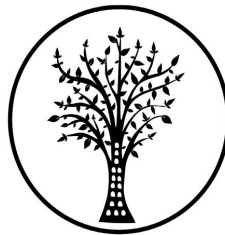


DESKTOP HERITAGE IMPACT ASSESSMENT

In terms of Section 38(8) of the NHRA for the
MITCHELL'S BAY MINERALS PROSPECTING RIGHTS APPLICATION
SOUTH OF HONDEKLIPBAAI, NORTHERN CAPE

Prepared by



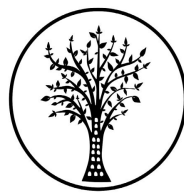
CTS HERITAGE

for PHS Consulting

February 2018

Report by:

Nicholas Wiltshire



CTS HERITAGE

THE INDEPENDENT PERSON WHO COMPILED A SPECIALIST REPORT OR UNDERTOOK A SPECIALIST PROCESS

I, Nicholas Wiltshire, as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

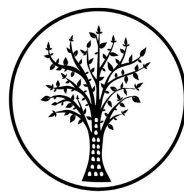
Signature of the specialist

Name of company: CTS Heritage

Date: 12/02/2018

Nicholas Wiltshire (MSc) is an archaeologist and heritage practitioner with over 13 years experience in heritage, as a researcher, field archaeologist and government employee. He is accredited for CRM work with the Association of Southern African Professional Archaeologists (ASAPA) and the Association of Professional Heritage Practitioners (APHP) and has previously worked for Heritage Western Cape as a Heritage Officer in the Archaeology, Palaeontology and Meteorites Unit, and as the SAHRIS Project Manager and developer for the National Inventory at SAHRA.

See Appendix 3 for the specialist's CV.



CTS HERITAGE

EXECUTIVE SUMMARY

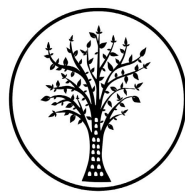
This application relates to the Prospecting Right Application in terms of the Mineral and Petroleum Resources Development Act, Act 28 of 2002 (MPRDA) by Saxon Heavy Minerals (Pty) Ltd.

The purpose of the prospecting programme is to establish the presence of economic deposits of heavy minerals on three farms located in the Namakwa Registration District, namely the Remainders of Farms No. 495, 496 and 489, Hondeklipbaai. Prospecting for this project will comprise both non-invasive (surface mapping and surveying in Phase 1) and invasive (auger and RC drilling in Phase 2) methods.

Despite the extensive mining over the last 80 years in the area (visible on Google Earth Figs 1a & 1b), it is still likely that many undisturbed heritage sites will be found, particularly within 300m of the shore. This desktop HIA shows that most known sites previously recorded are found in undisturbed areas. As the prospecting will be focused on disturbed areas, where the heavy minerals are more likely to occur, these activities will have limited impact on significant heritage resources when properly managed and planned for. It is noted that the area proposed for prospecting is underlain, in part, by geological formations of very high palaeontological significance.

Taking cognisance of the relatively low impact likely from the prospecting methods proposed, CTS recommends that extra care is taken to avoid impacts to significant archaeological resources within **300m of the high water mark and near known heritage sites**, particular Spoegrivier Cave around which a **1.5km no prospecting buffer zone** has been set. In these high sensitivity areas, only hand augering should take place. An archaeological and palaeontological awareness programme should be implemented prior to prospecting taking place on the site, and 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 and that a site management plan be drawn up specifically dealing with heritage impacts in the integration of the EMP.

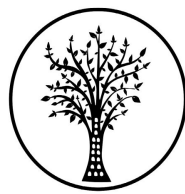
This approach is also consistent with the heritage application approval process previously submitted for another prospecting application in a similar context further north along the West Coast (see SAHRIS CASE ID 10914).



CTS HERITAGE

CONTENTS

1. INTRODUCTION	4
1.1 Background Information on Project	4
1.2 Description of Property and affected Environment	5
2. METHODOLOGY	5
2.1 Purpose of HIA	5
2.2 Summary of steps followed	6
3. HISTORY AND EVOLUTION OF THE SITE AND CONTEXT	6
3.1 Definition of the property	6
3.2 Geology, geomorphology, climate and vegetation	6
3.3 Palaeontological, Archaeological and Historical Background of the study area	6
4. IDENTIFICATION OF HERITAGE RESOURCES	11
4.1 Summary of findings of the Specialists	11
4.2 Heritage Resources identified	12
4.3 Palaeontological findings	12
4.4 Mapping of heritage resources	16
5. ASSESSMENT OF THE IMPACT OF THE DEVELOPMENT	22
5.1 Assessment of impact to Heritage Resources	22
5.2 Sustainable Social and Economic Benefit	25
5.3 Proposed development alternatives	25
6. RESULTS OF PUBLIC CONSULTATIONS	25
7. CONCLUSION AND RECOMMENDATIONS	26
8. REFERENCES	28
APPENDICES	30
APPENDIX 1: Heritage Resources located within the prospecting area (Figures 3a-d)	30
Heritage Resources located within the Spoegrivier area (Figures 3bi-3bii)	42
Heritage Resources located within the 300m Coastal Buffer area (Figures 2a-3dii)	48
APPENDIX 2: Chance Finds Of Palaeontological Material Protocol	54
APPENDIX 3: Results of Public Consultation	55
APPENDIX 4: Specialist CVs	56
APPENDIX 5: Desktop PIA by Dr John Pether	57



CTS HERITAGE

1. INTRODUCTION

1.1 Background Information on Project

Application is made for non-invasive and invasive prospecting to establish the presence of economic deposits of heavy minerals on three 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 total farm area is 7 437,21 ha, but delineation of the heavy mineral reserves will serve to reduce the application area to encompass specific portions of the farms. Access to the drill sites will be made via existing farm roads or fence line tracks wherever possible.

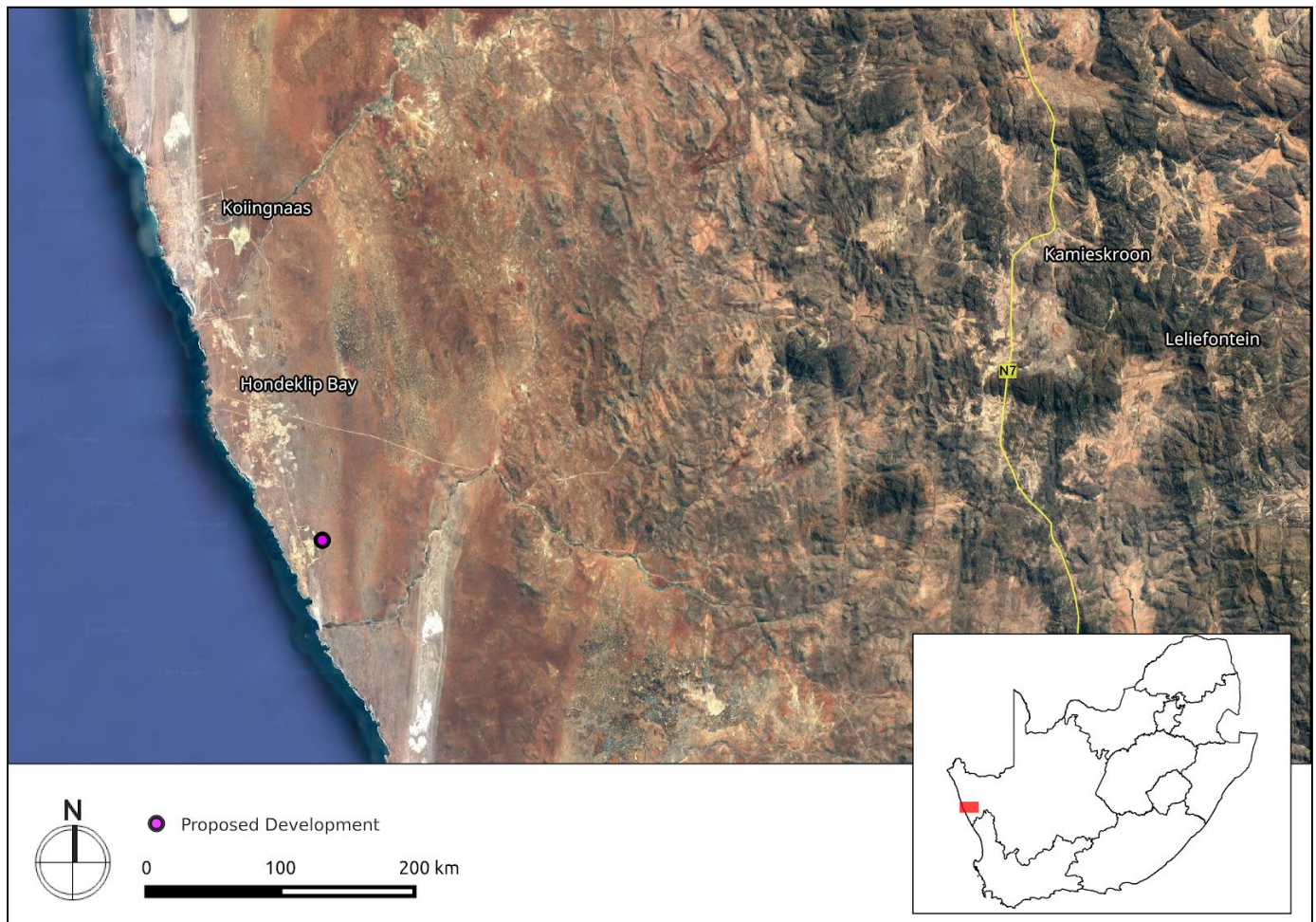
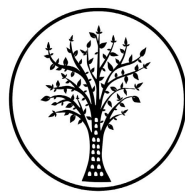


Figure 1a. A satellite image of the study area with the proposed prospecting area indicated.



CTS HERITAGE

1.2 Description of Property and affected Environment

The study area straddles the mouth of the Spoegrivier and extends north along the coast of the Namakwa District Municipality towards Hondeklipbaai. The northern extent of the prospecting area, falling within the boundaries of Langklip Farm 489, has been heavily disturbed by historic diamond mining that has taken place in the region for the past 80 years.

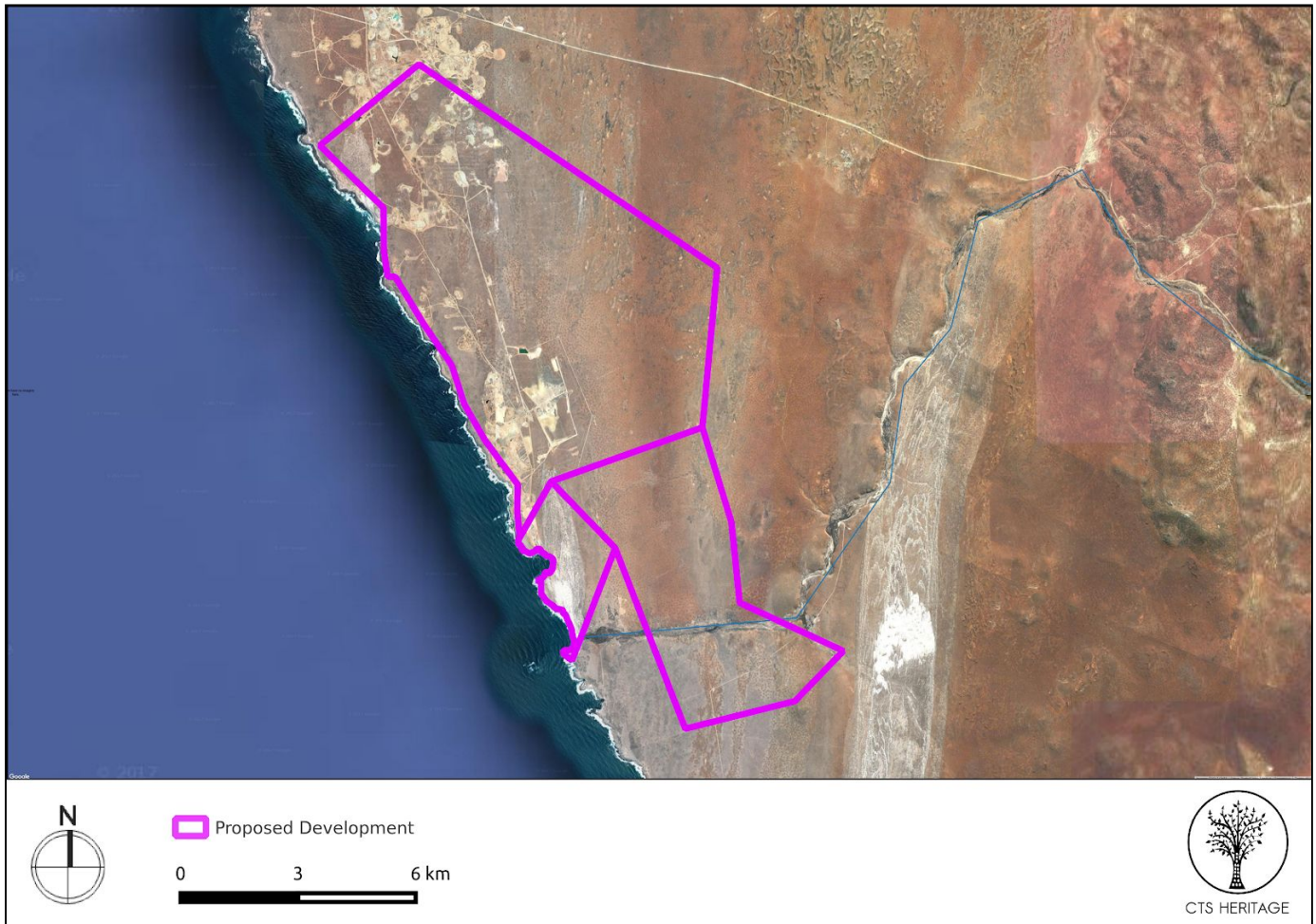
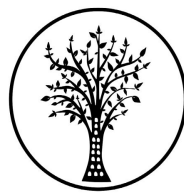


Figure 1b. Aerial Image of proposed prospecting area.

2. METHODOLOGY

2.1 Purpose of HIA

The purpose of this Heritage Impact Assessment (HIA) is to satisfy the requirements of section 38(8), and therefore section 38(3) of the National Heritage Resources Act (Act 25 of 1999). In this instance, this desktop HIA is submitted prior to the prospecting phase of the project in order to provide the following information:



CTS HERITAGE

- The results of the socio-economic impacts or the consultation as it pertains to heritage as per section 38(3)d and 38(3)e;
- A map clearly depicting the disturbed area vs. non-disturbed areas must be provided in relation to identified heritage resources;
- An assessment of impacts per activity and phase on identified heritage resources as per section 38(3)b;
- An account of the significance of heritage resources in order to provide clear, detailed mitigation measures per activity and phase of the project as per section 38(3)g.

2.2 Summary of steps followed

- The layout of the proposed prospecting areas was assessed relative to known heritage resources and previous heritage studies, as captured on SAHRIS;
- Research regarding the known sites and heritage character of the area was conducted;
- A desktop Palaeontological Impact Assessment was been compiled, and the recommendations arising from that study were incorporated into this report;
- Buffer zones were identified and mapped to limit impacts to high sensitivity heritage resources;
- Impacts to known heritage resources were tabulated per activity and phase;
- Mitigation measures for heritage resources were derived per activity and phase;
- The results of the consultation and public participation processes was sought from the EAP.

3. HISTORY AND EVOLUTION OF THE SITE AND CONTEXT

3.1 Definition of the property

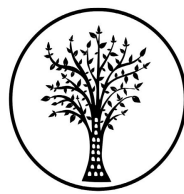
The study area, comprising three farms, lies along the coast of the Namakwa Municipality, in the Kamiesberg Local Municipality. The area has been extensively disturbed by historic diamond mining activities.

3.2 Geology, geomorphology, climate and vegetation

The area is largely under intermittent marine gravel deposits and successions of unconsolidated sheets of marine and aeolian sands that range from 1 to 30m thick (PHS Consulting and Creo Design 2017). The climate is arid, and the vegetation in this region is limited to low lying shrubs and succulents able to withstand the harsh, dry environment, falling within the Namaqualand Strandveld vegetation type. Much of this vegetation has been destroyed by the successive years of mining in the study area. The rocky coastline, however, contains abundant food sources in the form of shellfish, crayfish, marine birds and mammals.

3.3 Palaeontological, Archaeological and Historical Background of the study area

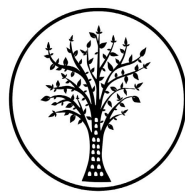
Archaeological evidence points to occupation of the West Coast region of South Africa, including the Namakwa coast from the Early Stone Age, through to the Middle and Later Stone Age, up until the arrival of early European travellers, farmers and missionaries from the 18th century onward (Hart 2016, NID 384358). The rocky shoreline



CTS HERITAGE

attracted hunter-gatherers during the Holocene, in particular, resulting in rich archaeological deposits in the form of shell middens that “typically occur within 1 km of the coast and tend to be prolific near estuaries and in dune fields, and adjacent to rocky shores... Areas close to sheltered bays contain so many middens that at times it is difficult to distinguish one from the next. Inland of the coast the frequency of shell middens drops away, however, the pattern is not always predictable as an area with good game and a source of fresh water can result in middens existing kilometres inland” (Ibid.). In the past 2 000 years, early herders began arriving in the area, introducing livestock and new material culture (Ibid.). Unmarked human burials occur, but these are seldom found by archaeologists, and are more commonly unearthed by mining operations (Ibid.).

According to the SAHRIS Palaeosensitivity Map, the area proposed for prospecting is underlain by geological formations ranging from very high significance to insignificant or zero heritage significance, with several formations of as yet undetermined significance (Figure 4). The formations of little to no palaeontological significance include granites and gneisses, while surficial alluvium accounts for the low significance deposits. Shelly, aeolian sands of the Witzand Formation are present, and considered to be of moderate significance, while the West Coast Group, here represented by red, aeolian sands of the Koekenaap Formation, and semi-consolidated sands of the Graauw Duinen Formation, are considered to hold very high palaeontological significance. These deposits have been accorded very high palaeontological sensitivity as they form 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 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.



