Mining Departure/Consent
Total Extent	83,263 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	40,300 ha
Depth of excavation (m)	Phase 1c: 12m, Phase 2a: 15m, Phase 2b: 15m
Height of development (m)	NA
Expected years of operation before decommission	NA

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):	

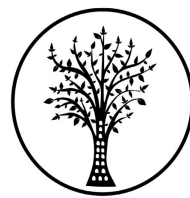
6. Additional Infrastructure Required for this Development

Not available as yet

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)

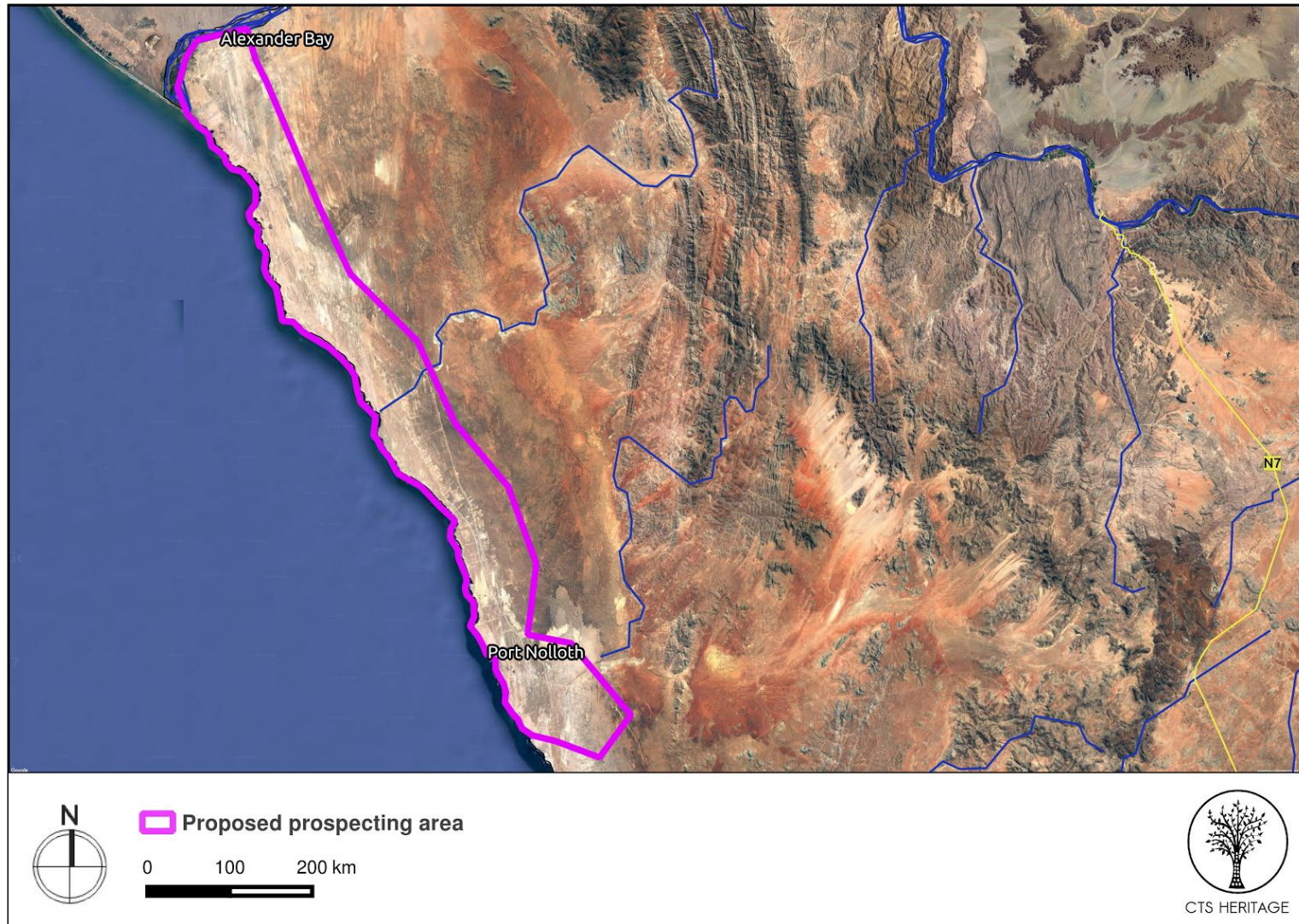
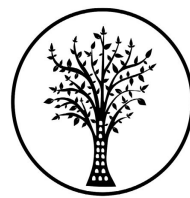


Figure 1b. Overview Map. Satellite image (2017) indicating the proposed prospecting area at closer range, with the Holgat Rivier transecting it.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

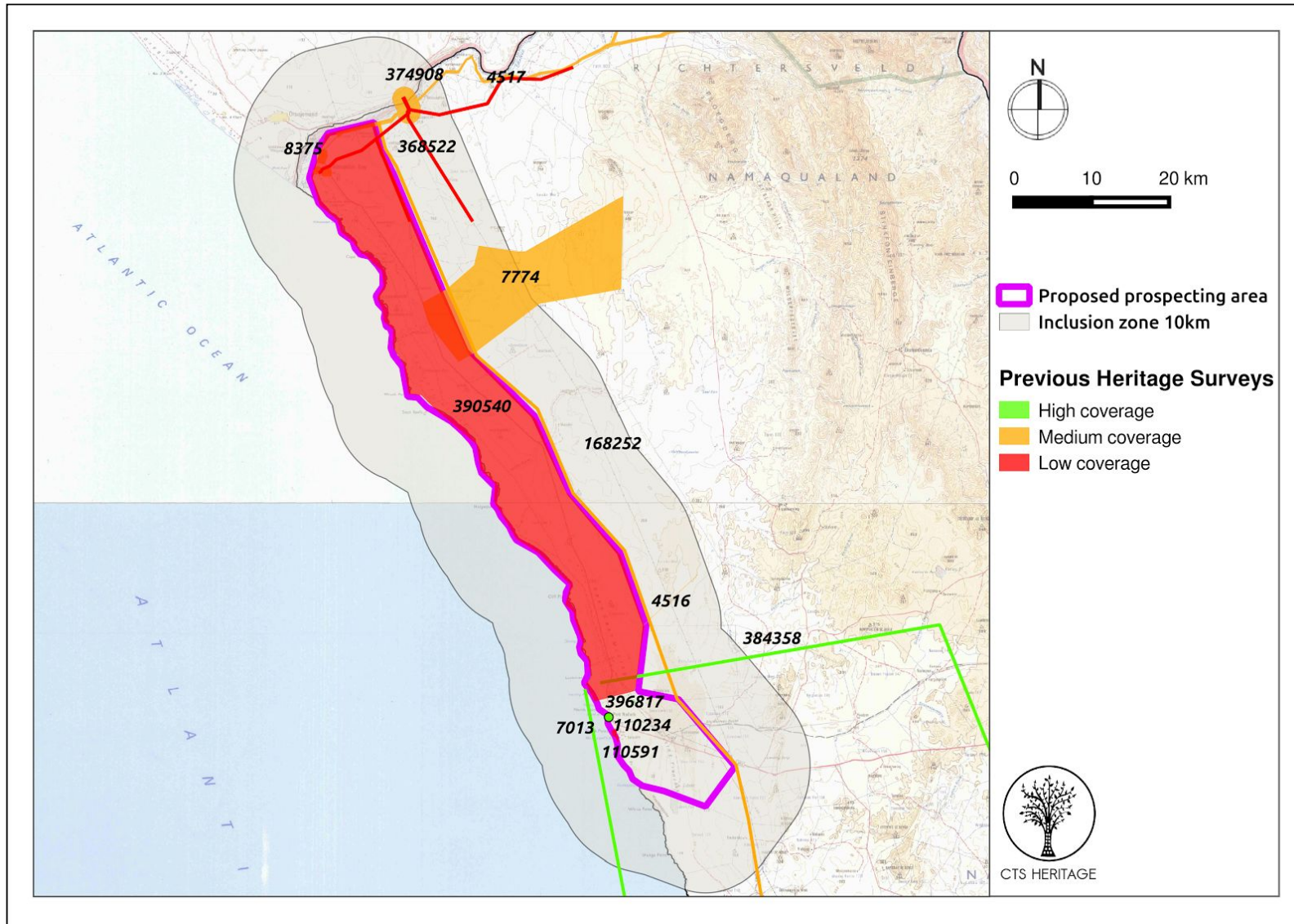
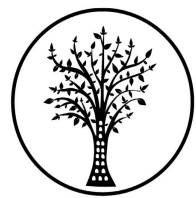


Figure 2a. Previous HIAs map. Previous Heritage Impact Assessments (excluding PIAs) surrounding the proposed prospecting area within 10kms, with SAHRIS NIDS indicated (please see Appendix 2 for full reference list).

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

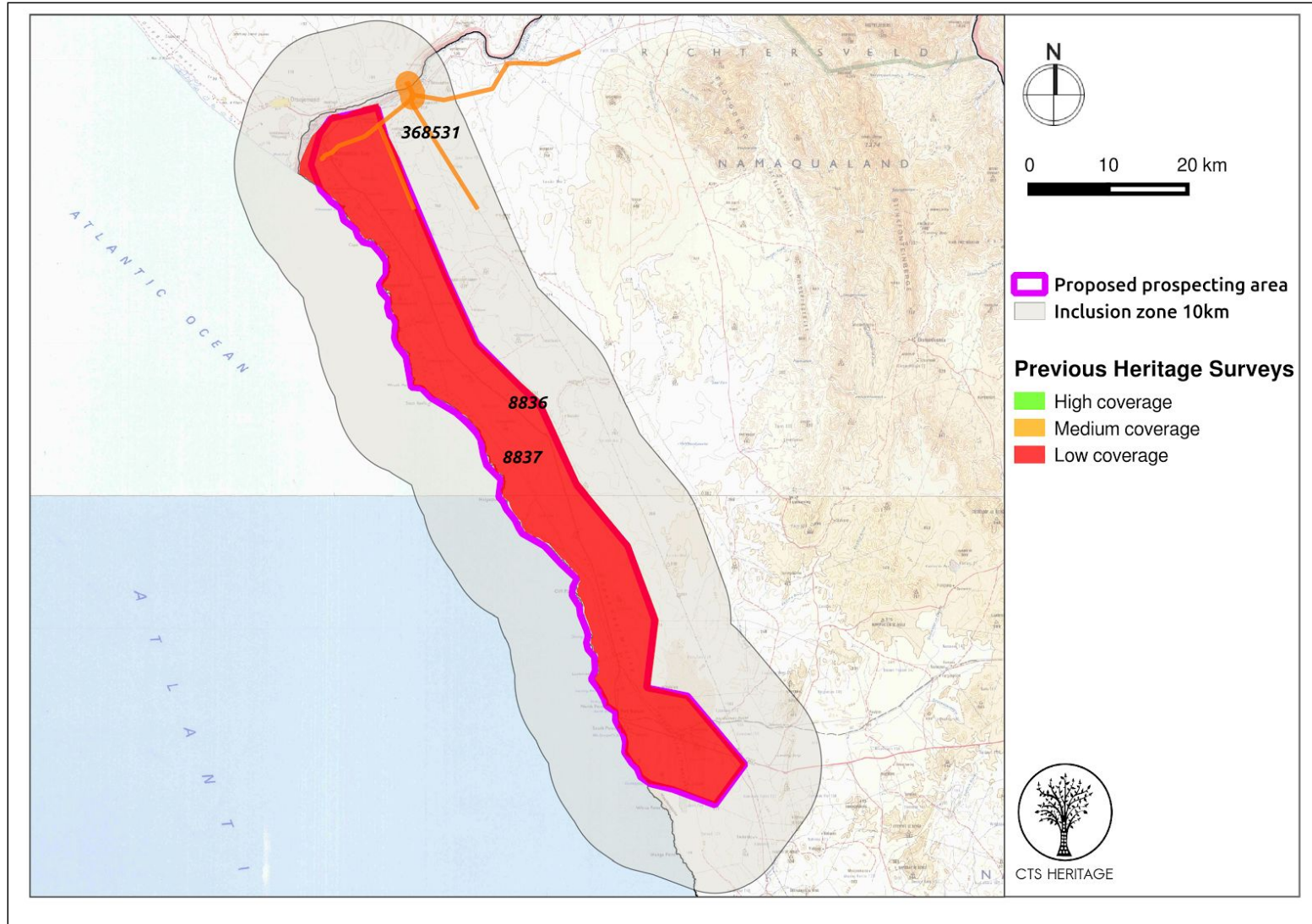
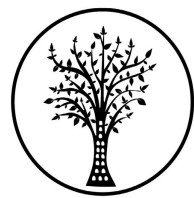


Figure 2b. Previous PIAs map. Previous Palaeontological Impact Assessments surrounding the proposed development area within 10kms, with SAHRIS NIDS indicated (please see Appendix 2 for full reference list).

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

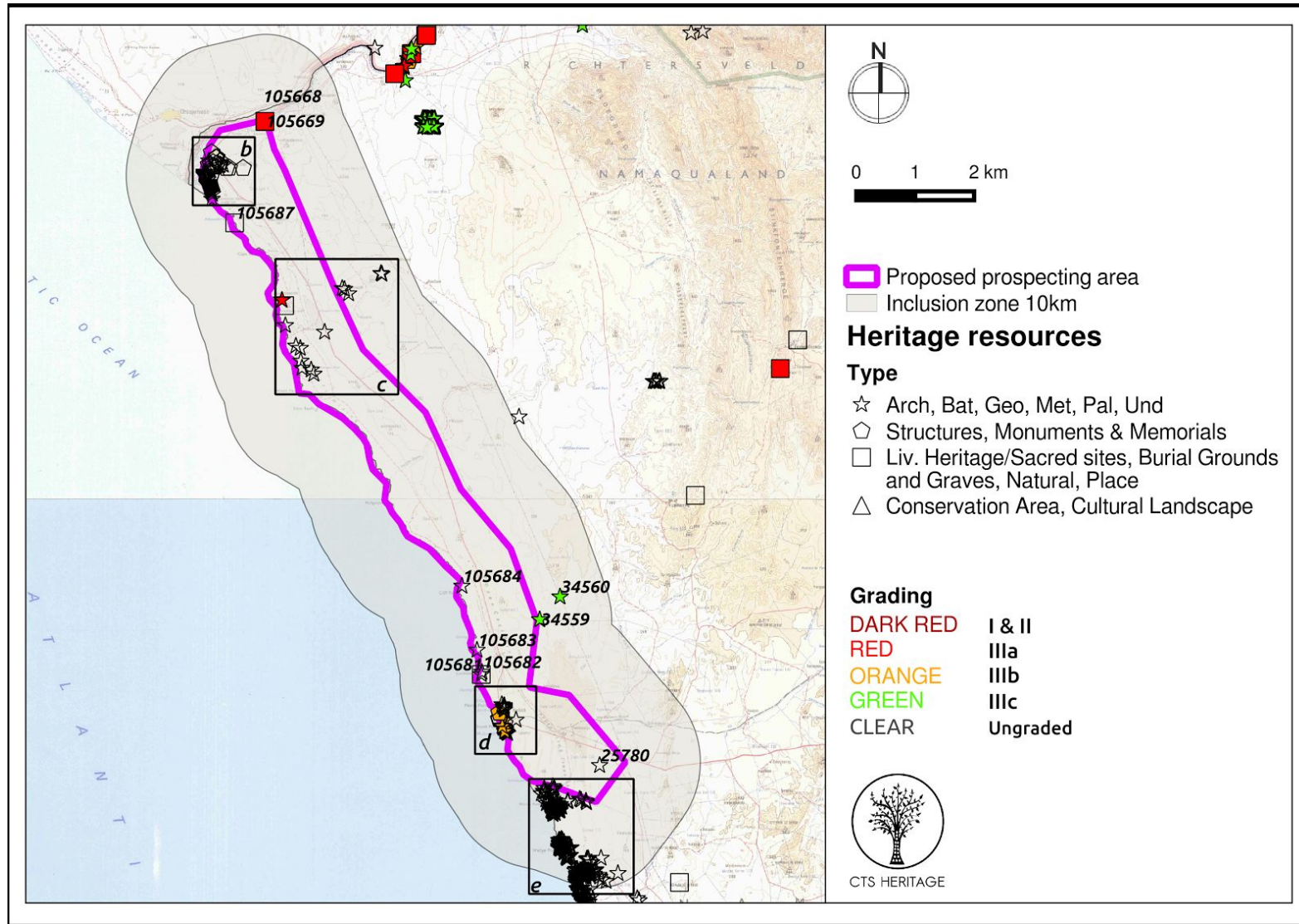
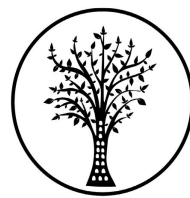


Figure 3a. Heritage Resources Map. Heritage resources previously identified in and near the study area, with SAHRIS Site IDs indicated (see Figures 3b-3e for insets). See Appendix 4 for full description of heritage resource types.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

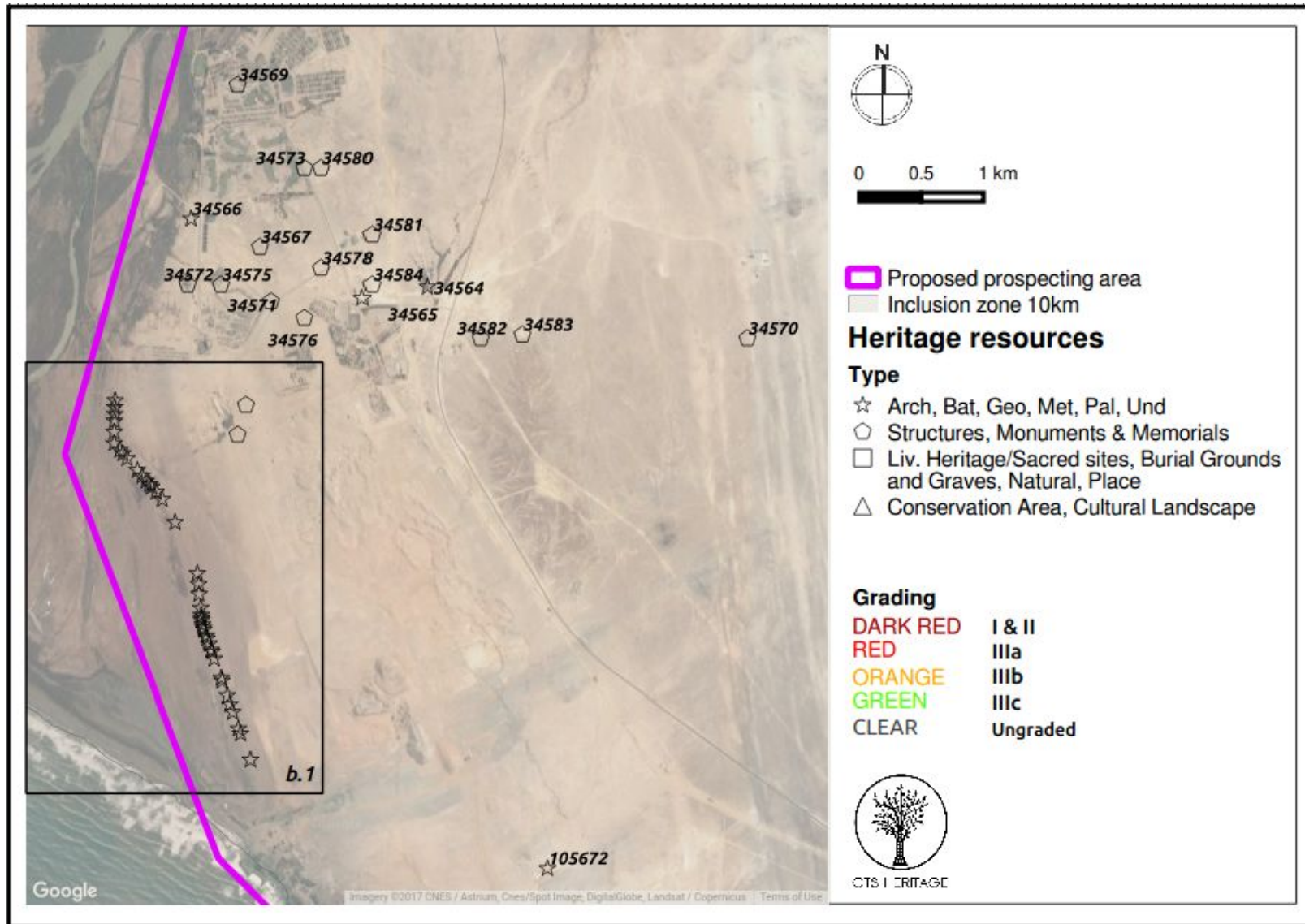
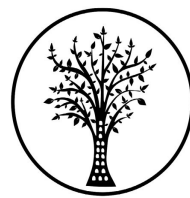


Figure 3b. Inset map (see Figure 3b.1 for inset)

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

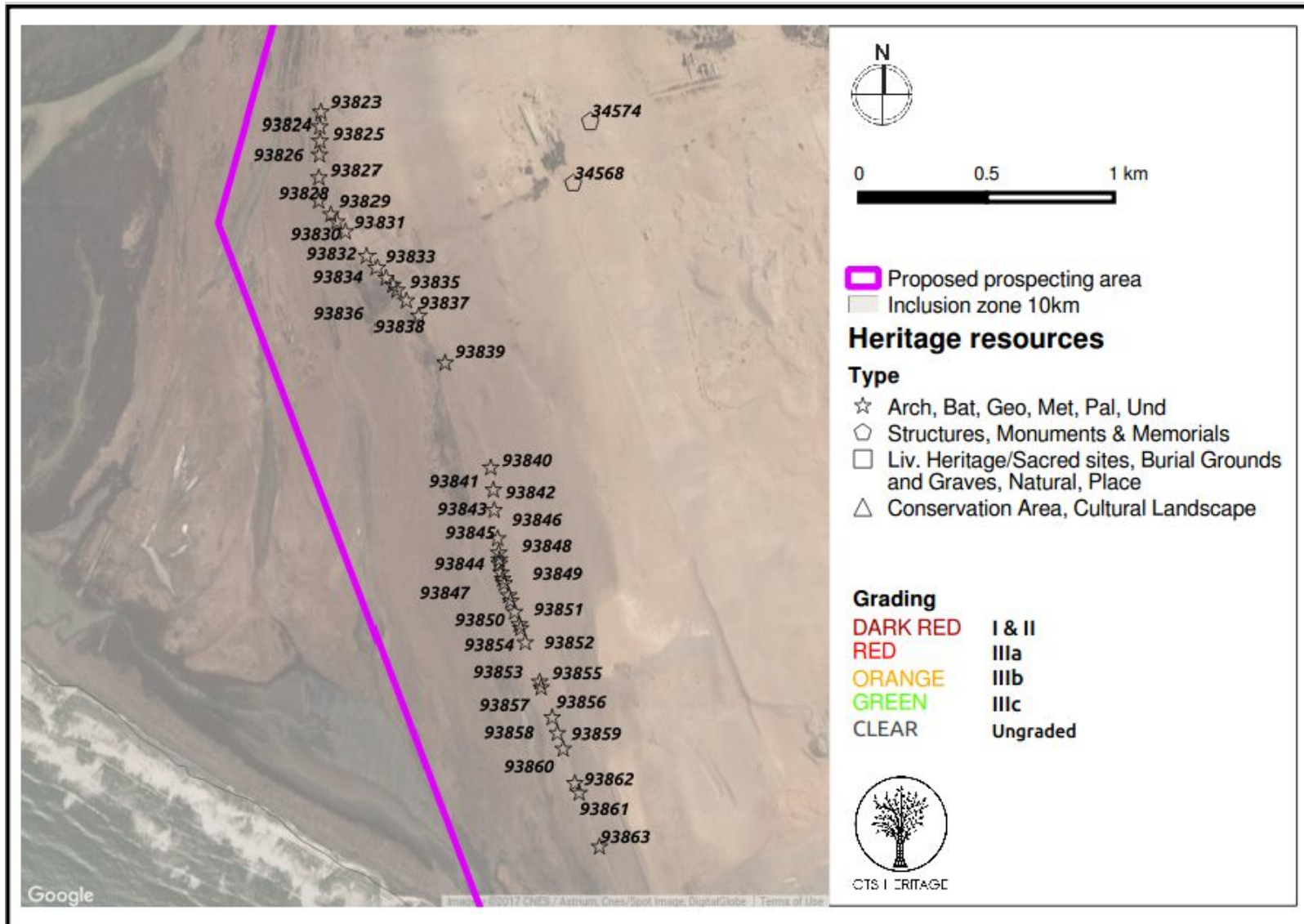
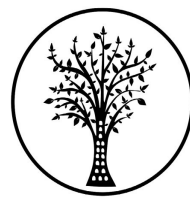