CTS HERITAGE

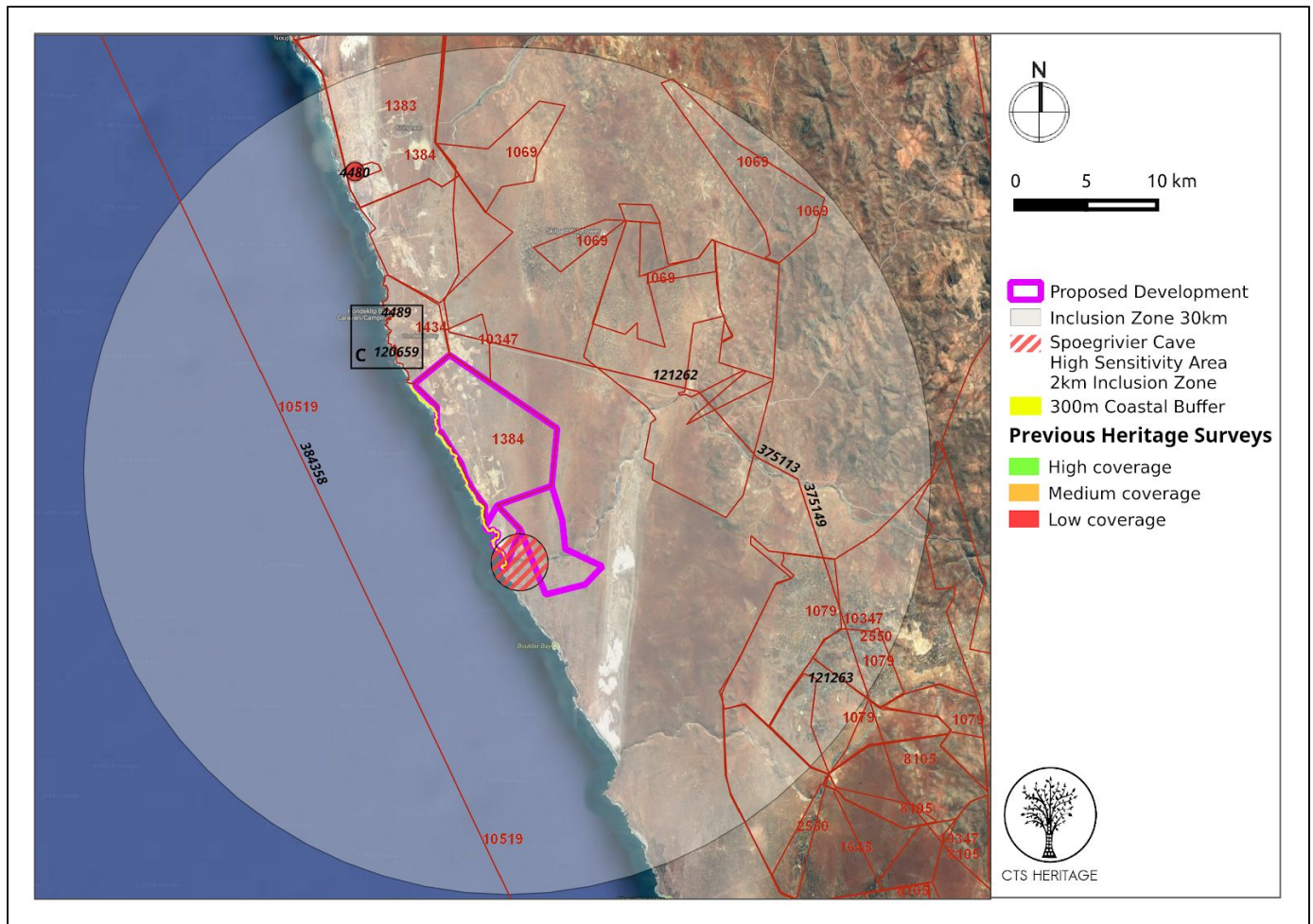
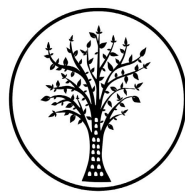


Figure 2a. Previous heritage studies conducted in the vicinity of the proposed prospecting area. Note, due to the large number of archival applications back captured by SAHRA from 2012 - 2014, few HIAs were done before the applications were approved by the DMR as SAHRA did not comment on time.



CTS HERITAGE

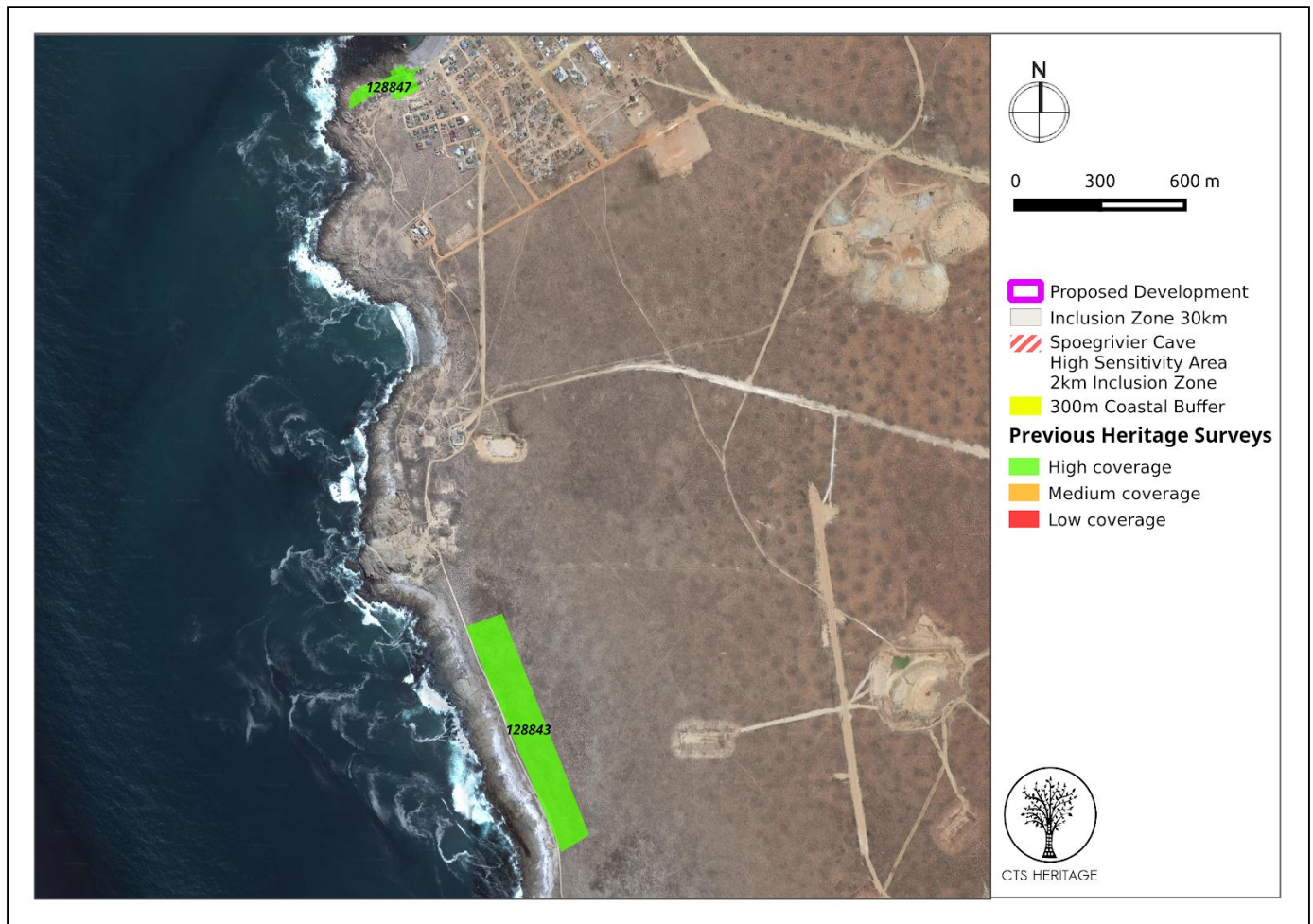
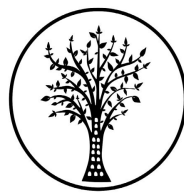


Figure 2b. Previous heritage studies conducted in the vicinity of the proposed prospecting area.



CTS HERITAGE

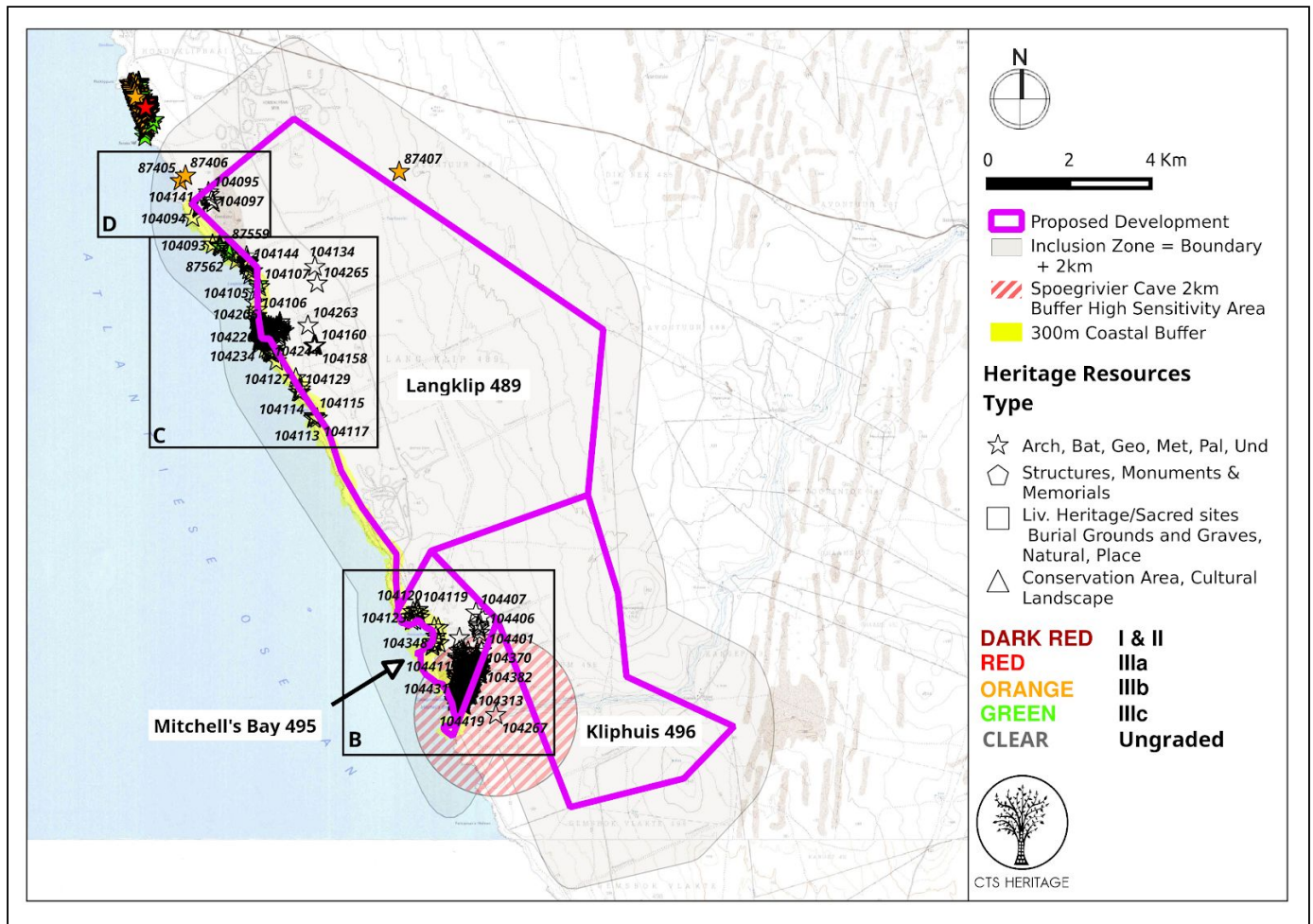
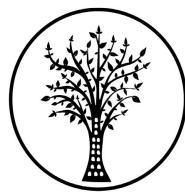


Figure 3. Mapping of known heritage resources in the vicinity of the proposed prospecting area. See Figures 5a-d below for inset maps.



CTS HERITAGE

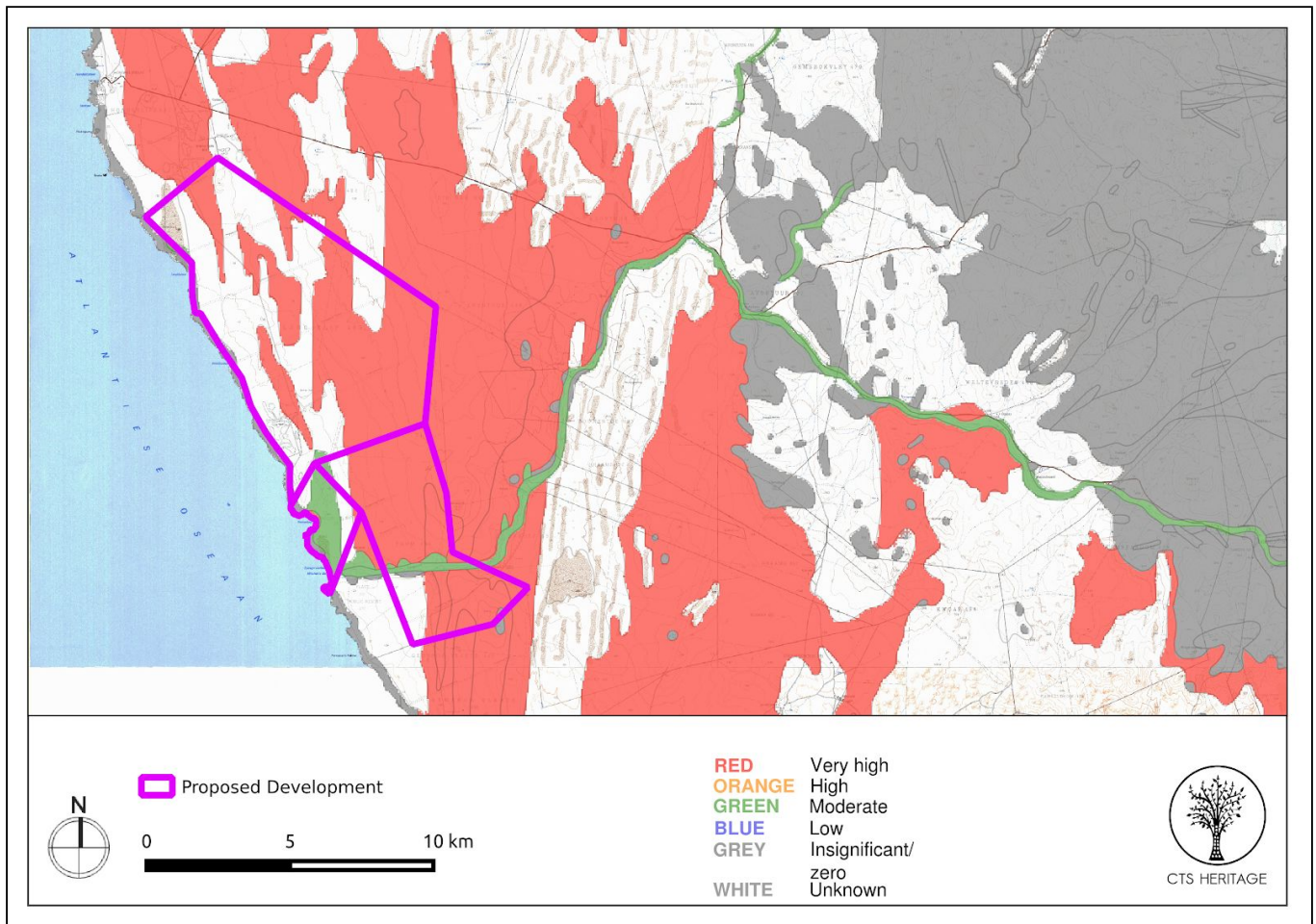


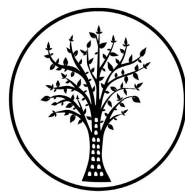
Figure 4. Palaeontological Sensitivity of the proposed prospecting area.

4. IDENTIFICATION OF HERITAGE RESOURCES

4.1 Summary of findings of the Specialists

No new fieldwork has been conducted as part of this desktop HIA. Known heritage resources in the area have been identified making use of the SAHRIS sites and cases maps, the bulk of which were extracted by staff of CTS (Figures 2a and 2b and 3). Previously, 11 HIAs have been conducted in the area (Figure 2a and 2b). In addition to this, detailed analyses was drawn from two academic theses of the known sites along this stretch of coastline (Dewar 2008; Orton 2012), while extensive research work has been undertaken at a cave at Spoegrivier mouth (Webley 1992, 2002; Sealy & Yates 1994; Vogel, Plug & Webley 1997).

There are no declared sites within the proposed prospecting area but there are 370 recorded sites. All these sites are archaeological and include shell middens, occupation sites and artefact scatters (Figures 3 and 5a-d). Ten of these sites have been graded, with three graded as Grade IIIb sites, and the rest as Grade IIIc sites.



CTS HERITAGE

4.2 Heritage Resources identified

The 370 identified heritage resources within 2kms of the prospecting zone serve to characterise the heritage of the area (Figure 3 and 5a-d). These sites all confirm the expected pattern of high concentrations of Holocene sites in the form of artefact scatter sites and shell middens within close proximity of the coast.