Figure 3b.1. Inset map.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

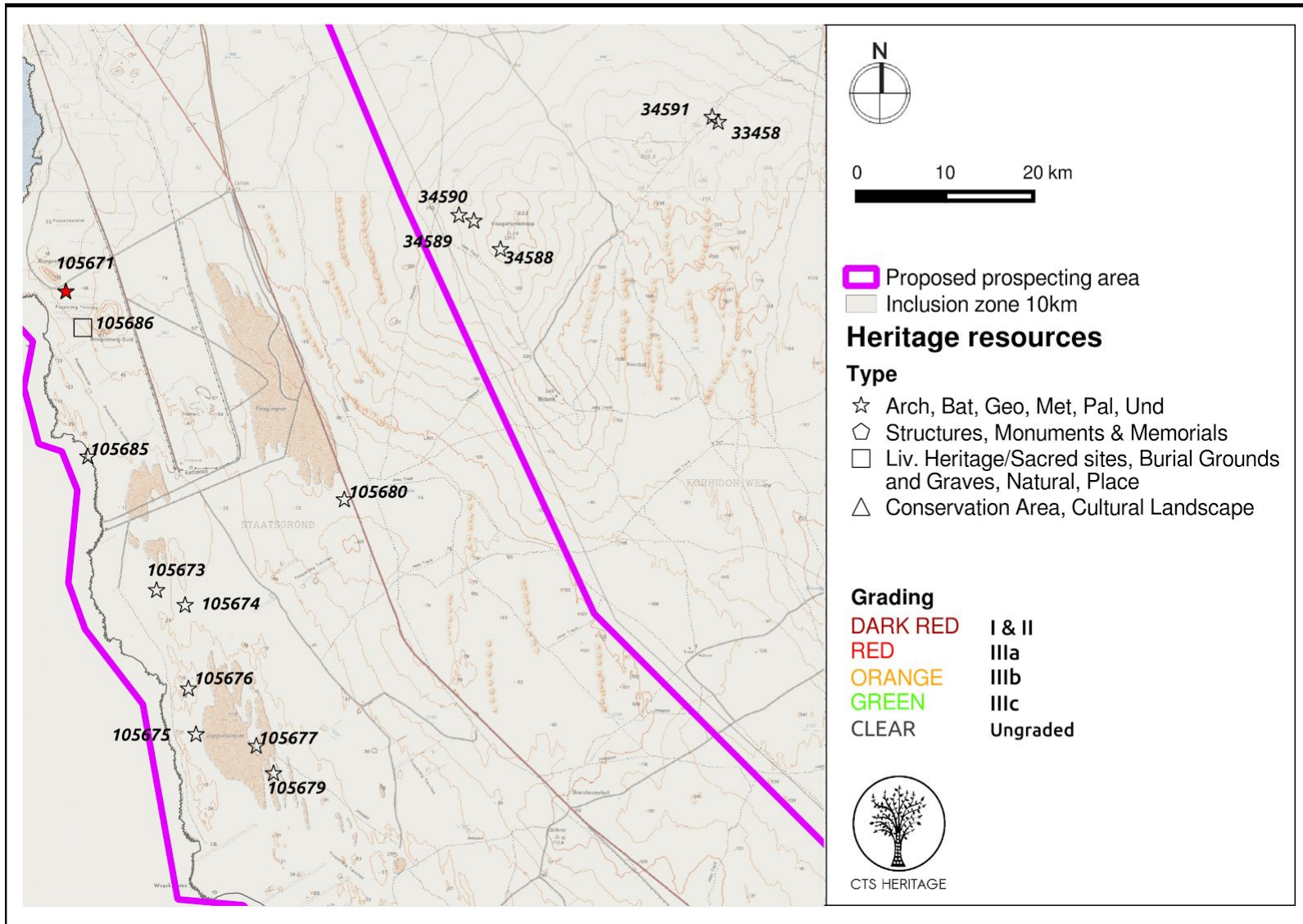
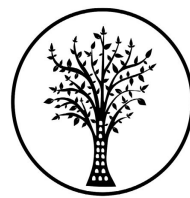


Figure 3c. Inset map.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

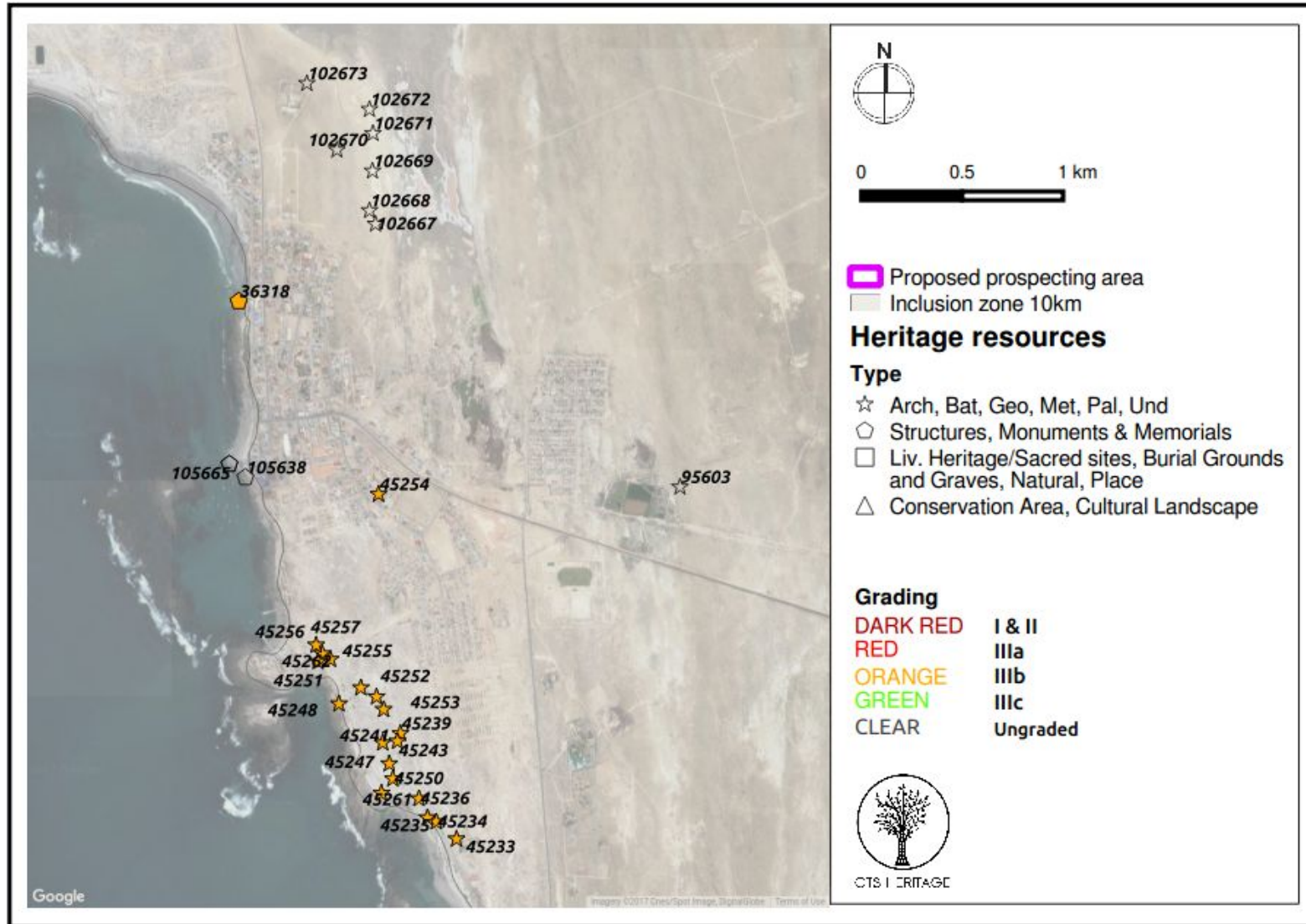
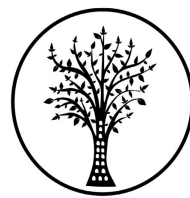


Figure 3d. Inset map.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

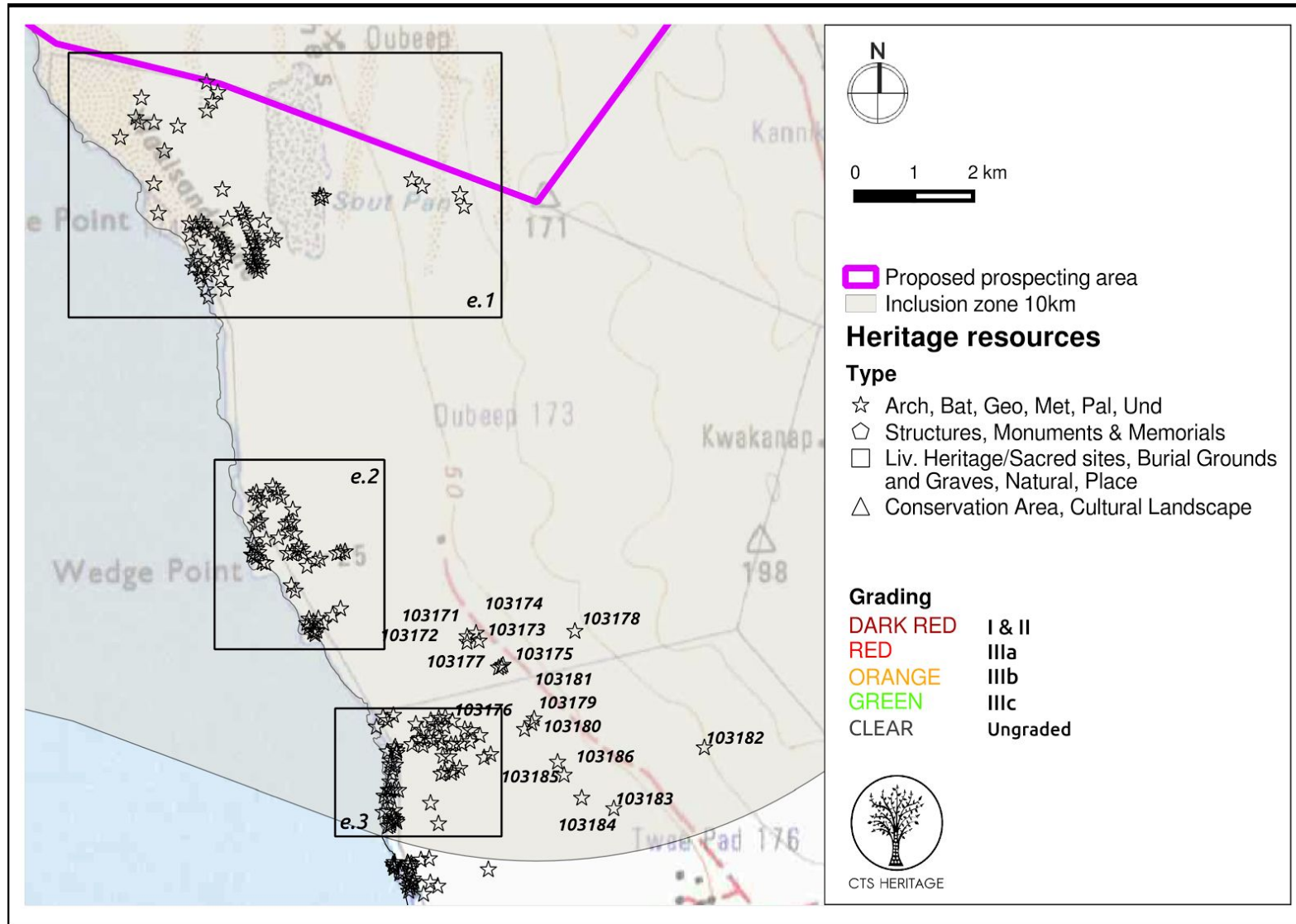
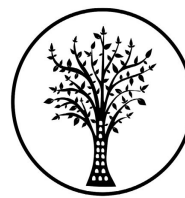


Figure 3e. Inset map. Please see Figure e.1 - e.3 for insets.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

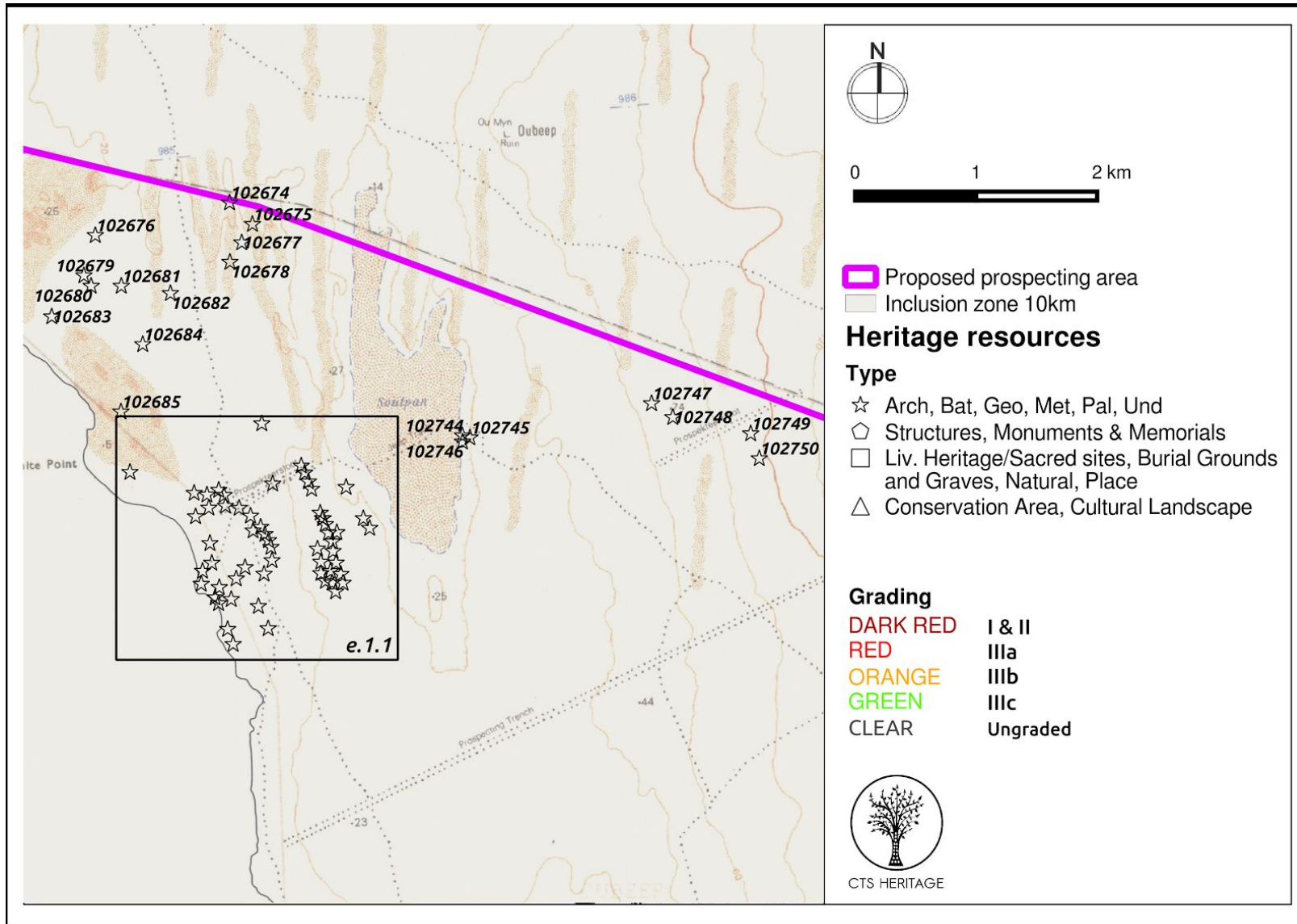
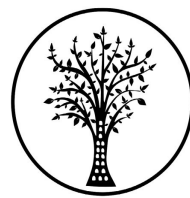