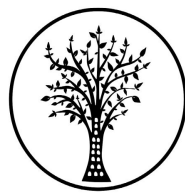
Sites include a large Later Stone Age shell scatter on the crest of a dome-shaped dune containing mixed *Patella* species, stone artefactual material and potsherds (SID 87405). Large areas containing several discrete LSA shell scatters were also recorded (SID 87406). Archaeological material in these scatters included black mussel and mixed *Patella* species as well as a few pieces of quartz and ostrich eggshell. Recent remains were represented by potsherds and an old brass flint striker. Further sites also showed the presence of historic material in association with stone artefacts (SID 87407) although it was not possible to determine whether these finds represented contact sites, deflated accumulations or later intrusions.

The location of the sites recorded thus far supports the expected distribution pattern, i.e. that most sites are confined to a narrow strip along the coastline and are concentrated near rocky shores (Figures 3 and 5a-d). The greatest concentration of sites exists within 300m of the high tide line. Closest to shore, the sites are extensive and overlapping, and it is difficult to resolve individual sites archaeologically. These sites tend to be middens that comprise of shellfish remains almost entirely. Sites located further inland are more likely to have visible site boundaries, show greater variety of artefactual remains and even exhibit spatially differentiated activity areas. It is also clear, however, that some sites are located further inland (Figure 3a; SID 87407), likely in areas that previously had access to fresh water, although there is no way to reliably predict the location of such sites. The vicinity of Spoegrivier Cave contains many archaeological sites, and should be considered a high sensitivity zone (Figures 2a, 3a, 5a and 5b).

4.3 Palaeontological findings

Dr John Pether was commissioned to compile a desktop Palaeontological Impact Assessment, and his findings are integrated below. The PIA is provided in Appendix 4.

The Precambrian granite-gneisses and other highly-deformed metasediments of the Namaqua-Natal Metamorphic Province are entirely unfossiliferous, while strata of the Palaeozoic and Mesozoic eras have been mostly eroded from the western margin of the subcontinent during and subsequent to the rifting of the Gondwana supercontinent and the opening of the Atlantic Ocean 130-120 Ma (Pether 2017, NID 406187). Further to this, the early coastal plain would have been inundated or transgressed by the sea during times of late Cretaceous high sea-levels, and transgressive Eocene events also affected the coastal plain, meaning that little evidence of this earlier marine history remains along Namaqualand (Ibid.). The predominant deposits in this area, rather, are Cenozoic coastal deposits between the Orange River and Elandsbaai that comprise the West Coast Group.



CTS HERITAGE

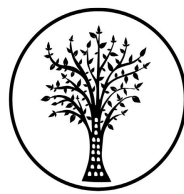
Buried between the main Namaqualand rivers are ancient river channels that attest to the wetter climates of the early Cenozoic, when more rivers drained the coastal plain. These diamondiferous palaeochannels have fluvial infills that have been kaolinized, and silcrete has formed within the channel deposits in places. Beds of carbonaceous, peaty material containing plant fossils also occur, and these deposits comprise the Koingnaas Formation, which is not shown on the geological maps, being covered by younger deposits. Fossil pollen from the organic-rich beds has provided evidence of the vegetation type present and the age of the Koingnaas Formation. The area was forested, much like the present Cape south coast, with yellowwoods, conifers and ironwoods, and supports an Oligocene maximum age. This pollen record, not replicated elsewhere, provides evidence for the deep time origins for the uniqueness of the Cape Floristic Region.

The predominant deposits in this area, and those of the highest palaeontological significance, are the aeolian sands of the Graauw Duinen and Koekenaap Formations. The Graauw Duinen Formation comprises successive deposits of semi-consolidated aeolianites that range in age from about 4.5 – 3.5 Ma to ~3 Ma.

Overlying the hard surface of the dorbank are compact, but unconsolidated markedly-red sands, the “Red Aeolian Sand” or RAS that is exploited at Namakwa Sands mine, now proposed as the Koekenaap Fm. The red sands of the Koekenaap Fm. occupy most of the surface of the Namaqualand coastal plain and underlie younger formations that obscure surface features of the red sands over large areas. The red sands are underlain by scatters of MSA material on top of the palaeosurface formed on the “Dorbank” or older aeolian formations. Optically-Stimulated-Luminescence (OSL) dating of reddened coversands indicate late Quaternary ages between ~80 ka and ~30 ka and are presumed to reflect depositional ages of the red aeolian sands.

It is noted that, given the deflationary wind regime prevalent in the area, the remaining marine formations are likely to be overlain by aeolianites that considerably postdate them, and in the Hondeklipbaai area, the deflated early Pliocene Avontuur Fm. is overlain by thick aeolianites of probable mid-Quaternary age. Furthermore, the Koekenaap Formation is not as patchily prevalent as its depiction on geological maps would indicate. Rather it is a widespread, reddened coversand unit of mainly vegetated sandsheets and low dunes that, on the basis of satellite imagery, occur inland of the coastal area.

The vertebrate fossils (bones, teeth) found in the coastal plain deposits are absolutely critical for the provision of age constraints. The sample of identifiable fossil bones and teeth from coastal Namaqualand is small, and currently is just sufficient to provide age constraints that support correlations with gross sea-level/ice-volume history. Nevertheless, study of the Hondeklip exposures have demonstrated that there are more bone/teeth fossils in the deposits than is generally perceived, as has been revealed by dedicated searching. These occur in the following contexts:



CTS HERITAGE

1. Basal, petrified, mixed assemblage: petrified (phosphatized), variously abraded, reworked fossils found the basal gravels and that pre-date the enclosing marine deposits. Includes both terrestrial and marine vertebrates.
2. The marine assemblage: cetacean, seabird and seal fossils contemporaneous with the enclosing marine deposits. Input of terrestrial bones is associated with local back-barrier environments (lagoons, tidal channel lags).
3. The capping, terrestrial assemblage: Bones of land animals common on the extensive palaeosurface erosively formed on the marine deposits.
4. Overlying terrestrial deposits: Mainly aeolianites (dune, interdune/pan and sandsheet deposits), locally with colluvial and ephemeral streamwash deposits. Rare bones occur on palaeosurfaces within these sequences. Fossils are more common in interdune deposits.

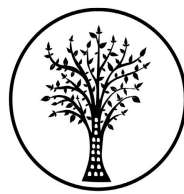
In aeolianites, the fossil material most commonly seen is the ambient fossil content of dune sands: land snails, tortoise shells and mole bones. Other small bones occur very sparsely such as bird and small mammal bones. The fossil content is more abundant in association with palaeosurfaces and their soils (palaeosols), formed during periods of dune stabilization and which define aeolian packages and larger formations. Importantly, the bones of larger animals (e.g. antelopes) are more persistently present along palaeosurfaces formed on top of marine deposits and the palaeosurfaces which separate the major aeolianite units.

The deposits on slopes adjacent to the coast have a higher content of fossil bones due to the attraction of the shoreline for foraging and scavenging. For example, jackals and hyaenas scavenge seabird, seal and other carcasses, carrying remains onto the sand slopes. The most spectacular bone concentrations found in aeolianites are due to the bone-collecting behaviour of hyaenas which store bones in and around their lairs.

In younger aeolianites such as those expected in the Hondeklipbaai area, it is more likely that fossil bones may occur in an archaeological context, with artefacts and shell. The fossil material in these deposits is a sample of the middle and late Quaternary fauna of the Namaqualand coast, such as large species (elephant, sivathere, zebra), and is often associated with ESA artefacts. The estimated age is mid-Quaternary and the large mammals indicate that the coast was better watered than the present-day.

The fossil bone finds from excavations in aeolianites demonstrate that this sparse material, of both small (rodents, birds) and larger animals (antelopes, carnivores), is important to on-going palaeoclimatic, palaeobiological and biostratigraphic studies. Consequently, the palaeontological sensitivity of the aeolian formations is very high with respect to fossil bones.

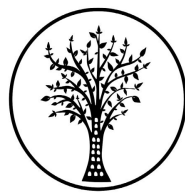
The palaeontological heritage of the West Coast Group provides critical data concerning the age and depositional settings of Cenozoic coastal sediments along the west coast that is also important for diamond mining. These



CTS HERITAGE

fossils contribute to unravelling the complex history of sea-level change, continental uplift, palaeocurrents and palaeoclimates as well as the biogeography and evolution of terrestrial mammals (including hominins) and marine invertebrates in the southern African region. Key reviews of West Coast Group sediments and fossils are provided by Pether (1994), Pickford & Senut (1997), Pether et al. (2000), De Beer et al. (2000), Roberts et al. (2006), Pether (2007), Pether in Almond & Pether (2008), De Beer (2010) and Minnaar et al. (2011). Fossil woods (e.g. yellowwood), pollens and rare silicified bones of Oligocene to Early Miocene age are recorded from peats within the Koinaas Formation fluvial channel infills. Relict deposits of a possible Paleogene transgression containing fragmentary fossil bones are recorded inland from Doringbaai at elevations of over 100 m amsl. The Miocene to Pleistocene vertebrate faunas recorded from the river gravels of the Arris Drift Formation along the lower Orange River (Corvinus & Hendey 1978, Hendey 1978, 1984, Dingle et al., 1983, Almond 2009) may also be represented within Neogene fluvial terraces and channels further south along the Namaqualand coast. Rare skeletal remains of archaic *Homo sapiens* have been recovered from the Orange River mouth (Senut et al. 2000). Lignites (fossil peats) are reported from ancient deposits of the Olifants River north of Strandfontein. The various Miocene – Pliocene packages of shallow marine to beach deposits of the Alexander Bay Formation are each characterised by distinctive biotas of extinct, warm-water shelly invertebrates (e.g. oysters and other bivalves, brachiopods, barnacles). For example, the Middle Miocene Kleinsee Member has the bivalve *Isognomon gariensis* while the Early Pliocene Avontuur Member and Late Pliocene Hondeklip Bay Member are associated with the bivalves *Donax haughtoni* and *D. rogersi* respectively. The shelly fossils occur together with fish teeth, marine mammals, trace fossils and reworked terrestrial fossil remains including mammals (e.g. equids, suids, hominoids, elephantids, whales; Pickford & Senut 1997) and reworked petrified wood, much of which is originally Cretaceous in age (Bamford & Corbett 1994, 1995). Comparable marine sediments in the Pleistocene to Holocene Curlew Strand Formation contain modern cold-water shelly faunas (e.g. black mussels). Miocene to Holocene coastal aeolianites (Graauw Duinen Formation, Olifants River Formation etc) yield a range of terrestrial gastropods, mammalian bones and teeth (e.g. elephantids) and tortoise carapaces associated with palaeosurfaces or vlei deposits as well as trace fossils and stone artefacts (e.g. calcretized root casts, termitaria). Distinctive morphotypes of thick-shelled ostrich eggs within these aeolianites may be of considerable biostratigraphic value (cf Senut & Pickford 1995). The wide range of subfossil plant and animal fossils recorded from Late Quaternary to Holocene dune sands such as the Swartlinter Formation – for example mammalian bones and teeth, tortoises, land snails, plant debris including peats and charcoal, microfossils and traces - have been summarized by Pether (2008, 2012, 2017). Scattered bones associated with land snails and stone artefacts may also be found in Quaternary cover sands on the coastal plain.

Basement igneous, metamorphic and metasedimentary bedrocks cropping out along the Namaqualand coast are either unfossiliferous or are likely to contain - at most - microfossils and perhaps poorly-preserved stromatolites (Gariiep Supergroup). Diverse fossil heritage occurs within numerous terrestrial to shallow marine subunits of the Cenozoic West Coast Group. Fossiliferous Pleistocene to Holocene sediments cropping out close to modern sea level are especially vulnerable to impacts, but many older fossiliferous units in the West Coast Group are buried beneath thick aeolianites and / or elevated well above the modern coast.



CTS HERITAGE

4.4 Mapping of heritage resources

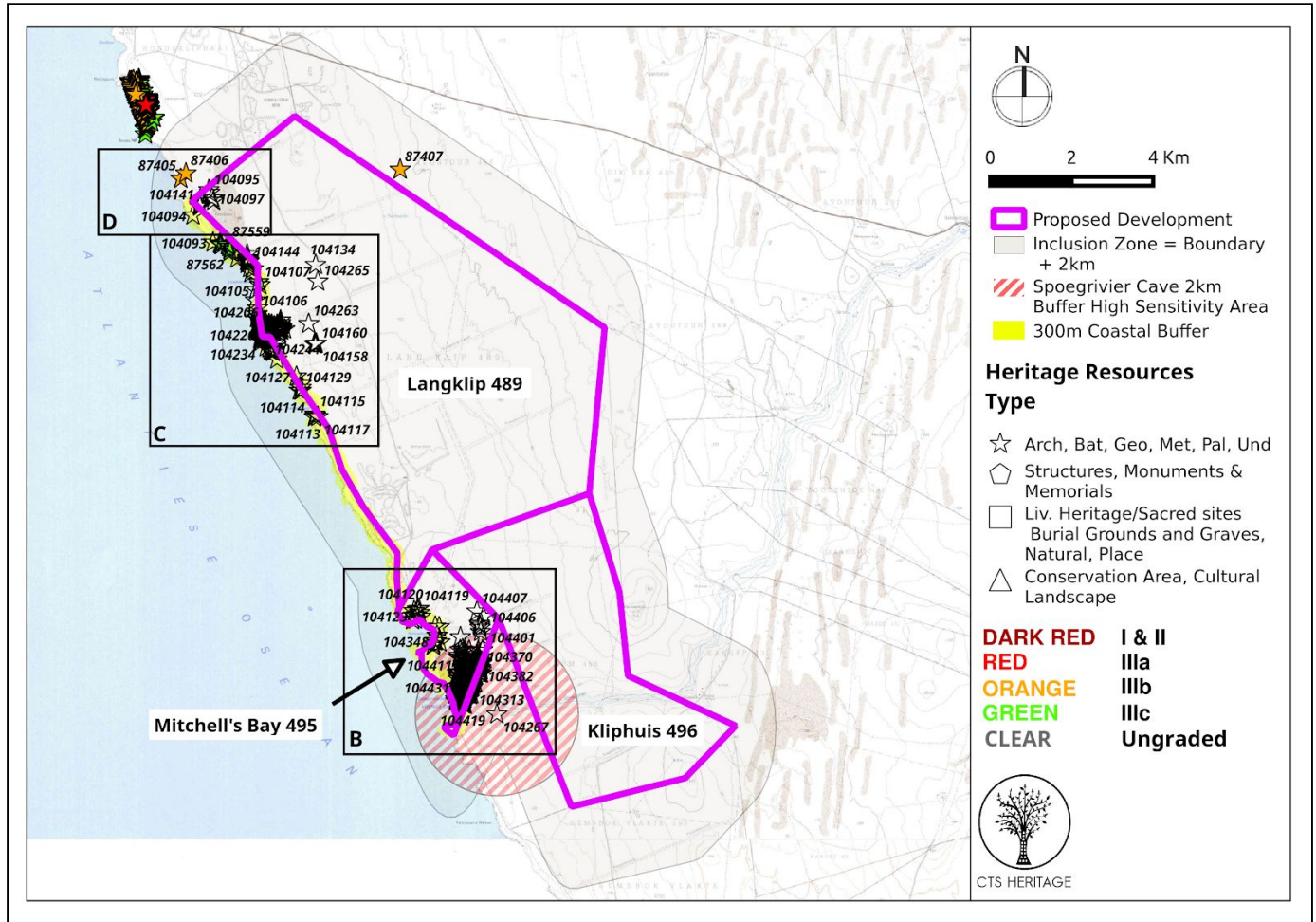
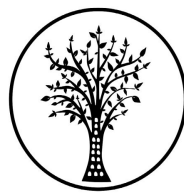


Figure 5a. Mapping of known heritage resources in the vicinity of the proposed prospecting area.