Figure 3e.1. Inset map. Please see Figure 3e.1.1 for inset.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

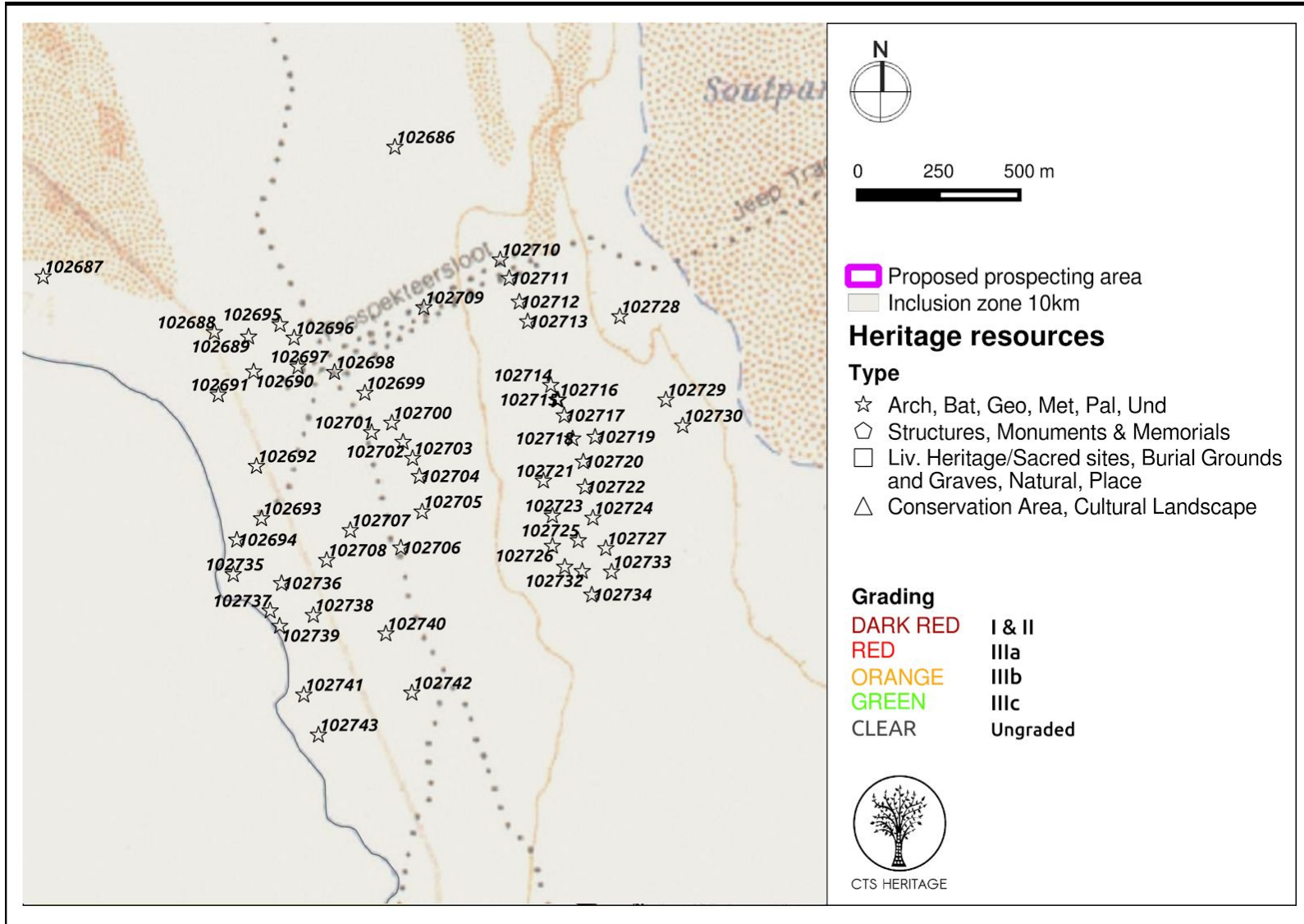
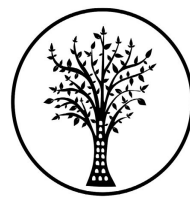


Figure 3e.1.1. Inset map.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

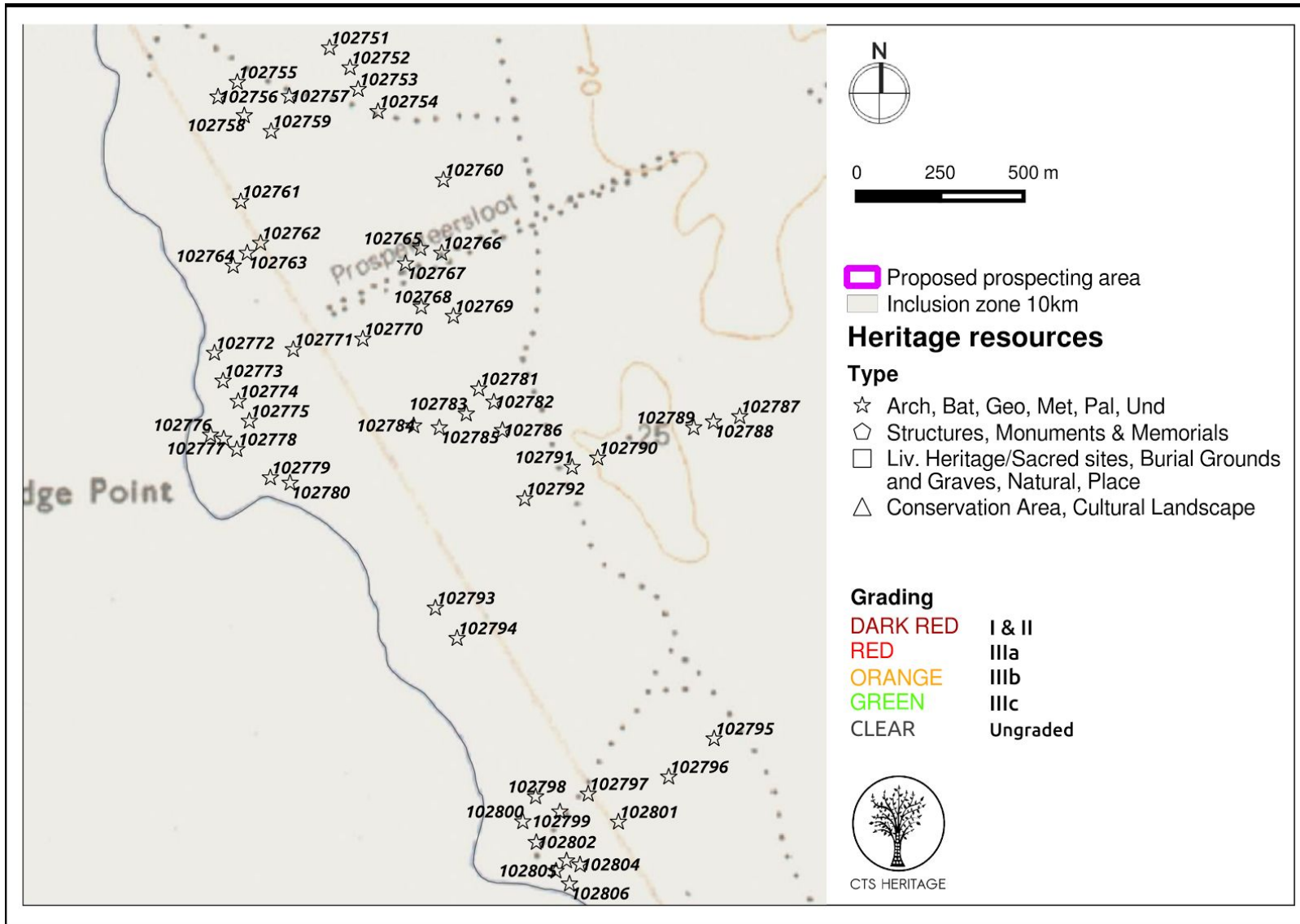
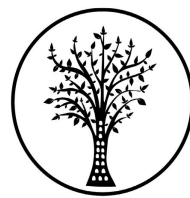


Figure 3e.2. Inset map.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

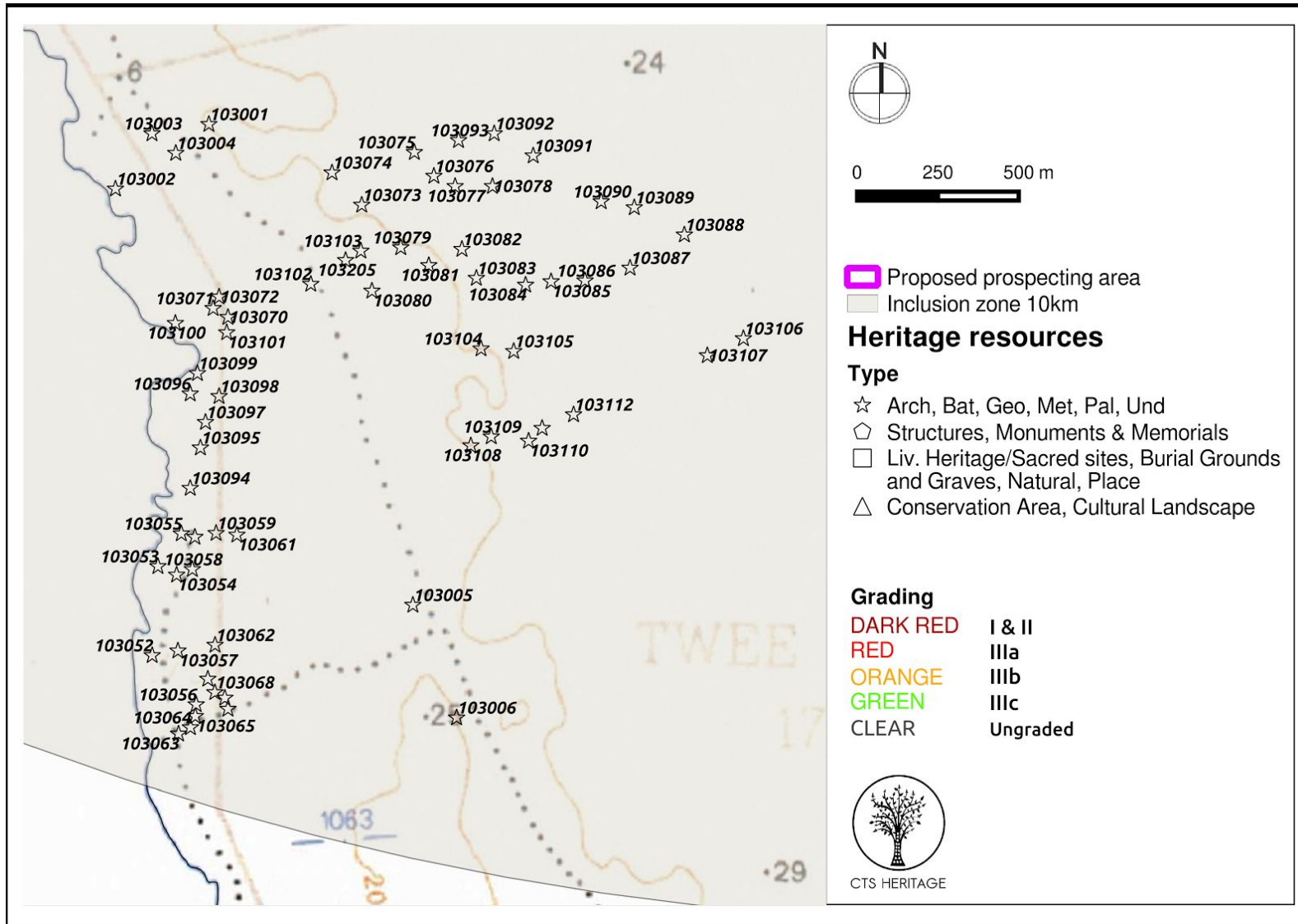
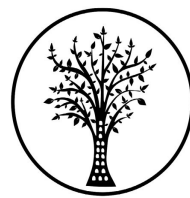