CTS HERITAGE

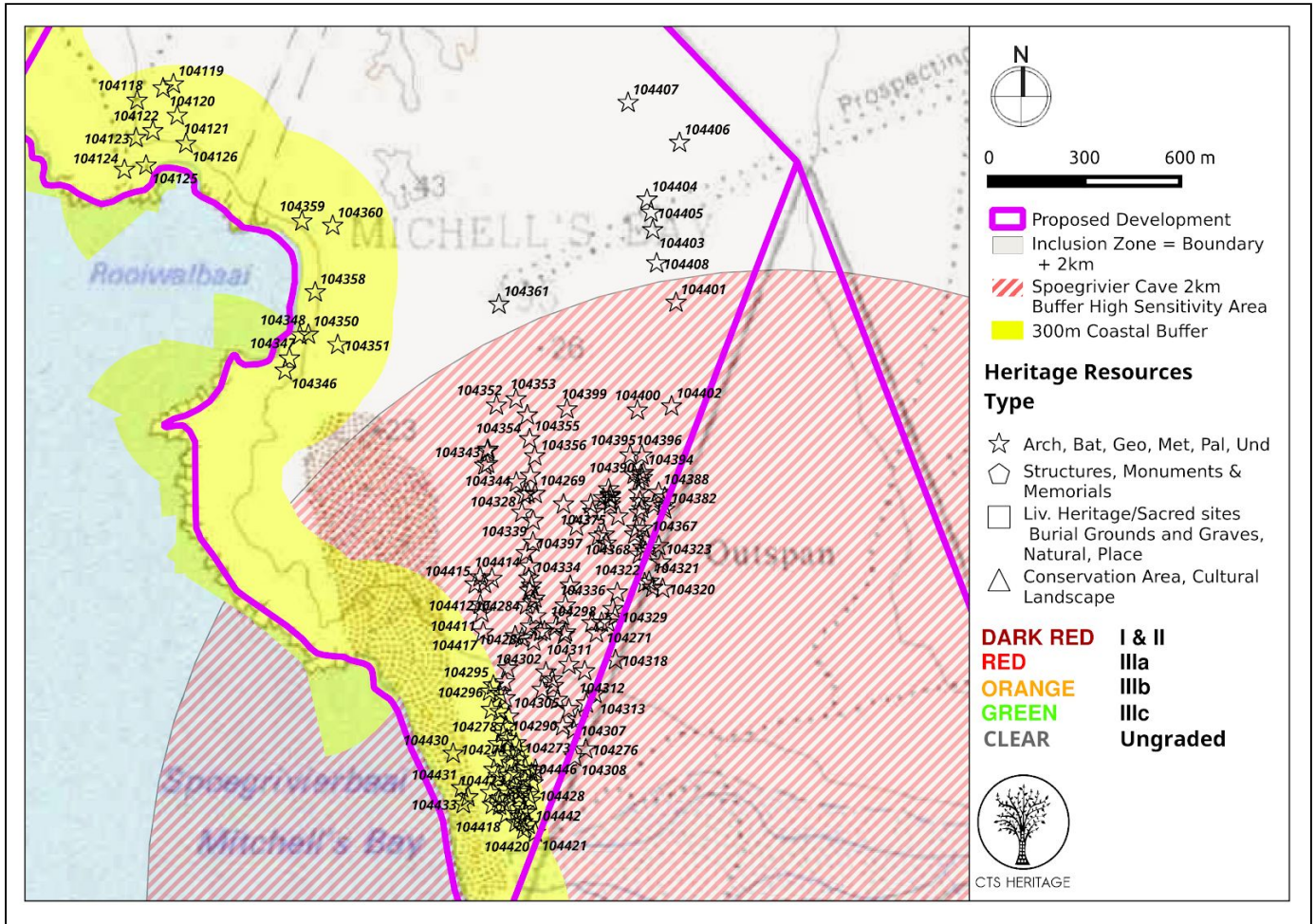
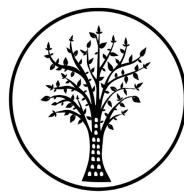


Figure 5bi. Inset map showing sites protected within the 300m coastal buffer marked in yellow and the clusters of sites protected within the 2km buffer sensitivity zone surrounding Spoegrivier Cave.



CTS HERITAGE

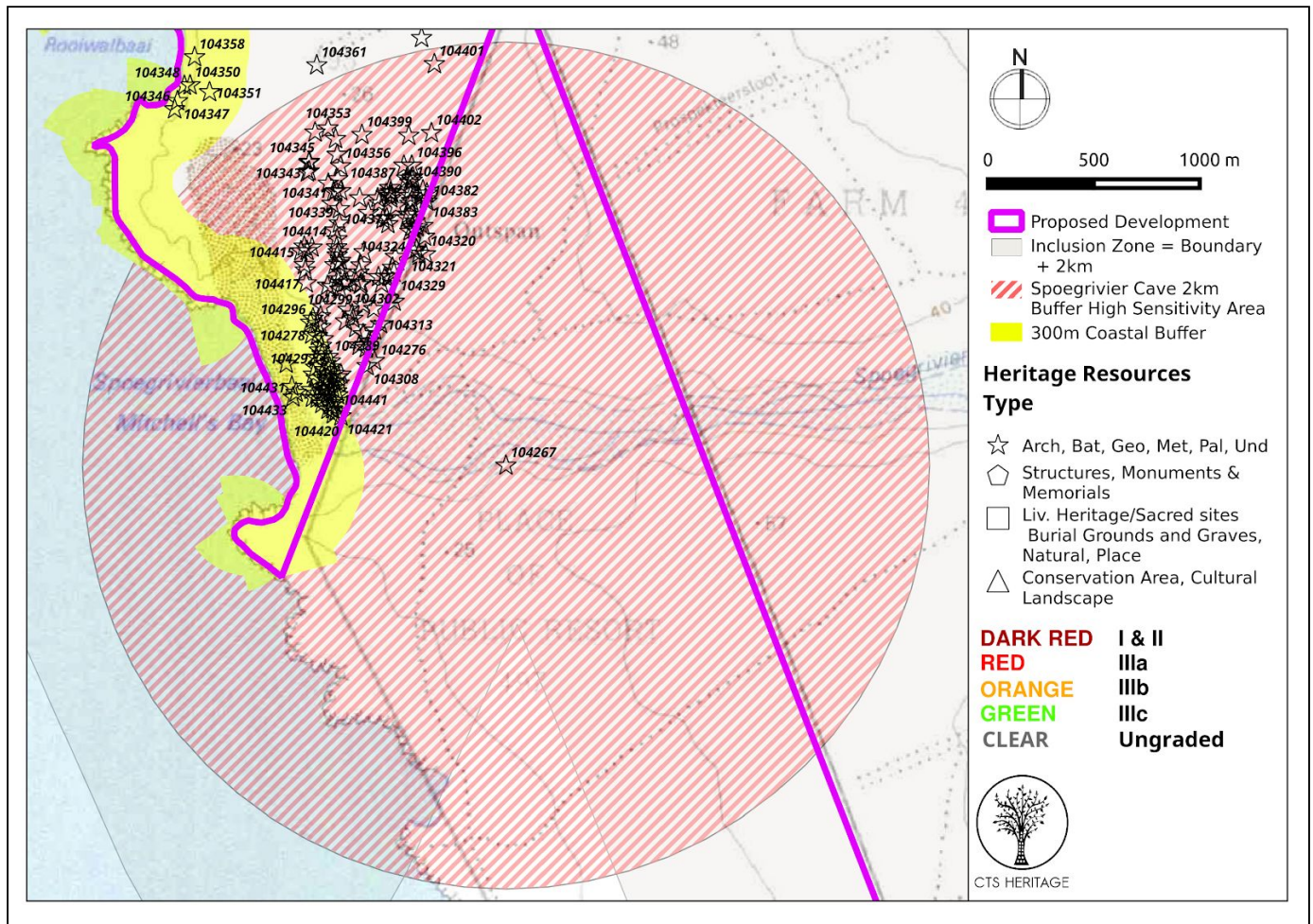
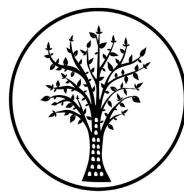


Figure 5bii. Inset map



CTS HERITAGE

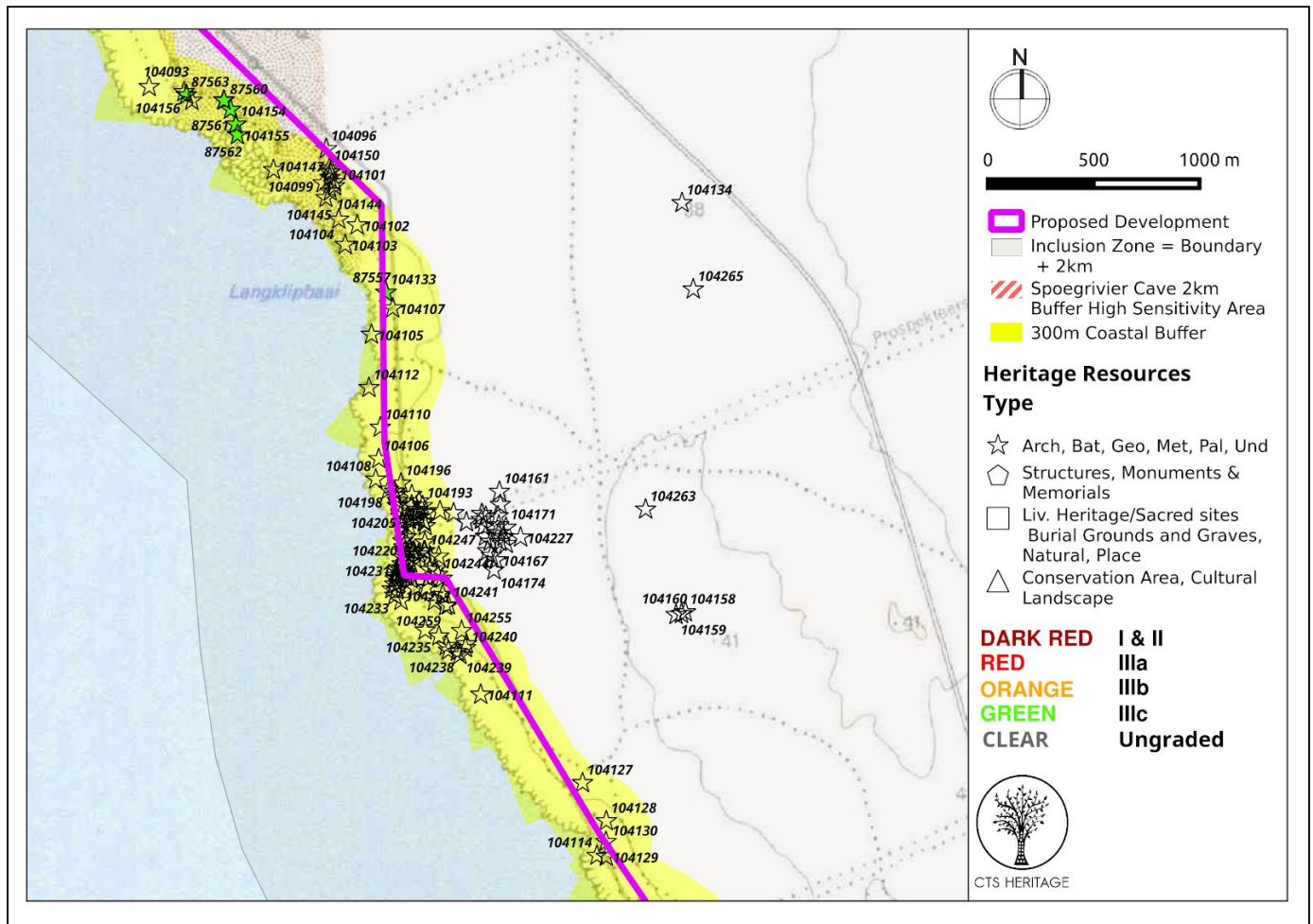
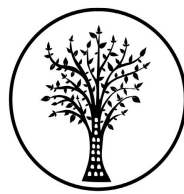


Figure 5ci. Inset map



CTS HERITAGE

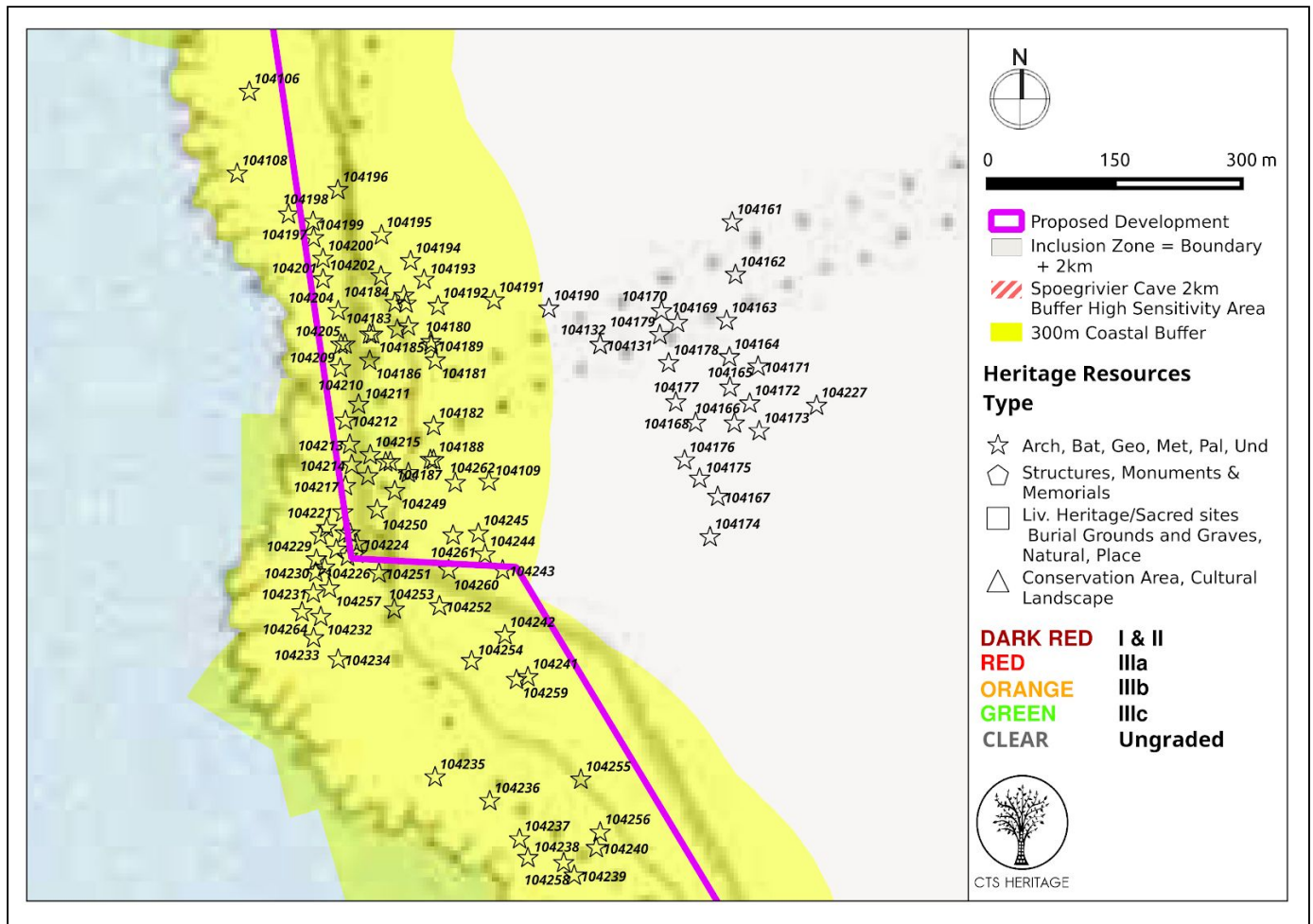
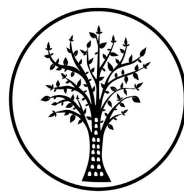


Figure 5cii. Inset map



CTS HERITAGE

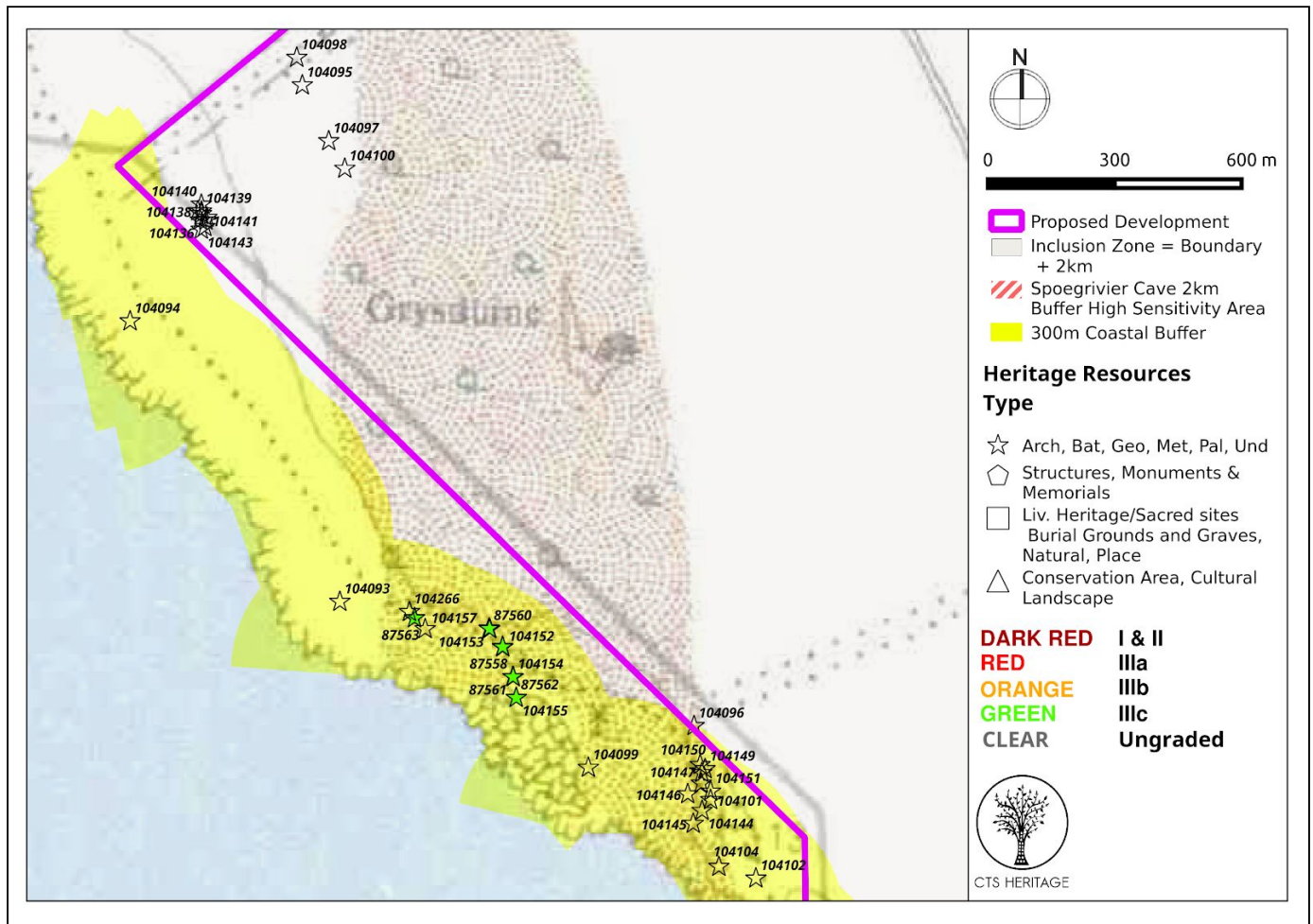
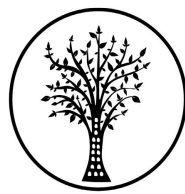


Figure 5di. Inset map



CTS HERITAGE

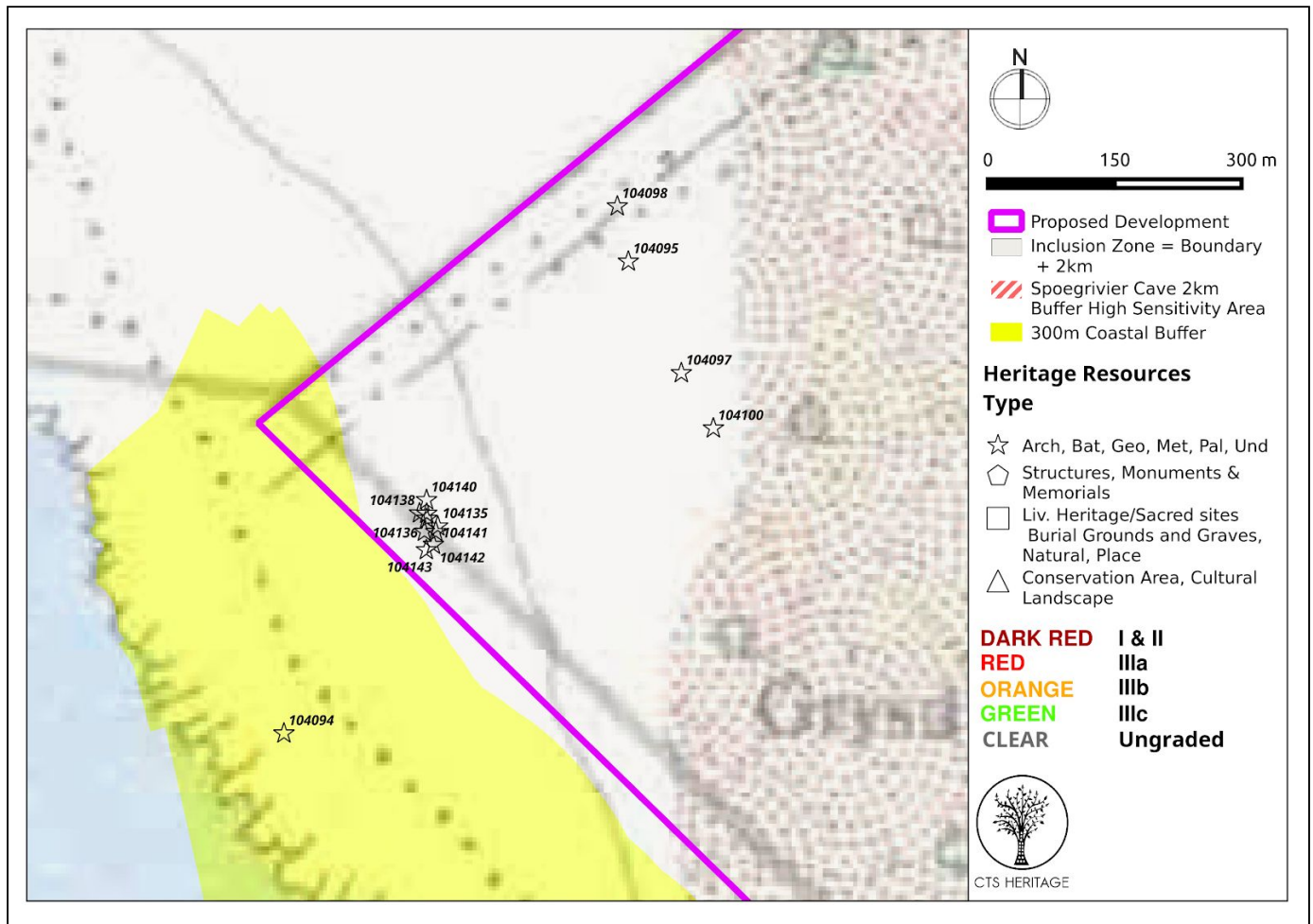


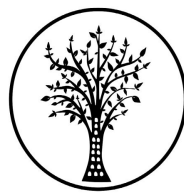
Figure 5dii. Inset map

5. ASSESSMENT OF THE IMPACT OF THE DEVELOPMENT

5.1 Assessment of impact to Heritage Resources

The Applicant proposes to prospect for heavy minerals by means of non-invasive methods such as desktop analyses, remote sensing, surface mapping and surveying of the deposit, and by means of invasive methods such as truck-mounted RC drills and hand-held auger drilling. The proposed non-invasive prospecting methods will cover the entire prospecting lease area, while invasive prospecting (drilling) will be concentrated in those areas recognised as having potential for the concentration of heavy minerals. Where possible, existing mine roads and tracks will be utilised for access to the various prospecting sites and environmentally sensitive areas will be avoided as far as is practically possible. All prospecting will be conducted in terms of the directives as contained in the Environmental Management Programme (EMP), which will be submitted to the DMR as part of the Prospecting Right Application process.

It is important to note, in terms of the proposed prospecting, that the heavy metals occur in the same deposits as the diamonds and, therefore, one of the best indicators of the presence of these minerals is previous evidence of



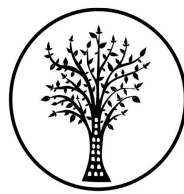
CTS HERITAGE

diamond mining. This means that the prospecting activities will predominantly take place in those areas that have been previously mined for diamonds. It is highly unlikely in situ archaeological sites will be located within these mined areas and would therefore have low heritage significance.

Buffers have been implemented within 300m of the coastline and within a 2km radius of the highly sensitive site of Spoegrivier Cave to protect the wealth of archaeological material located in both those areas. No RC drilling is to take place within those zones, and coring is to be restricted to micro siting and hand auguring only. Only 52 holes will be drilled in this area. Furthermore a 1.5km no prospecting buffer zone around Spoegrivier Cave has been set. The 2 km buffer around the site will respect SANPARKS future eco-tourism opportunities in this area and will create enough of an area for a visual buffer and any form of future intrusion in this highly sensitive area. Complementarily, a 600m ecological buffer and no-go area for the Spoegrivier riparian zone falls within this 2km heritage buffer zone.

Table 1: Impacts and mitigation per phase and activity

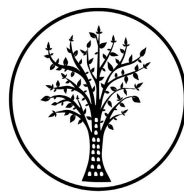
Phase	Activity	Affected Resources	Impact	Mitigation
1a	Desktop activities: data acquisition and analysis.	None	N/A	N/A
1b	Surface mapping by the project geologist using GPS controlled traverses, and aerial photo mapping.	None	N/A	N/A
1c	Surveying the mapping the prospecting area. Marking positions in the field with labelled pegs. 12m hand-held auger drilling will take place at these positions.	Archaeological sites, shell middens and artefact scatters, burial grounds, palaeontology	Disturbance of sites from vehicle passage and drill holes	<ul style="list-style-type: none"> • Restrict coring to previously disturbed areas; • Implementation of archaeological and palaeontological awareness programme; • Implementation of Fossil Finds Procedure.
	Access routes to the drill sites will also be located, using existing roads wherever possible.	Archaeological sites, shell middens and artefact scatters, burial grounds	Disturbance of sites from vehicle passage	<ul style="list-style-type: none"> • Implementation of archaeological and palaeontological awareness programme; • Implementation of Fossil Finds Procedure.
1d	Review of the proposed drilling positions.	None	N/A	N/A
2a	175 drill holes to 40m with	Archaeological sites,	Disturbance of	<ul style="list-style-type: none"> • No RC drilling within



CTS HERITAGE

	RC mounted drill or hand-held auger	shell middens and artefact scatters, burial grounds, palaeontology	sites from vehicle passage and drill holes	300m of the high water mark; <ul style="list-style-type: none"> • Restrict coring, wherever feasible, to previously disturbed areas; • Implementation of archaeological and palaeontological awareness programme • Implementation of Fossil Finds Procedure
2b	Infill drilling, number of holes to be determined in Phase 2a	Archaeological sites, shell middens and artefact scatters, burial grounds, palaeontology	Disturbance of sites from vehicle passage and drill holes	<ul style="list-style-type: none"> • Restrict coring, wherever feasible, to previously disturbed areas; • Implementation of archaeological and palaeontological awareness programme • Implementation of Fossil Finds Procedure
3	Drill cores to be removed from site by vehicle for analysis	Archaeological sites, shell middens and artefact scatters, burial grounds	Disturbance of sites from vehicle passage	<ul style="list-style-type: none"> • Existing roads to be used
4	Assessment of results, submission of reports to DMR, and determination of way forward	None	N/A	N/A
5	Rehabilitation concurrent with prospecting phase, in line with EMP	Archaeological sites, shell middens and artefact scatters, burial grounds	Disturbance of sites from vehicle passage and rehabilitation activities	<ul style="list-style-type: none"> • Existing roads to be used; • Activities restricted to disturbed areas

The prospecting drilling involves small vertical volumes and the impact to palaeontological resources is anticipated to be low (Pether 2018). The fossil material likely to be encountered in drill samples from aeolianites is the ambient fossil content of land snails, tortoise bones and mole bones. Fossil marine shell is not well-preserved in these deposits, but shell may be encountered. Though likely fragmentary, it may be diagnostic of the formation penetrated (Ibid.).



CTS HERITAGE

The prospecting assessment, Phase 4, will result in one of three possible outcomes:

1. Submission of a Mining Right Application to DMR to begin full scale mining of the area;
2. Continuation of prospecting, either through additional core sampling or bulk sampling. This will necessitate an application to DMR for a Prospecting Right Renewal;
3. Discontinuation of the application, which will require full rehabilitation of all drill sites and disturbed areas and the lodging of a Closure Application with DMR.

This desktop HIA does not provide a sufficiently fine grained account of the heritage resources present in this area, nor sufficient mitigatory recommendations to suffice for full scale mining operations, bulk sampling or further RC drilling outside of the disturbed areas preferentially exploited in terms of this application. Should mining, bulk sampling or RC drilling in undisturbed areas be proposed, a full HIA will be required.

5.2 Sustainable Social and Economic Benefit

Over 80 years of diamond mining in this region resulted directly in the establishment of good infrastructure with a few large, well serviced towns, and several smaller towns, of which Hondeklipbaai is one. Most of the inhabitants in the wider area are directly dependent on the jobs provided by the mine or related service industries. Hondeklipbaai's importance in the mining economy was reduced by the relocation of the main ore exportation activities to Port Nolloth. Additionally, as diamonds are fast becoming depleted and, consequently, mining activities are being scaled down across the area, massive job losses and economic downturn are occurring in these towns. The economies of the towns in the area have started to focus on tourism, but this represents a slow transition, and cannot provide the same number of jobs.

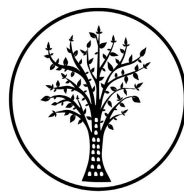
Heavy mineral mining offers the best opportunity for a revitalisation of this region, and will allow for further infrastructural development. Furthermore, heavy mineral mining offers an opportunity to rehabilitate much of the area left devastated by diamond mining, including the slimes and coarse tailings dumps that will be mined and removed from the landscape. The removal of these dumps, and systematic rehabilitation of the coastal zone, will contribute further to the promotion of tourism in the area, tying in with efforts in that regard.

5.3 Proposed development alternatives

No development alternatives have as yet been put forward.

6. RESULTS OF PUBLIC CONSULTATIONS

The Draft Bar and specialist reports, including this HIA will be available for 30 days from 16 February - 19 March 2018. A public meeting is being held in the Hondeklipbaai Community Hall on 2 March at 11h00, 2018 along with a newspaper advertisement in "Die Plattelander" to be placed on 16 February 2018. Notices announcing the proposed



CTS HERITAGE

prospecting will be erected in Hondeklipbaai and Koingnaas and registered letters sent out to the neighbours and various organs of state.

7. CONCLUSION AND RECOMMENDATIONS

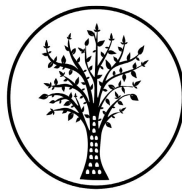
From careful assessment of the known sites in the area, and evaluation of these in terms of the proposed prospecting, it is clear that minimal impacts will be made to sensitive, significant heritage resources with the implementation of the mitigatory measures proposed. This was made possible, in no small part, by the excellent archive of sites data accumulated on the National Inventory system, SAHRIS, which has built up a library of impact assessments and surveys in this area. These are protected, where they occur, by falling outside of areas preferentially selected for prospecting. Where heritage resources are abundant, namely within 300m of the high water mark and within 2km of Spoegrivier Cave, they will be protected through responsible adaptation of the sampling strategy, namely the use of hand augers for core drilling and a 1.5km no prospecting area around Spoegrivier Cave.

In terms of palaeontological resources, the area is highly sensitive. However, this project, with its limited impacts, offers a chance for palaeontologists to study geolocated, site specific palaeontological resources that will expand their understanding of the occurrence of fossils in the specific geological deposits. This knowledge will allow for appropriate and informed responses from palaeontologists to the destructive phase of full scale mining, should that go ahead. This sampling by coring offers greater research potential than gathering *ex situ* fossil finds in the open landscape.

Furthermore, as this proposal holds the potential to stimulate economic renewal, revive infrastructure and rehabilitate the landscape in an economically depressed area, the socio-economic factors cannot be ignored.

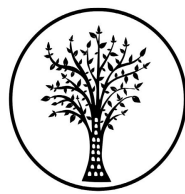
As such, the following recommendations are made:

1. There is no heritage objection to the proposed prospecting application;
2. A Fossil Finds Protocol must be implemented during the construction phase (see Appendix 1);
3. A red-flag area of 300m from the high water mark and 2km around Spoegrivier Cave is imposed where extra care is taken in terms of avoiding impacts to significant archaeological resources. This includes:
 - a. restricting prospecting in this area to hand augering (only 52 holes in this area) and
 - b. a no prospecting area 1.5km around Spoegrivier Cave and
 - c. the inclusion of an archaeological and palaeontological awareness programme, to be implemented prior to prospecting taking place on the site;



CTS HERITAGE

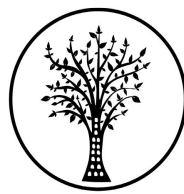
4. A detailed HIA is required before any bulk sampling or mining can take place during subsequent phases of the project;
5. Should full mining be approved for subsequent phases, a management plan will be required for the ongoing management of the significant archaeology in this area;
6. If *in situ* archaeological resources or human burials are found, work must cease and these findings must be reported to the Northern Cape PHRA and SAHRA, and a suitably qualified archaeologist must be contacted.



CTS HERITAGE

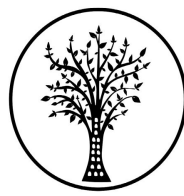
8. REFERENCES

Impact Assessment References				
Nid	Report Type	Author/s	Date	Title
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
375113	AIA	Munyadziwa Magoma	16/05/2016	Construction and Operation Environmental Management Programme for the Proposed Eskom Juno Gromis 400kv Transmission Line in the Northern and Western Cape Provinces
375149	AIA	Munyadziwa Magoma	15/08/2016	Phase I Archaeological and Cultural Heritage Impact Assessment Specialist Report for the Proposed 400kv Power Line from the Existing Eskom Juno Substation to the Existing Eskom Gromis Substation in the Western and Northern Cape Provinces Respectively.
4480	AIA	Timothy Hart, Dave Halkett	01/03/2001	An Inspection and Assessment of Specific Archaeological Sites on De Beers Owned Properties: Namaqualand
19977	HIA	Jayson Orton	09/09/2011	Heritage Impact Assessment for the Proposed Koingnaas Wind Energy Facility, Namakwa Magisterial District, Northern Cape
128843	HIA	Jayson Orton	19/07/2013	Heritage Impact Assessment For A Proposed Abalone Hatchery At Hondeklip Bay, Namakwaland Magisterial District, Northern Cape
120659	HIA	Jayson Orton	15/08/2012	.Heritage Impact Assessment For A Proposed Abalone Hatchery At Hondeklipbaai, Namakwaland Magisterial District, Western Cape
120662	HIA	Ronald Viney	31/07/2012	Hondeklip Bay Abalone Project: Report No. 1; Heritage Impact Assessment Progress Report And Preliminary Findings
4489	AIA	Jayson Orton	05/09/2007	Archaeological Impact Assessment of Erven 13, 14 & 392, Hondeklipbaai, Namakwa Magisterial District, Northern Cape Province
121262	HIA	Anton van Vollenhoven	01/03/2013	Report on a Desktop Study with regards to the Cultural Heritage Relating to a Prospecting Right Application for Avontuur, Close to Garies in the Namaqualand District, Northern Cape Province
121263	HIA	Anton van Vollenhoven	01/03/2013	Report on a Desktop Study with regards to the Cultural Heritage Relating to a Prospecting Right Application for Soutfontein, Close to Garies in the Namaqualand District, Northern Cape Province
19978	PIA	John Pether	22/09/2011	Palaeontological Impact Assessment (Desktop Study) Proposed Wind Energy Facility: Koingnaas Wind Energy Facility (Proposed by Just Palm Tree Power)
128847	PIA	Graham Avery	01/08/2013	Palaeontological Assessment Upgrade of Abalone Hatchery (3017AD Hondeklipbaai)



CTS HERITAGE

Other References			
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.
PhD Thesis	Genevieve Dewar	2008	The archaeology of the coastal desert of Namaqualand, South Africa: a regional synthesis. Oxford: British Archaeological Reports International Series 1761.
Article	Lita Webley	1992	Early evidence for sheep from Spoeg River Cave, Namaqualand. <i>Southern African Field Archaeology</i> 1: 3-13
Article	Lita Webley	2002	The re-excavation of Spoegrivier Cave on the West Coast of South Africa. <i>Annals of the Eastern Cape Museums</i> 2: 19–49.
Article	Judith Sealy and Royden Yates	1994	The chronology of the introduction of pastoralism to the Cape, South Africa. <i>Antiquity</i> 68: 58-67
Article	John Vogel, Ina Plug and Lita Webley	1997	New evidence for the introduction of sheep into South Africa: the evidence from Spoegrivier Cave in Namaqualand. <i>South African Journal of Science</i> 93: 246–248.