Figure 3e.3. Inset map.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

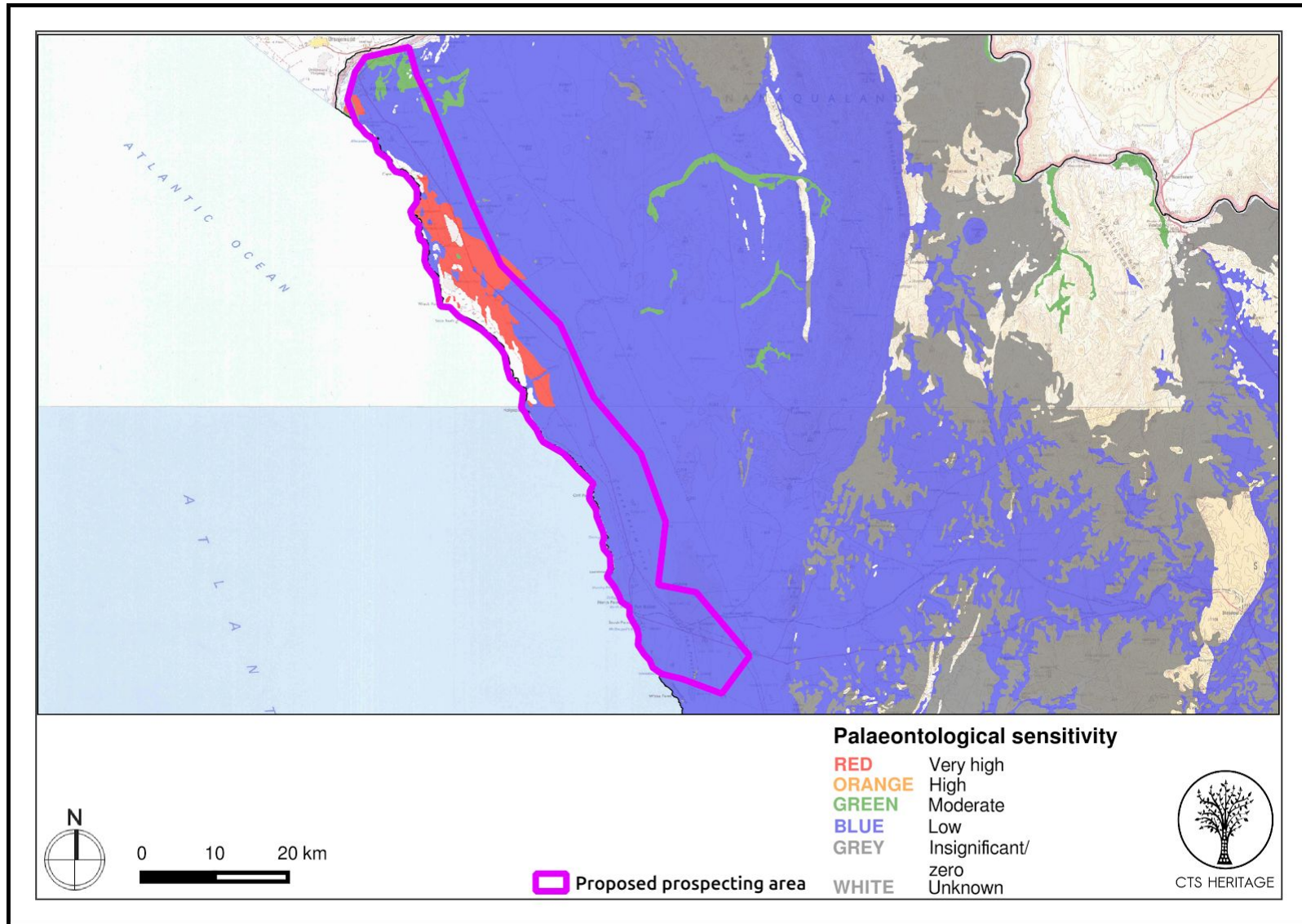
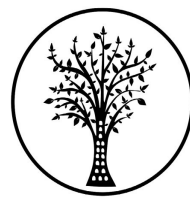


Figure 4. Palaeosensitivity Map, indicating very high, moderate, low and unknown fossil sensitivity underlying the study area. See Appendix 4 for full guide to the legend.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

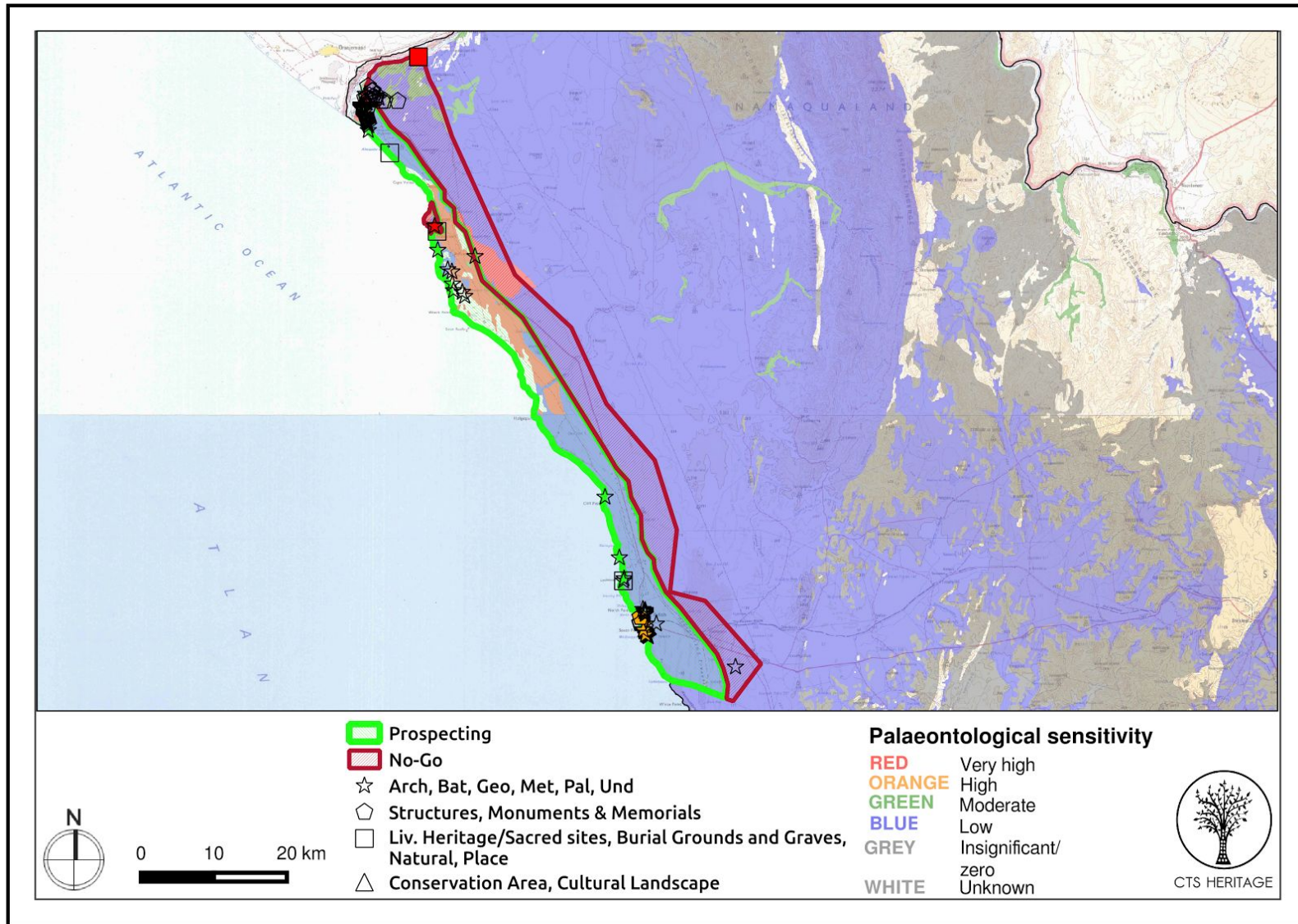
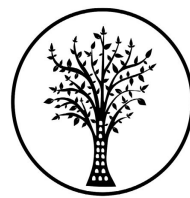


Figure 5. Composite map, indicating prospecting and no-go areas relative to heritage resources and fossil sensitivity.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE



Figure 6. Noordsif construction's tailing dams and coarse tailing dumps. There is about 40-50 metric tons of material.



Figure 7. Sampling at Noordsif tailing dam



Figure 8. Rietfontein's tailing dam has been successfully sampled up to 8m deep.

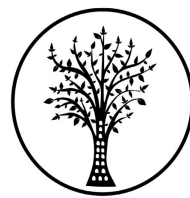


Figure 9. Sampling at the Gifkop tailing dam with the coarse tailing dumps in the background

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE



Figure 10. Rietfontein's coarse tailing dump.

8. Heritage statement and character of the area

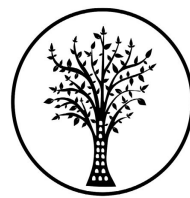
Application is made for non-invasive and invasive prospecting to establish the presence of economic deposits of heavy minerals on four farms located in the Namakwa Registration District. Prospecting will take place over a 60-month (five year) period, and will initially comprise non-invasive methods (Phase 1), which will include surface mapping and surveying of the deposit(s). Phase 2 will comprise invasive prospecting methods, and will respectively include auger and RC drilling of material. Phases 3 and 4 will respectively comprise off-site sample processing and data analysis, and decision making. Phase 5 will include rehabilitation. Some of these phases will be undertaken in parallel. The area proposed for prospecting falls within the existing Alexkor concession area. The total farm area is 83,263 ha, but only approximately 40,300 ha (where existing mining is taking place) will be subject to the proposed prospecting. The remaining area falls within the no-go zones.

The Phase 2 prospecting will make use of a hand auger and in some cases, the auger will be fitted to a 4x4 vehicle to limit manpower (see Figures 7, 8 and 9). Existing tracks will be used and when the 4x4 goes off-road, a rehabilitation plan has been drafted to mitigate the impacts from the tracks. The entire area proposed for prospecting has been previously disturbed by mining activities and bulk prospecting, with the undisturbed areas included in the no-go zones in Figure 5 above. These no-go zones have been determined through assessments of suitable geology and flora and fauna conservation. In addition, much of the proposed prospecting will overlap existing mining operations. According to Hart (2010), "The coastal strip (west of the provincial road) has been subject to intense diamond mining for most of the 20th century. West of the R382 prospecting trenches, spoil heaps and bleak

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

denuded areas litter the landscape. East of the R382 are the arid coastal lowlands consisting of large open tracts of sparsely vegetated dunes”.

Also according to Hart (2010), “Historically, almost all of this land was the territory of the Nama herders, a Khoekhoen descendent community with roots in the area as long as 2000 years ago... Recent heritage impact assessments along the Namaqualand coast have revealed just how remarkably rich the pre-colonial archaeology is there, although many middens do indeed contain nothing but shell and the occasional quartz flake (Halkett 2003; Orton 2005, 2007b; Orton & Halkett 2005, 2006; Webley, in prep.). Many thousands of shell middens occur, with some containing a rich array of finds including stone artefacts, pottery, bone tools, ostrich eggshell beads and animal bones... Human burials occur widely and along the coast are completely unmarked. They are seldom found by archaeologists with the vast majority being dug up during diamond mining.” Kaplan (2008), assisted with the drafting of an updated EMPr for the Alexkor Mining Operations. Kaplan noted that shore based mining operations impact severely negatively on archaeological heritage sites. Mining operations over the last 80 odd years by Alexkor Limited, has unquestionably destroyed many sites in the Alexkor mining area, however, despite the destruction and damage to archaeological and palaeontological heritage remains caused as a result of historical mining operations, there are still likely to be intact and relatively well preserved sites in the Alexkor mining area. It is also highly probable that important vertebrate fossils and marine molluscs will be exposed below the overburden in deeper excavations and prospecting trenches. To this end, Kaplan (2008) made a number of recommendations including the implementation of a red-flag area of 300m from the high-water mark, and that an archaeological and palaeontological awareness programme be implemented prior to any earthmoving operations taking place on the site. This is in order to sensitise contractors and plant operators to the archaeological and palaeontological importance of the region.

According to the SAHRIS Palaeosensitivity Map, the area proposed for prospecting is underlain by Geological formations of very high and low significance. The formations of low palaeontological significance include surficial Alluvium, the Oranjemund FM, the Holgat FM, the Vredefontein FM and Aeolianites. Some of the prospecting area is underlain by formations which have not been assessed for their palaeontological significance including the Gais Member, the Curlew Strand FM, and the Swartlintjies FM. The Graauw Duinen FM has been accorded very high palaeontological sensitivity as it forms part of the known Coastal Cenozoic Deposits. According to the Fossil Heritage Browser on SAHRIS, fossil bone finds during research on the Northern Cape coast mines have enabled age estimations based on correlations with the African vertebrate biochronology. Fossil data associated with the aeolian record overlaps with the presence of hominids eg. at Elandsfontein, Duinefontein and Swartklip archaeological sites, making these very significant findings. In the marine deposits, fossil molluscan seashells, brachiopods, crustaceans (barnacles, crabs, prawns, ostracods), echinoids, polychaete worm tubes, corals, bryozoans and foraminifera are found. Shark teeth are common, and other fish teeth are known to occur, as are the bones of whales, dolphins, seals and seabirds.