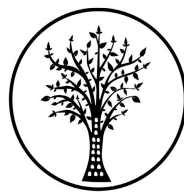


CTS HERITAGE

APPENDICES

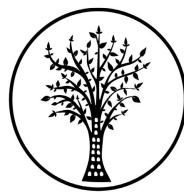
APPENDIX 1: Heritage Resources located within the prospecting area (Figures 3a-d)

SID	Site Number	Site Name	Site Type	Grading
87406	TRAN027	Transhex 027	Artefacts	Grade IIIb
87407	TRAN028	Transhex 028	Artefacts	Grade IIIb
87405	TRAN026	Transhex 026	Shell Midden	Grade IIIb
875570	NAMA027	Namaqualand 027	Artefacts	Grade IIIc
87558	NAMA028	Namaqualand 028	Artefacts	Grade IIIc
87559	NAMA029	Namaqualand 029	Artefacts	Grade IIIc
87560	NAMA030	Namaqualand 030	Artefacts	Grade IIIc
87561	NAMA031	Namaqualand 031	Artefacts	Grade IIIc
87562	NAMA032	Namaqualand 032	Artefacts	Grade IIIc
87563	NAMA033	Namaqualand 033	Artefacts	Grade IIIc
104093	LK1991/001	Langklip	Archaeological	NA
104094	LK1991/002	Langklip	Archaeological	NA
104095	LK1991/005	Langklip	Archaeological	NA
104096	LK1991/006	Langklip	Archaeological	NA
104097	LK1991/007	Langklip	Archaeological	NA
104098	LK1991/008	Langklip	Archaeological	NA
104099	LK1991/008z	Langklip	Archaeological	NA
104100	LK1991/009	Langklip	Archaeological	NA
104101	LK1991/010	Langklip	Archaeological	NA
104102	LK1991/011	Langklip	Archaeological	NA
104103	LK1991/012	Langklip	Archaeological	NA
104104	LK1991/013	Langklip	Archaeological	NA
104105	LK1991/014	Langklip	Archaeological	NA
104106	LK1991/015	Langklip	Archaeological	NA
104107	LK1991/016	Langklip	Archaeological	NA
104108	LK1991/017	Langklip	Archaeological	NA
104109	LK1991/018	Langklip	Archaeological	NA



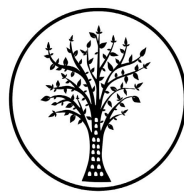
CTS HERITAGE

104110	LK1991/019	Langklip	Archaeological	NA
104111	LK1991/020	Langklip	Archaeological	NA
104112	LK1991/021	Langklip	Archaeological	NA
104113	LK1991/022	Langklip	Archaeological	NA
104114	LK1991/023	Langklip	Archaeological	NA
104115	LK1991/024	Langklip	Archaeological	NA
104116	LK1991/025	Langklip	Archaeological	NA
104117	LK1991/026	Langklip	Archaeological	NA
104118	LK2001/001A	Langklip	Archaeological	NA
104119	LK2001/001B	Langklip	Archaeological	NA
104120	LK2001/001C	Langklip	Archaeological	NA
104121	LK2001/002	Langklip	Archaeological	NA
104122	LK2001/003	Langklip	Archaeological	NA
104123	LK2001/004	Langklip	Archaeological	NA
104124	LK2001/005	Langklip	Archaeological	NA
104125	LK2001/006	Langklip	Archaeological	NA
104126	LK2001/007	Langklip	Archaeological	NA
104127	LK2001/008	Langklip	Archaeological	NA
104128	LK2001/009	Langklip	Archaeological	NA
104129	LK2001/010A	Langklip	Archaeological	NA
104130	LK2001/010B	Langklip	Archaeological	NA
104131	LK2001/011	Langklip	Archaeological	NA
104132	LK2001/012	Langklip	Archaeological	NA
104133	LK2001/013	Langklip	Archaeological	NA
104134	LK2001/014	Langklip	Archaeological	NA
104135	LK2001/015A	Langklip	Archaeological	NA
104136	LK2001/015B	Langklip	Archaeological	NA
104137	LK2001/015C	Langklip	Archaeological	NA
104138	LK2001/015D	Langklip	Archaeological	NA
104139	LK2001/015F	Langklip	Archaeological	NA



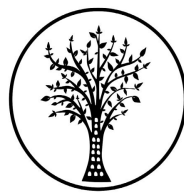
CTS HERITAGE

104140	LK2001/015E	Langklip	Archaeological	NA
104141	LK2001/015G	Langklip	Archaeological	NA
104142	LK2001/015H	Langklip	Archaeological	NA
104143	LK2001/015I	Langklip	Archaeological	NA
104144	LK2004/001	Langklip	Archaeological	NA
104145	LK2004/002	Langklip	Archaeological	NA
104146	LK2004/003	Langklip	Archaeological	NA
104147	LK2004/004	Langklip	Archaeological	NA
104148	LK2004/005	Langklip	Archaeological	NA
104149	LK2004/006	Langklip	Archaeological	NA
104150	LK2004/007	Langklip	Archaeological	NA
104151	LK2004/008	Langklip	Archaeological	NA
104152	LK2004/010	Langklip	Archaeological	NA
104153	LK2004/011	Langklip	Archaeological	NA
104154	LK2004/012	Langklip	Archaeological	NA
104155	LK2004/013	Langklip	Archaeological	NA
104156	LK2004/014	Langklip	Archaeological	NA
104157	LK2004/015	Langklip	Archaeological	NA
104158	LK2005/001	Langklip	Archaeological	NA
104159	LK2005/002	Langklip	Archaeological	NA
104160	LK2005/003	Langklip	Archaeological	NA
104161	LK2005/004	Langklip	Archaeological	NA
104162	LK2005/005	Langklip	Archaeological	NA
104163	LK2005/006	Langklip	Archaeological	NA
104164	LK2005/007	Langklip	Archaeological	NA
104165	LK2005/008	Langklip	Archaeological	NA
104166	LK2005/009	Langklip	Archaeological	NA
104167	LK2005/010	Langklip	Archaeological	NA
104168	LK2005/011	Langklip	Archaeological	NA
104169	LK2005/012	Langklip	Archaeological	NA



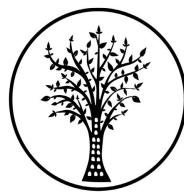
CTS HERITAGE

104170	LK2005/013	Langklip	Archaeological	NA
104171	LK2005/014	Langklip	Archaeological	NA
104172	LK2005/015	Langklip	Archaeological	NA
104173	LK2005/016	Langklip	Archaeological	NA
104174	LK2005/017	Langklip	Archaeological	NA
104175	LK2005/018	Langklip	Archaeological	NA
104176	LK2005/019	Langklip	Archaeological	NA
104177	LK2005/020	Langklip	Archaeological	NA
104178	LK2005/021	Langklip	Archaeological	NA
104179	LK2005/022	Langklip	Archaeological	NA
104180	LK2005/023	Langklip	Archaeological	NA
104181	LK2005/024	Langklip	Archaeological	NA
104182	LK2005/025	Langklip	Archaeological	NA
104183	LK2005/026	Langklip	Archaeological	NA
104184	LK2005/027	Langklip	Archaeological	NA
104185	LK2005/028	Langklip	Archaeological	NA
104186	LK2005/029	Langklip	Archaeological	NA
104187	LK2005/030	Langklip	Archaeological	NA
104188	LK2005/031	Langklip	Archaeological	NA
104189	LK2005/032	Langklip	Archaeological	NA
104190	LK2005/033	Langklip	Archaeological	NA
104191	LK2005/034	Langklip	Archaeological	NA
104192	LK2005/035	Langklip	Archaeological	NA
104193	LK2005/036	Langklip	Archaeological	NA
104194	LK2005/038	Langklip	Archaeological	NA
104195	LK2005/037	Langklip	Archaeological	NA
104196	LK2005/039	Langklip	Archaeological	NA
104197	LK2005/040	Langklip	Archaeological	NA
104198	LK2005/041	Langklip	Archaeological	NA
104199	LK2005/042	Langklip	Archaeological	NA



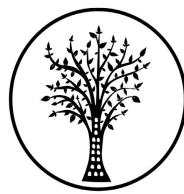
CTS HERITAGE

104200	LK2005/043	Langklip	Archaeological	NA
104201	LK2005/044	Langklip	Archaeological	NA
104202	LK2005/045	Langklip	Archaeological	NA
104203	LK2005/046	Langklip	Archaeological	NA
104204	LK2005/047	Langklip	Archaeological	NA
104205	LK2005/048	Langklip	Archaeological	NA
104206	LK2005/049	Langklip	Archaeological	NA
104207	LK2005/050	Langklip	Archaeological	NA
104208	LK2005/051	Langklip	Archaeological	NA
104209	LK2005/052	Langklip	Archaeological	NA
104210	LK2005/053	Langklip	Archaeological	NA
104211	LK2005/054	Langklip	Archaeological	NA
104212	LK2005/055	Langklip	Archaeological	NA
104213	LK2005/056	Langklip	Archaeological	NA
104214	LK2005/057	Langklip	Archaeological	NA
104215	LK2005/058	Langklip	Archaeological	NA
104216	LK2005/059	Langklip	Archaeological	NA
104217	LK2005/060	Langklip	Archaeological	NA
104218	LK2005/061	Langklip	Archaeological	NA
104219	LK2005/062	Langklip	Archaeological	NA
104220	LK2005/063	Langklip	Archaeological	NA
104221	LK2005/064	Langklip	Archaeological	NA
104222	LK2005/065	Langklip	Archaeological	NA
104223	LK2005/066	Langklip	Archaeological	NA
104224	LK2005/067	Langklip	Archaeological	NA
104225	LK2005/068	Langklip	Archaeological	NA
104226	LK2005/069	Langklip	Archaeological	NA
104227	LK2005/070	Langklip	Archaeological	NA
104228	LK2005/071	Langklip	Archaeological	NA
104229	LK2005/072	Langklip	Archaeological	NA



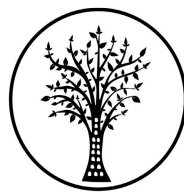
CTS HERITAGE

104230	LK2005/073	Langklip	Archaeological	NA
104231	LK2005/074	Langklip	Archaeological	NA
104232	LK2005/075	Langklip	Archaeological	NA
104233	LK2005/076	Langklip	Archaeological	NA
104234	LK2005/077	Langklip	Archaeological	NA
104235	LK2005/078	Langklip	Archaeological	NA
104236	LK2005/079	Langklip	Archaeological	NA
104237	LK2005/080	Langklip	Archaeological	NA
104238	LK2005/081	Langklip	Archaeological	NA
104239	LK2005/082	Langklip	Archaeological	NA
104240	LK2005/083	Langklip	Archaeological	NA
104241	LK2005/084	Langklip	Archaeological	NA
104242	LK2005/085	Langklip	Archaeological	NA
104243	LK2005/086	Langklip	Archaeological	NA
104244	LK2005/087	Langklip	Archaeological	NA
104245	LK2005/088	Langklip	Archaeological	NA
104246	LK2005/089	Langklip	Archaeological	NA
104247	LK2005/090	Langklip	Archaeological	NA
104248	LK2005/091	Langklip	Archaeological	NA
104249	LK2005/092	Langklip	Archaeological	NA
104250	LK2005/093	Langklip	Archaeological	NA
104251	LK2005/094	Langklip	Archaeological	NA
104252	LK2005/095	Langklip	Archaeological	NA
104253	LK2005/096	Langklip	Archaeological	NA
104254	LK2005/097	Langklip	Archaeological	NA
104255	LK2005/101	Langklip	Archaeological	NA
104256	LK2005/099	Langklip	Archaeological	NA
104257	LK2005/098	Langklip	Archaeological	NA
104258	LK2005/100	Langklip	Archaeological	NA
104259	LK2005/102	Langklip	Archaeological	NA



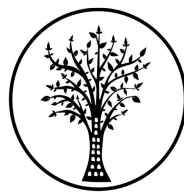
CTS HERITAGE

104260	LK2005/103	Langklip	Archaeological	NA
104261	LK2005/104	Langklip	Archaeological	NA
104262	LK2005/105	Langklip	Archaeological	NA
104263	LK2005/106	Langklip	Archaeological	NA
104264	LK2005/107	Langklip	Archaeological	NA
104265	LK2006/001	Langklip	Archaeological	NA
104266	LK2007/001	Langklip	Archaeological	NA
104267	Spoeg River Cave	Mitchell's Bay	Archaeological	NA
104268	D43	Mitchell's Bay	Archaeological	NA
104269	D44	Mitchell's Bay	Archaeological	NA
104270	D56	Mitchell's Bay	Archaeological	NA
104271	D57	Mitchell's Bay	Archaeological	NA
104272	D58	Mitchell's Bay	Archaeological	NA
104273	MB2005/001	Mitchell's Bay	Archaeological	NA
104274	MB2005/002	Mitchell's Bay	Archaeological	NA
104275	MB2005/003	Mitchell's Bay	Archaeological	NA
104276	MB2005/004	Mitchell's Bay	Archaeological	NA
104277	MB2005/005	Mitchell's Bay	Archaeological	NA
104278	MB2005/006	Mitchell's Bay	Archaeological	NA
104279	MB2005/007	Mitchell's Bay	Archaeological	NA
104280	MB2005/008	Mitchell's Bay	Archaeological	NA
104281	MB2005/009	Mitchell's Bay	Archaeological	NA
104282	MB2005/010	Mitchell's Bay	Archaeological	NA
104283	MB2005/011	Mitchell's Bay	Archaeological	NA
104284	MB2005/012	Mitchell's Bay	Archaeological	NA
104285	MB2005/013	Mitchell's Bay	Archaeological	NA
104286	MB2005/014	Mitchell's Bay	Archaeological	NA
104287	MB2005/015	Mitchell's Bay	Archaeological	NA
104288	MB2005/016	Mitchell's Bay	Archaeological	NA
104289	MB2005/017	Mitchell's Bay	Archaeological	NA



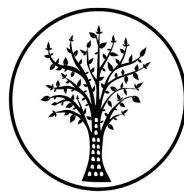
CTS HERITAGE

104290	MB2005/018	Mitchell's Bay	Archaeological	NA
104291	MB2005/019	Mitchell's Bay	Archaeological	NA
104292	MB2005/020	Mitchell's Bay	Archaeological	NA
104293	MB2005/021	Mitchell's Bay	Archaeological	NA
104294	MB2005/022	Mitchell's Bay	Archaeological	NA
104295	MB2005/023	Mitchell's Bay	Archaeological	NA
104296	MB2005/024	Mitchell's Bay	Archaeological	NA
104297	MB2005/025	Mitchell's Bay	Archaeological	NA
104298	MB2005/026	Mitchell's Bay	Archaeological	NA
104299	MB2005/027	Mitchell's Bay	Archaeological	NA
104300	MB2005/028	Mitchell's Bay	Archaeological	NA
104301	MB2005/029	Mitchell's Bay	Archaeological	NA
104302	MB2005/030	Mitchell's Bay	Archaeological	NA
104303	MB2005/031	Mitchell's Bay	Archaeological	NA
104304	MB2005/032	Mitchell's Bay	Archaeological	NA
104305	MB2005/033	Mitchell's Bay	Archaeological	NA
104306	MB2005/034	Mitchell's Bay	Archaeological	NA
104307	MB2005/035	Mitchell's Bay	Archaeological	NA
104308	MB2005/036	Mitchell's Bay	Archaeological	NA
104309	MB2005/037	Mitchell's Bay	Archaeological	NA
104310	MB2005/038	Mitchell's Bay	Archaeological	NA
104311	MB2005/039	Mitchell's Bay	Archaeological	NA
104312	MB2005/040	Mitchell's Bay	Archaeological	NA
104313	MB2005/041	Mitchell's Bay	Archaeological	NA
104314	MB2005/042	Mitchell's Bay	Archaeological	NA
104315	MB2005/043	Mitchell's Bay	Archaeological	NA
104316	MB2005/044	Mitchell's Bay	Archaeological	NA
104317	MB2005/045	Mitchell's Bay	Archaeological	NA
104318	MB2005/046	Mitchell's Bay	Archaeological	NA
104319	MB2005/047	Mitchell's Bay	Archaeological	NA



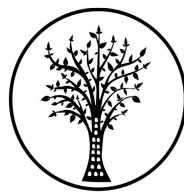
CTS HERITAGE

104320	MB2005/048	Mitchell's Bay	Archaeological	NA
104321	MB2005/049	Mitchell's Bay	Archaeological	NA
104322	MB2005/050	Mitchell's Bay	Archaeological	NA
104323	MB2005/051	Mitchell's Bay	Archaeological	NA
104324	MB2005/052	Mitchell's Bay	Archaeological	NA
104325	MB2005/053	Mitchell's Bay	Archaeological	NA
104326	MB2005/054	Mitchell's Bay	Archaeological	NA
104327	MB2005/055	Mitchell's Bay	Archaeological	NA
104328	MB2005/056	Mitchell's Bay	Archaeological	NA
104329	MB2005/057	Mitchell's Bay	Archaeological	NA
104330	MB2005/058	Mitchell's Bay	Archaeological	NA
104331	MB2005/059	Mitchell's Bay	Archaeological	NA
104332	MB2005/060	Mitchell's Bay	Archaeological	NA
104333	MB2005/061	Mitchell's Bay	Archaeological	NA
104334	MB2005/062	Mitchell's Bay	Archaeological	NA
104335	MB2005/063	Mitchell's Bay	Archaeological	NA
104336	MB2005/064	Mitchell's Bay	Archaeological	NA
104337	MB2005/065	Mitchell's Bay	Archaeological	NA
104338	MB2005/066	Mitchell's Bay	Archaeological	NA
104339	MB2005/067	Mitchell's Bay	Archaeological	NA
104340	MB2005/068	Mitchell's Bay	Archaeological	NA
104341	MB2005/069	Mitchell's Bay	Archaeological	NA
104342	MB2005/070	Mitchell's Bay	Archaeological	NA
104343	MB2005/071	Mitchell's Bay	Archaeological	NA
104344	MB2005/072	Mitchell's Bay	Archaeological	NA
104345	MB2005/073	Mitchell's Bay	Archaeological	NA
104346	MB2005/074	Mitchell's Bay	Archaeological	NA
104347	MB2005/075	Mitchell's Bay	Archaeological	NA
104348	MB2005/076	Mitchell's Bay	Archaeological	NA
104349	MB2005/077	Mitchell's Bay	Archaeological	NA



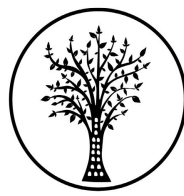
CTS HERITAGE

104350	MB2005/078	Mitchell's Bay	Archaeological	NA
104351	MB2005/079	Mitchell's Bay	Archaeological	NA
104352	MB2005/080	Mitchell's Bay	Archaeological	NA
104353	MB2005/081	Mitchell's Bay	Archaeological	NA
104354	MB2005/082	Mitchell's Bay	Archaeological	NA
104355	MB2005/083	Mitchell's Bay	Archaeological	NA
104356	MB2005/084	Mitchell's Bay	Archaeological	NA
104357	MB2005/085	Mitchell's Bay	Archaeological	NA
104358	MB2005/086	Mitchell's Bay	Archaeological	NA
104359	MB2005/087	Mitchell's Bay	Archaeological	NA
104360	MB2005/088	Mitchell's Bay	Archaeological	NA
104361	MB2005/089	Mitchell's Bay	Archaeological	NA
104362	MB2005/090	Mitchell's Bay	Archaeological	NA
104363	MB2005/091	Mitchell's Bay	Archaeological	NA
104364	MB2005/092	Mitchell's Bay	Archaeological	NA
104365	MB2005/093	Mitchell's Bay	Archaeological	NA
104366	MB2005/094	Mitchell's Bay	Archaeological	NA
104367	MB2005/095	Mitchell's Bay	Archaeological	NA
104368	MB2005/096	Mitchell's Bay	Archaeological	NA
104369	MB2005/097	Mitchell's Bay	Archaeological	NA
104370	MB2005/098	Mitchell's Bay	Archaeological	NA
104371	MB2005/099	Mitchell's Bay	Archaeological	NA
104372	MB2005/100	Mitchell's Bay	Archaeological	NA
104373	MB2005/101	Mitchell's Bay	Archaeological	NA
104374	MB2005/102	Mitchell's Bay	Archaeological	NA
104375	MB2005/103	Mitchell's Bay	Archaeological	NA
104376	MB2005/104	Mitchell's Bay	Archaeological	NA
104377	MB2005/105	Mitchell's Bay	Archaeological	NA
104378	MB2005/106	Mitchell's Bay	Archaeological	NA
104379	MB2005/107	Mitchell's Bay	Archaeological	NA



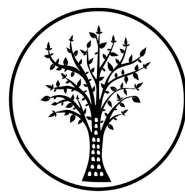
CTS HERITAGE

104380	MB2005/108	Mitchell's Bay	Archaeological	NA
104381	MB2005/109	Mitchell's Bay	Archaeological	NA
104382	MB2005/110	Mitchell's Bay	Archaeological	NA
104383	MB2005/111	Mitchell's Bay	Archaeological	NA
104384	MB2005/112	Mitchell's Bay	Archaeological	NA
104385	MB2005/113	Mitchell's Bay	Archaeological	NA
104386	MB2005/114	Mitchell's Bay	Archaeological	NA
104387	MB2005/115	Mitchell's Bay	Archaeological	NA
104388	MB2005/116	Mitchell's Bay	Archaeological	NA
104389	MB2005/117	Mitchell's Bay	Archaeological	NA
104390	MB2005/118	Mitchell's Bay	Archaeological	NA
104391	MB2005/119	Mitchell's Bay	Archaeological	NA
104392	MB2005/120	Mitchell's Bay	Archaeological	NA
104393	MB2005/120-2	Mitchell's Bay	Archaeological	NA
104394	MB2005/120-3	Mitchell's Bay	Archaeological	NA
104395	MB2005/121	Mitchell's Bay	Archaeological	NA
104396	MB2005/122	Mitchell's Bay	Archaeological	NA
104397	MB2005/123	Mitchell's Bay	Archaeological	NA
104398	MB2005/124	Mitchell's Bay	Archaeological	NA
104399	MB2005/125	Mitchell's Bay	Archaeological	NA
104400	MB2005/126	Mitchell's Bay	Archaeological	NA
104401	MB2005/127	Mitchell's Bay	Archaeological	NA
104402	MB2005/128	Mitchell's Bay	Archaeological	NA
104403	MB2005/129	Mitchell's Bay	Archaeological	NA
104404	MB2005/130	Mitchell's Bay	Archaeological	NA
104405	MB2005/131	Mitchell's Bay	Archaeological	NA
104406	MB2005/132	Mitchell's Bay	Archaeological	NA
104407	MB2005/133	Mitchell's Bay	Archaeological	NA
104408	MB2005/134	Mitchell's Bay	Archaeological	NA
104409	MB2005/135	Mitchell's Bay	Archaeological	NA



CTS HERITAGE

104410	MB2005/136	Mitchell's Bay	Archaeological	NA
104411	MB12006/001	Mitchell's Bay	Archaeological	NA
104412	MB2006/002	Mitchell's Bay	Archaeological	NA
104413	MB2006/003	Mitchell's Bay	Archaeological	NA
104414	MB2006/004	Mitchell's Bay	Archaeological	NA
104415	MB2006/005	Mitchell's Bay	Archaeological	NA
104416	MB2006/006	Mitchell's Bay	Archaeological	NA
104417	MB2006/007	Mitchell's Bay	Archaeological	NA
104418	MB2008/001	Mitchell's Bay	Archaeological	NA
104419	MB2008/002	Mitchell's Bay	Archaeological	NA
104420	MB2008/002A	Mitchell's Bay	Archaeological	NA
104421	MB2008/003	Mitchell's Bay	Archaeological	NA
104422	MB2008/004	Mitchell's Bay	Archaeological	NA
104423	MB2008/005	Mitchell's Bay	Archaeological	NA
104424	MB2008/006	Mitchell's Bay	Archaeological	NA
104425	MB2008/007	Mitchell's Bay	Archaeological	NA
104426	MB2008/008	Mitchell's Bay	Archaeological	NA
104427	MB2008/009	Mitchell's Bay	Archaeological	NA
104428	MB2008/010	Mitchell's Bay	Archaeological	NA
104429	MB2008/011	Mitchell's Bay	Archaeological	NA
104430	MB2008/012	Mitchell's Bay	Archaeological	NA
104431	MB2008/013	Mitchell's Bay	Archaeological	NA
104432	MB2008/014	Mitchell's Bay	Archaeological	NA
104433	MB2008/015	Mitchell's Bay	Archaeological	NA
104434	MB2008/016	Mitchell's Bay	Archaeological	NA
104435	MB2008/017	Mitchell's Bay	Archaeological	NA
104436	MB2008/018	Mitchell's Bay	Archaeological	NA
104437	MB2008/019	Mitchell's Bay	Archaeological	NA
104438	MB2008/020	Mitchell's Bay	Archaeological	NA
104439	MB2008/021	Mitchell's Bay	Archaeological	NA

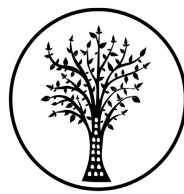


CTS HERITAGE

104440	MB2008/022	Mitchell's Bay	Archaeological	NA
104441	MB2008/023	Mitchell's Bay	Archaeological	NA
104442	MB2008/024	Mitchell's Bay	Archaeological	NA
104443	MB2008/025	Mitchell's Bay	Archaeological	NA
104444	MB2008/026	Mitchell's Bay	Archaeological	NA
104445	MB2008/027	Mitchell's Bay	Archaeological	NA
104446	MB2008/028	Mitchell's Bay	Archaeological	NA
104447	MB2008/029	Mitchell's Bay	Archaeological	NA
104448	MB2008/030	Mitchell's Bay	Archaeological	NA
104449	MB2008/031	Mitchell's Bay	Archaeological	NA
104450	MB2008/032	Mitchell's Bay	Archaeological	NA
104451	MB2008/033	Mitchell's Bay	Archaeological	NA
104452	MB2008/034	Mitchell's Bay	Archaeological	NA

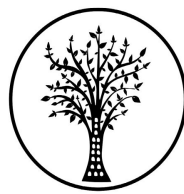
Heritage Resources located within the Spoegrivier area (Figures 3bi-3bii)

SID	Site Number	Site Name	Site Type	Grading
104267	Spoeg River Cave	Mitchell's Bay	Archaeological	NA
104268	D43	Mitchell's Bay	Archaeological	NA
104269	D44	Mitchell's Bay	Archaeological	NA
104270	D56	Mitchell's Bay	Archaeological	NA
104271	D57	Mitchell's Bay	Archaeological	NA
104272	D58	Mitchell's Bay	Archaeological	NA
104273	MB2005/001	Mitchell's Bay	Archaeological	NA
104274	MB2005/002	Mitchell's Bay	Archaeological	NA
104275	MB2005/003	Mitchell's Bay	Archaeological	NA
104276	MB2005/004	Mitchell's Bay	Archaeological	NA
104277	MB2005/005	Mitchell's Bay	Archaeological	NA
104278	MB2005/006	Mitchell's Bay	Archaeological	NA
104279	MB2005/007	Mitchell's Bay	Archaeological	NA
104280	MB2005/008	Mitchell's Bay	Archaeological	NA
104281	MB2005/009	Mitchell's Bay	Archaeological	NA
104282	MB2005/010	Mitchell's Bay	Archaeological	NA
104283	MB2005/011	Mitchell's Bay	Archaeological	NA



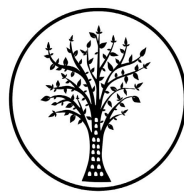
CTS HERITAGE

104284	MB2005/012	Mitchell's Bay	Archaeological	NA
104285	MB2005/013	Mitchell's Bay	Archaeological	NA
104286	MB2005/014	Mitchell's Bay	Archaeological	NA
104287	MB2005/015	Mitchell's Bay	Archaeological	NA
104288	MB2005/016	Mitchell's Bay	Archaeological	NA
104289	MB2005/017	Mitchell's Bay	Archaeological	NA
104290	MB2005/018	Mitchell's Bay	Archaeological	NA
104291	MB2005/019	Mitchell's Bay	Archaeological	NA
104292	MB2005/020	Mitchell's Bay	Archaeological	NA
104293	MB2005/021	Mitchell's Bay	Archaeological	NA
104294	MB2005/022	Mitchell's Bay	Archaeological	NA
104295	MB2005/023	Mitchell's Bay	Archaeological	NA
104296	MB2005/024	Mitchell's Bay	Archaeological	NA
104297	MB2005/025	Mitchell's Bay	Archaeological	NA
104298	MB2005/026	Mitchell's Bay	Archaeological	NA
104299	MB2005/027	Mitchell's Bay	Archaeological	NA
104300	MB2005/028	Mitchell's Bay	Archaeological	NA
104301	MB2005/029	Mitchell's Bay	Archaeological	NA
104302	MB2005/030	Mitchell's Bay	Archaeological	NA
104303	MB2005/031	Mitchell's Bay	Archaeological	NA
104304	MB2005/032	Mitchell's Bay	Archaeological	NA
104305	MB2005/033	Mitchell's Bay	Archaeological	NA
104306	MB2005/034	Mitchell's Bay	Archaeological	NA
104307	MB2005/035	Mitchell's Bay	Archaeological	NA
104308	MB2005/036	Mitchell's Bay	Archaeological	NA
104309	MB2005/037	Mitchell's Bay	Archaeological	NA
104310	MB2005/038	Mitchell's Bay	Archaeological	NA
104311	MB2005/039	Mitchell's Bay	Archaeological	NA
104312	MB2005/040	Mitchell's Bay	Archaeological	NA
104313	MB2005/041	Mitchell's Bay	Archaeological	NA
104314	MB2005/042	Mitchell's Bay	Archaeological	NA
104315	MB2005/043	Mitchell's Bay	Archaeological	NA
104316	MB2005/044	Mitchell's Bay	Archaeological	NA
104317	MB2005/045	Mitchell's Bay	Archaeological	NA
104318	MB2005/046	Mitchell's Bay	Archaeological	NA



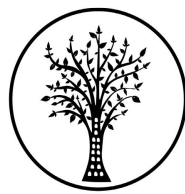
CTS HERITAGE

104319	MB2005/047	Mitchell's Bay	Archaeological	NA
104320	MB2005/048	Mitchell's Bay	Archaeological	NA
104321	MB2005/049	Mitchell's Bay	Archaeological	NA
104322	MB2005/050	Mitchell's Bay	Archaeological	NA
104323	MB2005/051	Mitchell's Bay	Archaeological	NA
104324	MB2005/052	Mitchell's Bay	Archaeological	NA
104325	MB2005/053	Mitchell's Bay	Archaeological	NA
104326	MB2005/054	Mitchell's Bay	Archaeological	NA
104327	MB2005/055	Mitchell's Bay	Archaeological	NA
104328	MB2005/056	Mitchell's Bay	Archaeological	NA
104329	MB2005/057	Mitchell's Bay	Archaeological	NA
104330	MB2005/058	Mitchell's Bay	Archaeological	NA
104331	MB2005/059	Mitchell's Bay	Archaeological	NA
104332	MB2005/060	Mitchell's Bay	Archaeological	NA
104333	MB2005/061	Mitchell's Bay	Archaeological	NA
104334	MB2005/062	Mitchell's Bay	Archaeological	NA
104335	MB2005/063	Mitchell's Bay	Archaeological	NA
104336	MB2005/064	Mitchell's Bay	Archaeological	NA
104337	MB2005/065	Mitchell's Bay	Archaeological	NA
104338	MB2005/066	Mitchell's Bay	Archaeological	NA
104339	MB2005/067	Mitchell's Bay	Archaeological	NA
104340	MB2005/068	Mitchell's Bay	Archaeological	NA
104341	MB2005/069	Mitchell's Bay	Archaeological	NA
104342	MB2005/070	Mitchell's Bay	Archaeological	NA
104343	MB2005/071	Mitchell's Bay	Archaeological	NA
104344	MB2005/072	Mitchell's Bay	Archaeological	NA
104345	MB2005/073	Mitchell's Bay	Archaeological	NA
104349	MB2005/077	Mitchell's Bay	Archaeological	NA
104352	MB2005/080	Mitchell's Bay	Archaeological	NA
104353	MB2005/081	Mitchell's Bay	Archaeological	NA
104354	MB2005/082	Mitchell's Bay	Archaeological	NA
104355	MB2005/083	Mitchell's Bay	Archaeological	NA
104356	MB2005/084	Mitchell's Bay	Archaeological	NA
104357	MB2005/085	Mitchell's Bay	Archaeological	NA
104362	MB2005/090	Mitchell's Bay	Archaeological	NA



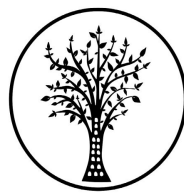
CTS HERITAGE

104363	MB2005/091	Mitchell's Bay	Archaeological	NA
104364	MB2005/092	Mitchell's Bay	Archaeological	NA
104365	MB2005/093	Mitchell's Bay	Archaeological	NA
104366	MB2005/094	Mitchell's Bay	Archaeological	NA
104367	MB2005/095	Mitchell's Bay	Archaeological	NA
104368	MB2005/096	Mitchell's Bay	Archaeological	NA
104369	MB2005/097	Mitchell's Bay	Archaeological	NA
104370	MB2005/098	Mitchell's Bay	Archaeological	NA
104371	MB2005/099	Mitchell's Bay	Archaeological	NA
104372	MB2005/100	Mitchell's Bay	Archaeological	NA
104373	MB2005/101	Mitchell's Bay	Archaeological	NA
104374	MB2005/102	Mitchell's Bay	Archaeological	NA
104375	MB2005/103	Mitchell's Bay	Archaeological	NA
104376	MB2005/104	Mitchell's Bay	Archaeological	NA
104377	MB2005/105	Mitchell's Bay	Archaeological	NA
104378	MB2005/106	Mitchell's Bay	Archaeological	NA
104379	MB2005/107	Mitchell's Bay	Archaeological	NA
104380	MB2005/108	Mitchell's Bay	Archaeological	NA
104381	MB2005/109	Mitchell's Bay	Archaeological	NA
104382	MB2005/110	Mitchell's Bay	Archaeological	NA
104383	MB2005/111	Mitchell's Bay	Archaeological	NA
104384	MB2005/112	Mitchell's Bay	Archaeological	NA
104385	MB2005/113	Mitchell's Bay	Archaeological	NA
104386	MB2005/114	Mitchell's Bay	Archaeological	NA
104387	MB2005/115	Mitchell's Bay	Archaeological	NA
104388	MB2005/116	Mitchell's Bay	Archaeological	NA
104389	MB2005/117	Mitchell's Bay	Archaeological	NA
104390	MB2005/118	Mitchell's Bay	Archaeological	NA
104391	MB2005/119	Mitchell's Bay	Archaeological	NA
104392	MB2005/120	Mitchell's Bay	Archaeological	NA
104393	MB2005/120-2	Mitchell's Bay	Archaeological	NA
104394	MB2005/120-3	Mitchell's Bay	Archaeological	NA
104395	MB2005/121	Mitchell's Bay	Archaeological	NA
104396	MB2005/122	Mitchell's Bay	Archaeological	NA
104397	MB2005/123	Mitchell's Bay	Archaeological	NA