In conclusion, the area proposed for prospecting is very dense in terms of highly significant archaeological sites (both near the coast and inland, Figures 3a-e) and some palaeontological resources. While impact assessments have been completed in and around this area, these have increased our knowledge about the archaeological and palaeontological sensitivity of this area. As a result, the area proposed for prospecting has been subject to some academic study, thus increasing its significance further. However, in this particular instance, the proposed prospecting interventions are limited to a hand auger drill, existing roads will be used as much as possible and no bulk sampling will take place.

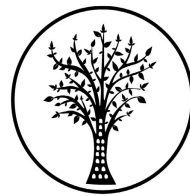
As such, due to the limited impact of the prospecting proposed, it is recommended that no HIA is required at this stage, on condition that a red-flag area of 300m from the high water mark is imposed where extra care is taken in terms of avoiding impacts to significant archaeological resources (Kaplan 2008) including an archaeological and palaeontological awareness programme implemented prior to prospecting taking place on the site. In addition, it is recommended that a Fossil Finds Procedure be implemented for the Prospecting Phase.

It is also recommended that a detailed HIA be required before any bulk sampling or mining can take place during subsequent phases of the project. It is also likely that a management plan will be required for the ongoing management of the significant archaeology in this area.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

RECOMMENDATION:

The heritage resources along the routes proposed for development are only partially recorded

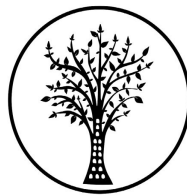
Based on the available information, the proposed prospecting is unlikely to impact on heritage resources and as such, it is recommended that, at this stage and due to the limited nature of the proposed interventions, no further heritage studies are required on condition that:

- **The no-go areas identified in Figure 5 be implemented**
- **A red-flag area of 300m be implemented from the high water mark where extra care is taken in terms of avoiding impacts to significant archaeological resources including an archaeological and palaeontological awareness program implemented prior to prospecting**
- **A Fossil Finds Procedure be implemented**
- **A complete Heritage Impact Assessment is conducted prior to any subsequent phases of the project that include bulk sampling or mining activities**

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

APPENDIX 1

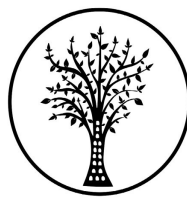
List of heritage resources within the 10km Inclusion Zone (outside proposed prospecting area)

Site ID	Site no	Full Site Name	Site Type	Grading
45233	KAI-KAI 01	Kai Kai Coastal Development, Port Nolloth 01	Artefacts, Shell Midden	Grade IIIb
45234	KAI-KAI 02	Kai Kai Coastal Development, Port Nolloth 02	Artefacts, Shell Midden	Grade IIIb
45235	KAI-KAI 03	Kai Kai Coastal Development, Port Nolloth 03	Artefacts, Shell Midden	Grade IIIb
45236	KAI-KAI 04	Kai Kai Coastal Development, Port Nolloth 04	Artefacts, Shell Midden	Grade IIIb
45239	KAI-KAI 07	Kai Kai Coastal Development, Port Nolloth 07	Artefacts, Shell Midden	Grade IIIb
45241	KAI-KAI 09	Kai Kai Coastal Development, Port Nolloth 09	Artefacts, Shell Midden	Grade IIIb
45243	KAI-KAI 08	Kai Kai Coastal Development, Port Nolloth 08	Artefacts	Grade IIIb
45247	KAI-KAI 06	Kai Kai Coastal Development, Port Nolloth 06	Artefacts	Grade IIIb
45248	KAI-KAI 10	Kai Kai Coastal Development, Port Nolloth 10	Artefacts	Grade IIIb
45250	KAI-KAI 05	Kai Kai Coastal Development, Port Nolloth 05	Artefacts	Grade IIIb
45251	KAI-KAI 11	Kai Kai Coastal Development, Port Nolloth 11	Artefacts, Shell Midden	Grade IIIb
45252	KAI-KAI 12	Kai Kai Coastal Development, Port Nolloth 12	Artefacts, Shell Midden	Grade IIIb
45253	KAI-KAI 13	Kai Kai Coastal Development, Port Nolloth 13	Artefacts, Shell Midden	Grade IIIb

CTS Heritage

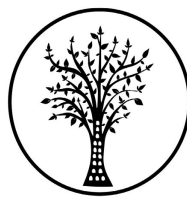
34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

45254	KAI-KAI 14	Kai Kai Coastal Development, Port Nolloth 14	Artefacts, Shell Midden	Grade IIIb
45255	KAI-KAI 15	Kai Kai Coastal Development, Port Nolloth 15	Artefacts, Shell Midden	Grade IIIb
45256	KAI-KAI 16	Kai Kai Coastal Development, Port Nolloth 16	Artefacts, Shell Midden	Grade IIIb
45257	KAI-KAI 17	Kai Kai Coastal Development, Port Nolloth 17	Artefacts, Shell Midden	Grade IIIb
45261	KAI-KAI 19	Kai Kai Coastal Development, Port Nolloth 19	Artefacts, Shell Midden	Grade IIIb
45262	KAI-KAI 18	Kai Kai Coastal Development, Port Nolloth 18	Artefacts	Grade IIIb
36318	PNL001	Port Nolloth Lighthouse 001	Structures	Grade IIIb
34559	MUI001	Muisvlak 001	Artefacts	Grade IIIc
34560	MUI002	Muisvlak 002	Artefacts	Grade IIIc
105664	Port Nolloth Jetty, Beach Street		Structures	Ungraded
34588	WIT001	Witbank 001	Artefacts	Ungraded
34589	WIT003	Witbank 003	Artefacts	Ungraded
33458	WIT006	Witbank 006	Artefacts	Ungraded
105665	Port Nolloth Jetty, Beach Street		Structures	Ungraded
34590	WIT004	Witbank 004	Artefacts	Ungraded
34591	WIT005	Witbank 005	Artefacts	Ungraded
105673	ALEXKOR 02	Alexkor Diamond Mine 02	Shell Midden	Ungraded
95603	PN2011/001	PN2011/001	Shell Midden	Ungraded



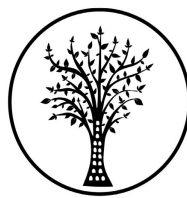
CTS HERITAGE

105676	ALEXKOR 05	Alexkor Diamond Mine 05	Shell Midden, Artefacts	Ungraded
105683	ALEXKOR 12	Alexkor Diamond Mine 12	Shell Midden	Ungraded
105686	ALEXKOR 14	Alexkor Diamond Mine 14	Burial Grounds & Graves	Ungraded
105687	ALEXKOR 15	Alexkor Diamond Mine 15	Burial Grounds & Graves	Ungraded
102667	PN2009/001	Port Nolloth sites	Archaeological	Ungraded
102668	PN2009/002	Port Nolloth sites	Archaeological	Ungraded
102669	PN2009/003	Port Nolloth sites	Archaeological	Ungraded
102670	PN2009/004	Port Nolloth sites	Archaeological	Ungraded
102671	PN2009/005	Port Nolloth sites	Archaeological	Ungraded
102672	PN2009/006	Port Nolloth sites	Archaeological	Ungraded
102673	PN2009/007	Port Nolloth sites	Archaeological	Ungraded
105638	19th Century Revetment, Beach Street, Port Nolloth		Structures	Ungraded
103052	TP1991/031	Tweepad	Archaeological	Ungraded
103053	TP1991/032	Tweepad	Archaeological	Ungraded
103054	TP1991/033	Tweepad	Archaeological	Ungraded
103055	TP1991/034	Tweepad	Archaeological	Ungraded
103056	TP1991/035	Tweepad	Archaeological	Ungraded
103057	TP1991/036	Tweepad	Archaeological	Ungraded
103058	TP1991/037	Tweepad	Archaeological	Ungraded
103059	TP1991/038	Tweepad	Archaeological	Ungraded
103060	TP1991/039	Tweepad	Archaeological	Ungraded

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



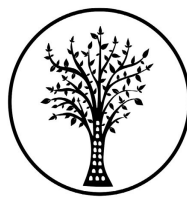
CTS HERITAGE

103061	TP1991/040	Tweepad	Archaeological	Ungraded
103062	TP1991/041	Tweepad	Archaeological	Ungraded
103063	TP1991/042	Tweepad	Archaeological	Ungraded
103064	TP1991/043	Tweepad	Archaeological	Ungraded
103065	TP1991/044	Tweepad	Archaeological	Ungraded
103066	TP1991/045	Tweepad	Archaeological	Ungraded
103067	TP1991/046	Tweepad	Archaeological	Ungraded
103068	TP1991/047-8	Tweepad	Archaeological	Ungraded
103069	TP1991/049	Tweepad	Archaeological	Ungraded
103070	TP1991/050	Tweepad	Archaeological	Ungraded
103071	TP1991/051	Tweepad	Archaeological	Ungraded
103072	TP1991/052	Tweepad	Archaeological	Ungraded
103073	TP1991/053	Tweepad	Archaeological	Ungraded
103074	TP1991/054	Tweepad	Archaeological	Ungraded
103075	TP1991/055	Tweepad	Archaeological	Ungraded
103076	TP1991/056	Tweepad	Archaeological	Ungraded
103077	TP1991/057	Tweepad	Archaeological	Ungraded
103078	TP1991/058	Tweepad	Archaeological	Ungraded
103079	TP1991/059	Tweepad	Archaeological	Ungraded
103080	TP1991/060	Tweepad	Archaeological	Ungraded
103081	TP1991/061	Tweepad	Archaeological	Ungraded
103082	TP1991/062	Tweepad	Archaeological	Ungraded
103083	TP1991/063	Tweepad	Archaeological	Ungraded

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



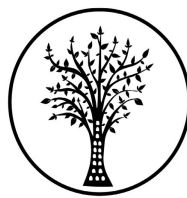
CTS HERITAGE

103084	TP1991/064	Tweepad	Archaeological	Ungraded
103085	TP1991/065	Tweepad	Archaeological	Ungraded
103086	TP1991/066	Tweepad	Archaeological	Ungraded
103087	TP1991/067	Tweepad	Archaeological	Ungraded
103088	TP1991/068-9	Tweepad	Archaeological	Ungraded
103089	TP1991/070	Tweepad	Archaeological	Ungraded
103090	TP1991/071	Tweepad	Archaeological	Ungraded
103091	TP1991/072	Tweepad	Archaeological	Ungraded
103092	TP1991/073	Tweepad	Archaeological	Ungraded
103093	TP1991/074	Tweepad	Archaeological	Ungraded
103094	TP1991/075	Tweepad	Archaeological	Ungraded
103095	TP1991/076	Tweepad	Archaeological	Ungraded
103096	TP1991/077	Tweepad	Archaeological	Ungraded
103097	TP1991/078	Tweepad	Archaeological	Ungraded
103098	TP1991/079	Tweepad	Archaeological	Ungraded
103099	TP1991/080	Tweepad	Archaeological	Ungraded
103100	TP1991/081	Tweepad	Archaeological	Ungraded
103101	TP1991/082	Tweepad	Archaeological	Ungraded
103102	TP1991/083	Tweepad	Archaeological	Ungraded
103103	TP1991/084	Tweepad	Archaeological	Ungraded
103104	TP1991/086	Tweepad	Archaeological	Ungraded
103105	TP1991/089	Tweepad	Archaeological	Ungraded
103106	TP1991/091	Tweepad	Archaeological	Ungraded

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



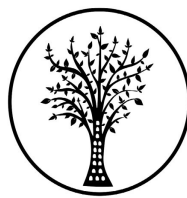
CTS HERITAGE

103107	TP1991/092	Tweepad	Archaeological	Ungraded
103108	TP1991/093	Tweepad	Archaeological	Ungraded
103109	TP1991/094	Tweepad	Archaeological	Ungraded
103110	TP1991/095	Tweepad	Archaeological	Ungraded
103111	TP1991/096	Tweepad	Archaeological	Ungraded
103112	TP1991/097	Tweepad	Archaeological	Ungraded
103171	TP2001/001	Tweepad	Archaeological	Ungraded
103172	TP2001/002	Tweepad	Archaeological	Ungraded
103173	TP2001/003	Tweepad	Archaeological	Ungraded
103174	TP2001/004	Tweepad	Archaeological	Ungraded
103175	TP2001/005	Tweepad	Archaeological	Ungraded
103176	TP2001/006	Tweepad	Archaeological	Ungraded
103177	TP2001/007	Tweepad	Archaeological	Ungraded
103178	TP2001/008	Tweepad	Archaeological	Ungraded
103179	TP2001/009A	Tweepad	Archaeological	Ungraded
103180	TP2001/009B	Tweepad	Archaeological	Ungraded
103181	TP2001/009E	Tweepad	Archaeological	Ungraded
103182	TP2001/010A	Tweepad	Archaeological	Ungraded
103183	TP2001/011	Tweepad	Archaeological	Ungraded
103184	TP2001/012	Tweepad	Archaeological	Ungraded
103185	TP2001/013	Tweepad	Archaeological	Ungraded
103186	TP2001/014	Tweepad	Archaeological	Ungraded
103205	TP2004/014	Tweepad	Archaeological	Ungraded

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



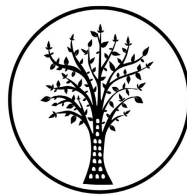
CTS HERITAGE

102674	OB1991/132	Oubeep Point 1991	Archaeological	Ungraded
102675	OB1991/134	Oubeep Point 1991	Archaeological	Ungraded
102676	OB1991/123	Oubeep Point 1991	Archaeological	Ungraded
102677	OB1991/133	Oubeep Point 1991	Archaeological	Ungraded
102678	OB2004/001	Oubeep Point 2004	Archaeological	Ungraded
102679	OB1991/128	Oubeep Point 1991	Archaeological	Ungraded
102680	OB1991/122	Oubeep Point 1991	Archaeological	Ungraded
102681	OB1991/127	Oubeep Point 1991	Archaeological	Ungraded
102682	OB1991/129	Oubeep Point 1991	Archaeological	Ungraded
102683	OB1991/130	Oubeep Point 1991	Archaeological	Ungraded
102684	OB1991/126	Oubeep Point 1991	Archaeological	Ungraded
102685	OB1991/125	Oubeep Point 1991	Archaeological	Ungraded
102686	OB1991/074	Oubeep Point 1991	Archaeological	Ungraded
102687	OB1991/124	Oubeep Point 1991	Archaeological	Ungraded
102688	OB1991/057	Oubeep Point 1991	Archaeological	Ungraded
102689	OB1991/056	Oubeep Point 1991	Archaeological	Ungraded
102690	OB1991/043	Oubeep Point 1991	Archaeological	Ungraded
102691	OB1991/044	Oubeep Point 1991	Archaeological	Ungraded
102692	OB1991/058	Oubeep Point 1991	Archaeological	Ungraded
102693	OB1991/059	Oubeep Point 1991	Archaeological	Ungraded
102694	OB1991/045	Oubeep Point 1991	Archaeological	Ungraded
102695	OB1991/055	Oubeep Point 1991	Archaeological	Ungraded
102696	OB1991/054	Oubeep Point 1991	Archaeological	Ungraded

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



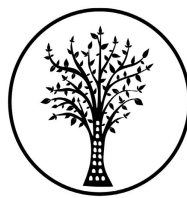
CTS HERITAGE

102697	OB1991/042	Oubeep Point 1991	Archaeological	Ungraded
102698	OB1991/071	Oubeep Point 1991	Archaeological	Ungraded
102699	OB1991/070	Oubeep Point 1991	Archaeological	Ungraded
102700	OB1991/069	Oubeep Point 1991	Archaeological	Ungraded
102701	OB1991/068	Oubeep Point 1991	Archaeological	Ungraded
102702	OB1991/067	Oubeep Point 1991	Archaeological	Ungraded
102703	OB1991/066	Oubeep Point 1991	Archaeological	Ungraded
102704	OB1991/065	Oubeep Point 1991	Archaeological	Ungraded
102705	OB1991/064	Oubeep Point 1991	Archaeological	Ungraded
102706	OB1991/063	Oubeep Point 1991	Archaeological	Ungraded
102707	OB1991/053	Oubeep Point 1991	Archaeological	Ungraded
102708	OB1991/052	Oubeep Point 1991	Archaeological	Ungraded
102709	OB1991/072	Oubeep Point 1991	Archaeological	Ungraded
102710	OB1991/073	Oubeep Point 1991	Archaeological	Ungraded
102711	OB1991/075	Oubeep Point 1991	Archaeological	Ungraded
102712	OB1991/076	Oubeep Point 1991	Archaeological	Ungraded
102713	OB1991/077	Oubeep Point 1991	Archaeological	Ungraded
102714	OB1991/078	Oubeep Point 1991	Archaeological	Ungraded
102715	OB1991/079	Oubeep Point 1991	Archaeological	Ungraded
102716	OB1991/080	Oubeep Point 1991	Archaeological	Ungraded
102717	OB1991/081	Oubeep Point 1991	Archaeological	Ungraded
102718	OB1991/082	Oubeep Point 1991	Archaeological	Ungraded
102719	OB1991/083	Oubeep Point 1991	Archaeological	Ungraded

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



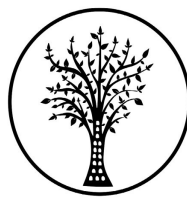
CTS HERITAGE

102720	OB1991/084	Oubeep Point 1991	Archaeological	Ungraded
102721	OB1991/087	Oubeep Point 1991	Archaeological	Ungraded
102722	OB1991/097	Oubeep Point 1991	Archaeological	Ungraded
102723	OB1991/088	Oubeep Point 1991	Archaeological	Ungraded
102724	OB1991/096	Oubeep Point 1991	Archaeological	Ungraded
102725	OB1991/095	Oubeep Point 1991	Archaeological	Ungraded
102726	OB1991/089	Oubeep Point 1991	Archaeological	Ungraded
102727	OB1991/094	Oubeep Point 1991	Archaeological	Ungraded
102728	OB1991/098	Oubeep Point 1991	Archaeological	Ungraded
102729	OB1991/086	Oubeep Point 1991	Archaeological	Ungraded
102730	OB1991/085	Oubeep Point 1991	Archaeological	Ungraded
102731	OB1991/091	Oubeep Point 1991	Archaeological	Ungraded
102732	OB1991/090	Oubeep Point 1991	Archaeological	Ungraded
102733	OB1991/093	Oubeep Point 1991	Archaeological	Ungraded
102734	OB1991/092	Oubeep Point 1991	Archaeological	Ungraded
102735	OB1991/046	Oubeep Point 1991	Archaeological	Ungraded
102736	OB1991/060	Oubeep Point 1991	Archaeological	Ungraded
102737	OB1991/047	Oubeep Point 1991	Archaeological	Ungraded
102738	OB1991/061	Oubeep Point 1991	Archaeological	Ungraded
102739	OB1991/062	Oubeep Point 1991	Archaeological	Ungraded
102740	OB1991/051	Oubeep Point 1991	Archaeological	Ungraded
102741	OB1991/048	Oubeep Point 1991	Archaeological	Ungraded
102742	OB1991/050	Oubeep Point 1991	Archaeological	Ungraded

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



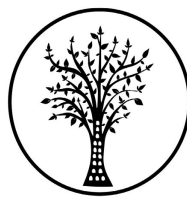
CTS HERITAGE

102743	OB1991/049	Oubeep Point 1991	Archaeological	Ungraded
102744	OB1991/099	Oubeep Point 1991	Archaeological	Ungraded
102745	OB1991/101	Oubeep Point 1991	Archaeological	Ungraded
102746	OB1991/100	Oubeep Point 1991	Archaeological	Ungraded
102747	OB2001/002	Oubeep Point 1991	Archaeological	Ungraded
102748	OB2001/001	Oubeep Point 1991	Archaeological	Ungraded
102749	OB2001/003	Oubeep Point 1991	Archaeological	Ungraded
102750	OB2001/004	Oubeep Point 1991	Archaeological	Ungraded
102751	OB1991/117	Oubeep Point 1991	Archaeological	Ungraded
102752	OB1991/116	Oubeep Point 1991	Archaeological	Ungraded
102753	OB1991/115	Oubeep Point 1991	Archaeological	Ungraded
102754	OB1991/114	Oubeep Point 1991	Archaeological	Ungraded
102755	OB1991/118	Oubeep Point 1991	Archaeological	Ungraded
102756	OB1991/119	Oubeep Point 1991	Archaeological	Ungraded
102757	OB1991/121	Oubeep Point 1991	Archaeological	Ungraded
102758	OB1991/120	Oubeep Point 1991	Archaeological	Ungraded
102759	OB1991/113	Oubeep Point 1991	Archaeological	Ungraded
102760	OB1991/102	Oubeep Point 1991	Archaeological	Ungraded
102761	OB1991/112	Oubeep Point 1991	Archaeological	Ungraded
102762	OB1991/111	Oubeep Point 1991	Archaeological	Ungraded
102763	OB1991/110	Oubeep Point 1991	Archaeological	Ungraded
102764	OB1991/109	Oubeep Point 1991	Archaeological	Ungraded
102765	OB1991/103	Oubeep Point 1991	Archaeological	Ungraded

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



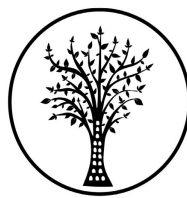
CTS HERITAGE

102766	OB1991/104	Oubeep Point 1991	Archaeological	Ungraded
102767	OB1991/105	Oubeep Point 1991	Archaeological	Ungraded
102768	OB1991/035	Oubeep Point 1991	Archaeological	Ungraded
102769	OB1991/036	Oubeep Point 1991	Archaeological	Ungraded
102770	OB1991/034	Oubeep Point 1991	Archaeological	Ungraded
102771	OB1991/106	Oubeep Point 1991	Archaeological	Ungraded
102772	OB1991/108	Oubeep Point 1991	Archaeological	Ungraded
102773	OB1991/107	Oubeep Point 1991	Archaeological	Ungraded
102774	OB1991/033	Oubeep Point 1991	Archaeological	Ungraded
102775	OB1991/032	Oubeep Point 1991	Archaeological	Ungraded
102776	OB1991/029	Oubeep Point 1991	Archaeological	Ungraded
102777	OB1991/030	Oubeep Point 1991	Archaeological	Ungraded
102778	OB1991/031	Oubeep Point 1991	Archaeological	Ungraded
102779	OB1991/008	Oubeep Point 1991	Archaeological	Ungraded
102780	OB1991/007	Oubeep Point 1991	Archaeological	Ungraded
102781	OB1991/013	Oubeep Point 1991	Archaeological	Ungraded
102782	OB1991/014	Oubeep Point 1991	Archaeological	Ungraded
102783	OB1991/012	Oubeep Point 1991	Archaeological	Ungraded
102784	OB1991/010	Oubeep Point 1991	Archaeological	Ungraded
102785	OB1991/011	Oubeep Point 1991	Archaeological	Ungraded
102786	OB1991/015	Oubeep Point 1991	Archaeological	Ungraded
102787	OB1991/021	Oubeep Point 1991	Archaeological	Ungraded
102788	OB1991/020	Oubeep Point 1991	Archaeological	Ungraded

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



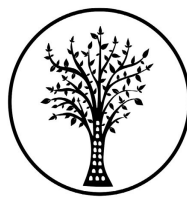
CTS HERITAGE

102789	OB1991/019	Oubeep Point 1991	Archaeological	Ungraded
102790	OB1991/018	Oubeep Point 1991	Archaeological	Ungraded
102791	OB1991/017	Oubeep Point 1991	Archaeological	Ungraded
102792	OB1991/016	Oubeep Point 1991	Archaeological	Ungraded
102793	OB1991/028	Oubeep Point 1991	Archaeological	Ungraded
102794	OB1991/027	Oubeep Point 1991	Archaeological	Ungraded
102795	OB1991/022	Oubeep Point 1991	Archaeological	Ungraded
102796	OB1991/023	Oubeep Point 1991	Archaeological	Ungraded
102797	OB1991/024	Oubeep Point 1991	Archaeological	Ungraded
102798	OB1991/026	Oubeep Point 1991	Archaeological	Ungraded
102799	OB1991/025	Oubeep Point 1991	Archaeological	Ungraded
102800	OB1991/006	Oubeep Point 1991	Archaeological	Ungraded
102801	OB1991/009	Oubeep Point 1991	Archaeological	Ungraded
102802	OB1991/005	Oubeep Point 1991	Archaeological	Ungraded
102803	OB1991/002	Oubeep Point 1991	Archaeological	Ungraded
102804	OB1991/001	Oubeep Point 1991	Archaeological	Ungraded
102805	OB1991/003	Oubeep Point 1991	Archaeological	Ungraded
102806	OB1991/004	Oubeep Point 1991	Archaeological	Ungraded
103001	TP1991/00A	Tweepad	Archaeological	Ungraded
103002	TP1991/00J	Tweepad	Archaeological	Ungraded
103003	TP1991/00L	Tweepad	Archaeological	Ungraded
103004	TP1991/00M	Tweepad	Archaeological	Ungraded
103005	TP1991/00N	Tweepad	Archaeological	Ungraded

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

103006	TP1991/000	Tweepad	Archaeological	Ungraded
--------	------------	---------	----------------	----------

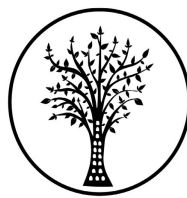
List of heritage resources within proposed prospecting area

Site ID	Site no	Full Site Name	Site Type	Grading	Latitude	Longitude
105669	KHU01	Khubus 01	Burial Grounds & Graves	Grade IIIa	-28.559167	16.554167
105671	BOG 1	Boegoeberg 1	Palaeontological	Grade IIIa	-28.768333	16.576944
34564	ALX001	Alexander Bay 001	Artefacts	Ungraded	-28.610265	16.498439
34565	ALX002	Alexander Bay 002	Artefacts	Ungraded	-28.611079	16.493155
34566	ALX003	Alexander Bay 003	Artefacts	Ungraded	-28.60533	16.479084
34567	ALX004	Alexander Bay 004	Building	Ungraded	-28.607365	16.484762
34568	ALX005	Alexander Bay 005	Building	Ungraded	-28.620956	16.482925
34569	ALX006	Alexander Bay 006	Building	Ungraded	-28.595638	16.482925
34570	ALX007	Alexander Bay 007	Building	Ungraded	-28.613987	16.524811
34571	ALX008	Alexander Bay 008	Building	Ungraded	-28.611312	16.485672
34572	ALX009	Alexander Bay 009	Building	Ungraded	-28.610106	16.478806
34573	ALX010	Alexander Bay 010	Building	Ungraded	-28.601667	16.488419
34574	ALX011	Alexander Bay 011	Building	Ungraded	-28.618809	16.483612
34575	ALX012	Alexander Bay 012	Building	Ungraded	-28.610106	16.481552
34576	ALX013	Alexander Bay 013	Building	Ungraded	-28.612518	16.488419
34578	ALX015	Alexander Bay 015	Building	Ungraded	-28.608901	16.489792
34580	ALX017	Alexander Bay 017	Building	Ungraded	-28.601667	16.489792
34581	ALX018	Alexander Bay 018	Building	Ungraded	-28.606489	16.493912

CTS Heritage

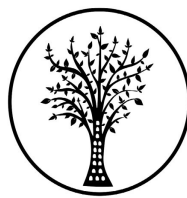
34 Harries Street, Plumstead, Cape Town, 7800

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



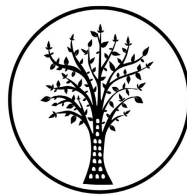
CTS HERITAGE

34582	ALX019	Alexander Bay 019	Building	Ungraded	-28.613987	16.502838
34583	ALX014	Alexander Bay 014	Building	Ungraded	-28.613723	16.506271
34584	ALX016	Alexander Bay 016	Building	Ungraded	-28.610106	16.493912
93823	ABRM1	Alexander Bay Riverine Middens 1	Archaeological	Ungraded	-28.618493	16.47283
93824	ABRM2	Alexander Bay Riverine Middens 2	Archaeological	Ungraded	-28.618964	16.472787
93825	ABRM3	Alexander Bay Riverine Middens 3	Archaeological	Ungraded	-28.619469	16.472795
93826	ABRM4	Alexander Bay Riverine Middens 4	Archaeological	Ungraded	-28.619956	16.472775
93827	ABRM5	Alexander Bay Riverine Middens 5	Archaeological	Ungraded	-28.62076	16.472749
93828	ABRM6	Alexander Bay Riverine Middens 6	Archaeological	Ungraded	-28.621581	16.472744
93829	ABRM7	Alexander Bay Riverine Middens 7	Archaeological	Ungraded	-28.62206	16.473229
93830	ABRM8	Alexander Bay Riverine Middens 8	Archaeological	Ungraded	-28.622319	16.473473
93831	ABRM9	Alexander Bay Riverine Middens 9	Archaeological	Ungraded	-28.622667	16.473814
93832	ABRM10	Alexander Bay Riverine Middens 10	Archaeological	Ungraded	-28.623528	16.474667
93833	ABRM11	Alexander Bay Riverine Middens 11	Archaeological	Ungraded	-28.62394	16.475049
93834	ABRM12	Alexander Bay Riverine Middens 12	Archaeological	Ungraded	-28.624302	16.475395
93835	ABRM13	Alexander Bay Riverine Middens 13	Archaeological	Ungraded	-28.624552	16.475666
93836	ABRM14	Alexander Bay Riverine Middens 14	Archaeological	Ungraded	-28.624729	16.475832
93837	ABRM15	Alexander Bay Riverine Middens 15	Archaeological	Ungraded	-28.625103	16.476213
93838	ABRM16	Alexander Bay Riverine Middens 16	Archaeological	Ungraded	-28.625637	16.476709
93839	ABRM17	Alexander Bay Riverine Middens 17	Archaeological	Ungraded	-28.6273	16.47777
93840	ABRM18	Alexander Bay Riverine Middens 18	Archaeological	Ungraded	-28.630995	16.479605
93841	ABRM19	Alexander Bay Riverine Middens 19	Archaeological	Ungraded	-28.631779	16.479712
93842	ABRM20	Alexander Bay Riverine Middens 20	Archaeological	Ungraded	-28.632496	16.479744



CTS HERITAGE

93843	ABRM21	Alexander Bay Riverine Middens 21	Archaeological	Ungraded	-28.633495	16.479884
93844	ABRM22	Alexander Bay Riverine Middens 22	Archaeological	Ungraded	-28.634001	16.479927
93845	ABRM23	Alexander Bay Riverine Middens 23	Archaeological	Ungraded	-28.634237	16.479948
93846	ABRM24	Alexander Bay Riverine Middens 24	Archaeological	Ungraded	-28.634382	16.479948
93847	ABRM25	Alexander Bay Riverine Middens 25	Archaeological	Ungraded	-28.634703	16.480018
93848	ABRM26	Alexander Bay Riverine Middens 26	Archaeological	Ungraded	-28.634923	16.480085
93849	ABRM27	Alexander Bay Riverine Middens 27	Archaeological	Ungraded	-28.635078	16.480145
93850	ABRM28	Alexander Bay Riverine Middens 28	Archaeological	Ungraded	-28.635505	16.480329
93851	ABRM29	Alexander Bay Riverine Middens 29	Archaeological	Ungraded	-28.635699	16.480408
93852	ABRM30	Alexander Bay Riverine Middens 30	Archaeological	Ungraded	-28.63609	16.480566
93853	ABRM31	Alexander Bay Riverine Middens 31	Archaeological	Ungraded	-28.636529	16.48075
93854	ABRM32	Alexander Bay Riverine Middens 32	Archaeological	Ungraded	-28.636665	16.480809
93855	ABRM33	Alexander Bay Riverine Middens 33	Archaeological	Ungraded	-28.637169	16.480994
93856	ABRM34	Alexander Bay Riverine Middens 34	Archaeological	Ungraded	-28.638552	16.481574
93857	ABRM35	Alexander Bay Riverine Middens 35	Archaeological	Ungraded	-28.638756	16.481635
93858	ABRM36	Alexander Bay Riverine Middens 36	Archaeological	Ungraded	-28.639814	16.482078
93859	ABRM37	Alexander Bay Riverine Middens 37	Archaeological	Ungraded	-28.640368	16.482287
93860	ABRM38	Alexander Bay Riverine Middens 38	Archaeological	Ungraded	-28.640922	16.48252
93861	ABRM39	Alexander Bay Riverine Middens 39	Archaeological	Ungraded	-28.642131	16.482987
93862	ABRM40	Alexander Bay Riverine Middens 40	Archaeological	Ungraded	-28.642475	16.483164
93863	ABRM41	Alexander Bay Riverine Middens 41	Archaeological	Ungraded	-28.644372	16.48398
105668	KHU01	Khibus 01	Burial Grounds & Graves	Ungraded	-28.559167	16.554167



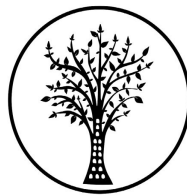
CTS HERITAGE

25780	Kai Kai		Archaeological	Ungraded	-29.310833	17.001667
105672	ALEXKOR 01	Alexkor Diamond Mine 01	Shell Midden	Ungraded	-28.652222	16.508333
105674	ALEXKOR 03	Alexkor Diamond Mine 03	Shell Midden	Ungraded	-28.882857	16.623948
105675	ALEXKOR 04	Alexkor Diamond Mine 04	Shell Midden	Ungraded	-28.936389	16.774722
105677	ALEXKOR 06	Alexkor Diamond Mine 06	Artefacts, Stone walling	Ungraded	-29.062778	16.871944
105679	ALEXKOR 07	Alexkor Diamond Mine 07	Stone walling	Ungraded	-29.040086	16.751205
105684	ALEXKOR 11	Alexkor Diamond Mine 11	Shell Midden, Artefacts	Ungraded	-29.110278	16.865
105685	ALEXKOR 13	Alexkor Diamond Mine 13	Shell Midden, Artefacts	Ungraded	-28.998333	16.825278

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

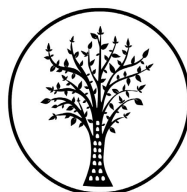
APPENDIX 2 Reference List

Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title
4516	AIA	Dave Halkett	01/01/1999	An Archaeological Assessment of Power Line Routes Between Muisvlak and Eksteenfontein, Richtersveld
4517	AIA	Cobus Dreyer	28/04/2005	Archaeological Assessment of the Proposed Upgrading of the Gravel Road Between Alexander Bay and Khubus, Richtersveld, Northern Cape
7013	AIA	David Morris	01/11/2005	Archaeological Impact Assessment at the Kai Kai Coastal Estate Development South of Port Nolloth, Northern Cape
7774	AIA	Timothy Hart	01/10/2010	Proposed Richtersveld Wind farm
110234	AIA	Timothy Hart	13/02/2013	Port Nolloth Lighthouse Basic Assessment Report - Heritage
384358	AIA	Timothy Hart	19/07/2016	Impact Assessment For The Amendment Of An Environmental Management Programme And Environmental Impact Assessment In Support Of A Mining Right Held By West Coast Resources ((pty)) Ltd Over The Namaqualand Mines, Northern Cape Province
8375	HIA	Jayson Orton	09/04/2010	Heritage Impact Assessment For The Services Upgrade In Alexander Bay, Namakwa Magisterial District,
110591	HIA	Timothy Hart	01/02/2013	Heritage Specialist Report Conducted As Part Of A Basic Assessment For A Proposed New Lighthouse On Erf 335, Beach Street, Port Nolloth.
168252	HIA	Chrispen Chauke	31/05/2014	Heritage Impact Assessment Studies For The Proposed Gromis Oranjemund Reconductoring, Namaqualand Region, Richtersveld Local Municipality, Northern Cape
368522	HIA	Anton van Vollenhoven	22/08/2016	HIA Eskom Kudu-Oranjemund Northern Cape
374908	HIA	Anton van Vollenhoven	19/08/2016	HIA Final Kudu Oranjemund
390540	HIA	Jonathan Kaplan	01/02/2008	The Archaeological And Palaeontological Importance Of The Alexkor Diamond Mining Area Northern Cape Province
396817	AIA	Jonathan Kaplan	01/08/2011	Archaeological Impact Assessment Proposed Port Nolloth Oxidation Ponds And Sewer Pipeline Northern Cape

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

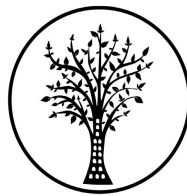
Palaeontological Impact Assessments				
Nid	Report Type	Author/s	Date	Title
8836	PIA	John Pether	01/11/2007	Coastal Plain Deposits of Namaqualand: Historical Palaeontology and Stratigraphy
8837	PIA	John Pether	28/09/2007	Palaeontological Heritage Impact Assessment and Mitigation Approaches
368531	PIA	Marion Bamford	22/08/2016	PIA Eskom Kudu-Oranjemund Northern Cape

Research and Academic Reports			
Report Type	Author/s	Date	Title, Publication
PhD Thesis	Jayson Orton	2012	Late Holocene archaeology in Namaqualand, South Africa: hunter-gatherers and herders in a semi-arid environment. Thesis submitted for the degree of Doctor of Philosophy at the University of Oxford.
Research Article	Lita Webley, Jayson Orton	2013	Excavation Of Two Shell Middens At Port Nolloth On The Namaqualand Coastline, Northern Cape, South Africa. South African Archaeological Bulletin 68 (197): 86–92, 2013
Research Article	Klein, R., Cruz-Uribe, K., Halkett, D., Hart, T., Parkington, J.	1999	Paleoenvironmental and Human Behavioral Implications of the Boegoeberg 1 Late Pleistocene Hyena Den, Northern Cape Province, South Africa. Quaternary Research 52, 393– 403

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
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
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

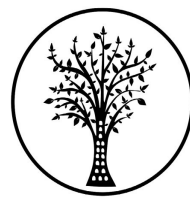
Full guide to Palaeosensitivity Map legend

	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 PALAEOONTOLOGICAL SENSITIVITY

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

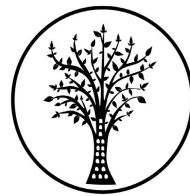
- reviewing the fossil sensitivity maps available on the South African Heritage Resources Information System (SAHRIS)
- considering the nature of the proposed development
- when available, taking information provided by the applicant related to the geological background of the area into account

DETERMINATION OF THE COVERAGE RATING ASCRIBED TO A REPORT POLYGON

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

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:

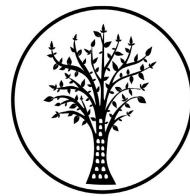
- enough work has been undertaken in the area
- it is the professional opinion of CTS that the area has already been assessed adequately from a heritage perspective for the type of development proposed

(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.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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



CTS HERITAGE

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.

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.**

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

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