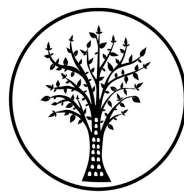
CTS HERITAGE

104398	MB2005/124	Mitchell's Bay	Archaeological	NA
104399	MB2005/125	Mitchell's Bay	Archaeological	NA
104400	MB2005/126	Mitchell's Bay	Archaeological	NA
104401	MB2005/127	Mitchell's Bay	Archaeological	NA
104402	MB2005/128	Mitchell's Bay	Archaeological	NA
104409	MB2005/135	Mitchell's Bay	Archaeological	NA
104410	MB2005/136	Mitchell's Bay	Archaeological	NA
104411	MB12006/001	Mitchell's Bay	Archaeological	NA
104412	MB2006/002	Mitchell's Bay	Archaeological	NA
104413	MB2006/003	Mitchell's Bay	Archaeological	NA
104414	MB2006/004	Mitchell's Bay	Archaeological	NA
104415	MB2006/005	Mitchell's Bay	Archaeological	NA
104416	MB2006/006	Mitchell's Bay	Archaeological	NA
104417	MB2006/007	Mitchell's Bay	Archaeological	NA
104418	MB2008/001	Mitchell's Bay	Archaeological	NA
104419	MB2008/002	Mitchell's Bay	Archaeological	NA
104420	MB2008/002A	Mitchell's Bay	Archaeological	NA
104421	MB2008/003	Mitchell's Bay	Archaeological	NA
104422	MB2008/004	Mitchell's Bay	Archaeological	NA
104423	MB2008/005	Mitchell's Bay	Archaeological	NA
104424	MB2008/006	Mitchell's Bay	Archaeological	NA
104425	MB2008/007	Mitchell's Bay	Archaeological	NA
104426	MB2008/008	Mitchell's Bay	Archaeological	NA
104427	MB2008/009	Mitchell's Bay	Archaeological	NA
104428	MB2008/010	Mitchell's Bay	Archaeological	NA
104429	MB2008/011	Mitchell's Bay	Archaeological	NA
104430	MB2008/012	Mitchell's Bay	Archaeological	NA
104431	MB2008/013	Mitchell's Bay	Archaeological	NA
104432	MB2008/014	Mitchell's Bay	Archaeological	NA
104433	MB2008/015	Mitchell's Bay	Archaeological	NA
104434	MB2008/016	Mitchell's Bay	Archaeological	NA
104435	MB2008/017	Mitchell's Bay	Archaeological	NA
104436	MB2008/018	Mitchell's Bay	Archaeological	NA
104437	MB2008/019	Mitchell's Bay	Archaeological	NA
104438	MB2008/020	Mitchell's Bay	Archaeological	NA



CTS HERITAGE

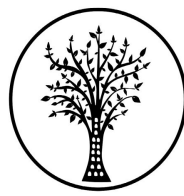
104439	MB2008/021	Mitchell's Bay	Archaeological	NA
104440	MB2008/022	Mitchell's Bay	Archaeological	NA
104441	MB2008/023	Mitchell's Bay	Archaeological	NA
104442	MB2008/024	Mitchell's Bay	Archaeological	NA
104443	MB2008/025	Mitchell's Bay	Archaeological	NA
104444	MB2008/026	Mitchell's Bay	Archaeological	NA
104445	MB2008/027	Mitchell's Bay	Archaeological	NA
104446	MB2008/028	Mitchell's Bay	Archaeological	NA
104447	MB2008/029	Mitchell's Bay	Archaeological	NA
104448	MB2008/030	Mitchell's Bay	Archaeological	NA
104449	MB2008/031	Mitchell's Bay	Archaeological	NA
104450	MB2008/032	Mitchell's Bay	Archaeological	NA
104451	MB2008/033	Mitchell's Bay	Archaeological	NA
104452	MB2008/034	Mitchell's Bay	Archaeological	NA



CTS HERITAGE

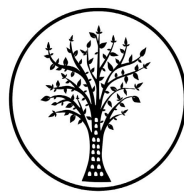
Heritage Resources located within the 300m Coastal Buffer area (Figures 2a-3dii)

SID	Site Number	Site Name	Site Type	Grading
87557	NAMA027	Namaqualand 027	Artefacts	Grade IIIc
87558	NAMA028	Namaqualand 028	Artefacts	Grade IIIc
87559	NAMA029	Namaqualand 029	Artefacts	Grade IIIc
87560	NAMA030	Namaqualand 030	Artefacts	Grade IIIc
87561	NAMA031	Namaqualand 031	Artefacts	Grade IIIc
87562	NAMA032	Namaqualand 032	Artefacts	Grade IIIc
87563	NAMA033	Namaqualand 033	Artefacts	Grade IIIc
104093	LK1991/001	Langklip	Archaeological	NA
104094	LK1991/002	Langklip	Archaeological	NA
104096	LK1991/006	Langklip	Archaeological	NA
104099	LK1991/008z	Langklip	Archaeological	NA
104101	LK1991/010	Langklip	Archaeological	NA
104102	LK1991/011	Langklip	Archaeological	NA
104103	LK1991/012	Langklip	Archaeological	NA
104104	LK1991/013	Langklip	Archaeological	NA
104105	LK1991/014	Langklip	Archaeological	NA
104106	LK1991/015	Langklip	Archaeological	NA
104107	LK1991/016	Langklip	Archaeological	NA
104108	LK1991/017	Langklip	Archaeological	NA
104109	LK1991/018	Langklip	Archaeological	NA
104110	LK1991/019	Langklip	Archaeological	NA
104111	LK1991/020	Langklip	Archaeological	NA
104112	LK1991/021	Langklip	Archaeological	NA
104113	LK1991/022	Langklip	Archaeological	NA
104114	LK1991/023	Langklip	Archaeological	NA
104115	LK1991/024	Langklip	Archaeological	NA
104116	LK1991/025	Langklip	Archaeological	NA
104117	LK1991/026	Langklip	Archaeological	NA
104118	LK2001/001A	Langklip	Archaeological	NA
104119	LK2001/001B	Langklip	Archaeological	NA
104120	LK2001/001C	Langklip	Archaeological	NA
104121	LK2001/002	Langklip	Archaeological	NA



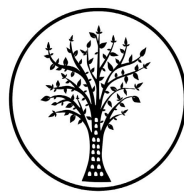
CTS HERITAGE

104122	LK2001/003	Langklip	Archaeological	NA
104123	LK2001/004	Langklip	Archaeological	NA
104124	LK2001/005	Langklip	Archaeological	NA
104125	LK2001/006	Langklip	Archaeological	NA
104126	LK2001/007	Langklip	Archaeological	NA
104127	LK2001/008	Langklip	Archaeological	NA
104128	LK2001/009	Langklip	Archaeological	NA
104129	LK2001/010A	Langklip	Archaeological	NA
104130	LK2001/010B	Langklip	Archaeological	NA
104133	LK2001/013	Langklip	Archaeological	NA
104144	LK2004/001	Langklip	Archaeological	NA
104145	LK2004/002	Langklip	Archaeological	NA
104146	LK2004/003	Langklip	Archaeological	NA
104147	LK2004/004	Langklip	Archaeological	NA
104148	LK2004/005	Langklip	Archaeological	NA
104149	LK2004/006	Langklip	Archaeological	NA
104150	LK2004/007	Langklip	Archaeological	NA
104151	LK2004/008	Langklip	Archaeological	NA
104152	LK2004/010	Langklip	Archaeological	NA
104153	LK2004/011	Langklip	Archaeological	NA
104154	LK2004/012	Langklip	Archaeological	NA
104155	LK2004/013	Langklip	Archaeological	NA
104156	LK2004/014	Langklip	Archaeological	NA
104157	LK2004/015	Langklip	Archaeological	NA
104180	LK2005/023	Langklip	Archaeological	NA
104181	LK2005/024	Langklip	Archaeological	NA
104182	LK2005/025	Langklip	Archaeological	NA
104183	LK2005/026	Langklip	Archaeological	NA
104184	LK2005/027	Langklip	Archaeological	NA
104185	LK2005/028	Langklip	Archaeological	NA
104186	LK2005/029	Langklip	Archaeological	NA
104187	LK2005/030	Langklip	Archaeological	NA
104188	LK2005/031	Langklip	Archaeological	NA
104189	LK2005/032	Langklip	Archaeological	NA
104191	LK2005/034	Langklip	Archaeological	NA



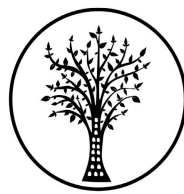
CTS HERITAGE

104192	LK2005/035	Langklip	Archaeological	NA
104193	LK2005/036	Langklip	Archaeological	NA
104194	LK2005/038	Langklip	Archaeological	NA
104195	LK2005/037	Langklip	Archaeological	NA
104196	LK2005/039	Langklip	Archaeological	NA
104197	LK2005/040	Langklip	Archaeological	NA
104198	LK2005/041	Langklip	Archaeological	NA
104199	LK2005/042	Langklip	Archaeological	NA
104200	LK2005/043	Langklip	Archaeological	NA
104201	LK2005/044	Langklip	Archaeological	NA
104202	LK2005/045	Langklip	Archaeological	NA
104203	LK2005/046	Langklip	Archaeological	NA
104204	LK2005/047	Langklip	Archaeological	NA
104205	LK2005/048	Langklip	Archaeological	NA
104206	LK2005/049	Langklip	Archaeological	NA
104207	LK2005/050	Langklip	Archaeological	NA
104208	LK2005/051	Langklip	Archaeological	NA
104209	LK2005/052	Langklip	Archaeological	NA
104210	LK2005/053	Langklip	Archaeological	NA
104211	LK2005/054	Langklip	Archaeological	NA
104212	LK2005/055	Langklip	Archaeological	NA
104213	LK2005/056	Langklip	Archaeological	NA
104214	LK2005/057	Langklip	Archaeological	NA
104215	LK2005/058	Langklip	Archaeological	NA
104216	LK2005/059	Langklip	Archaeological	NA
104217	LK2005/060	Langklip	Archaeological	NA
104218	LK2005/061	Langklip	Archaeological	NA
104219	LK2005/062	Langklip	Archaeological	NA
104220	LK2005/063	Langklip	Archaeological	NA
104221	LK2005/064	Langklip	Archaeological	NA
104222	LK2005/065	Langklip	Archaeological	NA
104223	LK2005/066	Langklip	Archaeological	NA
104224	LK2005/067	Langklip	Archaeological	NA
104225	LK2005/068	Langklip	Archaeological	NA
104226	LK2005/069	Langklip	Archaeological	NA



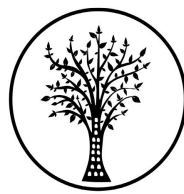
CTS HERITAGE

104228	LK2005/071	Langklip	Archaeological	NA
104229	LK2005/072	Langklip	Archaeological	NA
104230	LK2005/073	Langklip	Archaeological	NA
104231	LK2005/074	Langklip	Archaeological	NA
104232	LK2005/075	Langklip	Archaeological	NA
104233	LK2005/076	Langklip	Archaeological	NA
104234	LK2005/077	Langklip	Archaeological	NA
104235	LK2005/078	Langklip	Archaeological	NA
104236	LK2005/079	Langklip	Archaeological	NA
104237	LK2005/080	Langklip	Archaeological	NA
104238	LK2005/081	Langklip	Archaeological	NA
104239	LK2005/082	Langklip	Archaeological	NA
104240	LK2005/083	Langklip	Archaeological	NA
104241	LK2005/084	Langklip	Archaeological	NA
104242	LK2005/085	Langklip	Archaeological	NA
104243	LK2005/086	Langklip	Archaeological	NA
104244	LK2005/087	Langklip	Archaeological	NA
104245	LK2005/088	Langklip	Archaeological	NA
104246	LK2005/089	Langklip	Archaeological	NA
104247	LK2005/090	Langklip	Archaeological	NA
104248	LK2005/091	Langklip	Archaeological	NA
104249	LK2005/092	Langklip	Archaeological	NA
104250	LK2005/093	Langklip	Archaeological	NA
104251	LK2005/094	Langklip	Archaeological	NA
104252	LK2005/095	Langklip	Archaeological	NA
104253	LK2005/096	Langklip	Archaeological	NA
104254	LK2005/097	Langklip	Archaeological	NA
104255	LK2005/101	Langklip	Archaeological	NA
104256	LK2005/099	Langklip	Archaeological	NA
104257	LK2005/098	Langklip	Archaeological	NA
104258	LK2005/100	Langklip	Archaeological	NA
104259	LK2005/102	Langklip	Archaeological	NA
104260	LK2005/103	Langklip	Archaeological	NA
104261	LK2005/104	Langklip	Archaeological	NA
104262	LK2005/105	Langklip	Archaeological	NA



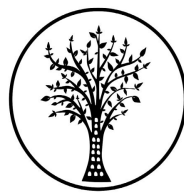
CTS HERITAGE

104264	LK2005/107	Langklip	Archaeological	NA
104266	LK2007/001	Langklip	Archaeological	NA
104273	MB2005/001	Mitchell's Bay	Archaeological	NA
104274	MB2005/002	Mitchell's Bay	Archaeological	NA
104275	MB2005/003	Mitchell's Bay	Archaeological	NA
104277	MB2005/005	Mitchell's Bay	Archaeological	NA
104278	MB2005/006	Mitchell's Bay	Archaeological	NA
104279	MB2005/007	Mitchell's Bay	Archaeological	NA
104288	MB2005/016	Mitchell's Bay	Archaeological	NA
104289	MB2005/017	Mitchell's Bay	Archaeological	NA
104290	MB2005/018	Mitchell's Bay	Archaeological	NA
104291	MB2005/019	Mitchell's Bay	Archaeological	NA
104292	MB2005/020	Mitchell's Bay	Archaeological	NA
104293	MB2005/021	Mitchell's Bay	Archaeological	NA
104294	MB2005/022	Mitchell's Bay	Archaeological	NA
104295	MB2005/023	Mitchell's Bay	Archaeological	NA
104296	MB2005/024	Mitchell's Bay	Archaeological	NA
104346	MB2005/074	Mitchell's Bay	Archaeological	NA
104347	MB2005/075	Mitchell's Bay	Archaeological	NA
104348	MB2005/076	Mitchell's Bay	Archaeological	NA
104350	MB2005/078	Mitchell's Bay	Archaeological	NA
104351	MB2005/079	Mitchell's Bay	Archaeological	NA
104358	MB2005/086	Mitchell's Bay	Archaeological	NA
104359	MB2005/087	Mitchell's Bay	Archaeological	NA
104360	MB2005/088	Mitchell's Bay	Archaeological	NA
104410	MB2005/136	Mitchell's Bay	Archaeological	NA
104418	MB2008/001	Mitchell's Bay	Archaeological	NA
104419	MB2008/002	Mitchell's Bay	Archaeological	NA
104420	MB2008/002A	Mitchell's Bay	Archaeological	NA
104421	MB2008/003	Mitchell's Bay	Archaeological	NA
104422	MB2008/004	Mitchell's Bay	Archaeological	NA
104423	MB2008/005	Mitchell's Bay	Archaeological	NA
104424	MB2008/006	Mitchell's Bay	Archaeological	NA
104425	MB2008/007	Mitchell's Bay	Archaeological	NA
104426	MB2008/008	Mitchell's Bay	Archaeological	NA



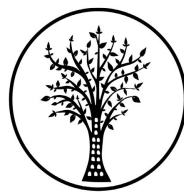
CTS HERITAGE

104427	MB2008/009	Mitchell's Bay	Archaeological	NA
104428	MB2008/010	Mitchell's Bay	Archaeological	NA
104429	MB2008/011	Mitchell's Bay	Archaeological	NA
104430	MB2008/012	Mitchell's Bay	Archaeological	NA
104431	MB2008/013	Mitchell's Bay	Archaeological	NA
104432	MB2008/014	Mitchell's Bay	Archaeological	NA
104433	MB2008/015	Mitchell's Bay	Archaeological	NA
104434	MB2008/016	Mitchell's Bay	Archaeological	NA
104435	MB2008/017	Mitchell's Bay	Archaeological	NA
104436	MB2008/018	Mitchell's Bay	Archaeological	NA
104437	MB2008/019	Mitchell's Bay	Archaeological	NA
104438	MB2008/020	Mitchell's Bay	Archaeological	NA
104439	MB2008/021	Mitchell's Bay	Archaeological	NA
104440	MB2008/022	Mitchell's Bay	Archaeological	NA
104441	MB2008/023	Mitchell's Bay	Archaeological	NA
104442	MB2008/024	Mitchell's Bay	Archaeological	NA
104443	MB2008/025	Mitchell's Bay	Archaeological	NA
104444	MB2008/026	Mitchell's Bay	Archaeological	NA
104445	MB2008/027	Mitchell's Bay	Archaeological	NA
104446	MB2008/028	Mitchell's Bay	Archaeological	NA
104447	MB2008/029	Mitchell's Bay	Archaeological	NA
104448	MB2008/030	Mitchell's Bay	Archaeological	NA
104449	MB2008/031	Mitchell's Bay	Archaeological	NA
104450	MB2008/032	Mitchell's Bay	Archaeological	NA
104451	MB2008/033	Mitchell's Bay	Archaeological	NA
104452	MB2008/034	Mitchell's Bay	Archaeological	NA



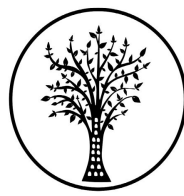
CTS HERITAGE

APPENDIX 2: Chance Finds Of Palaeontological Material Protocol



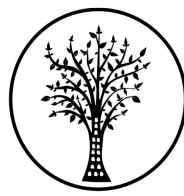
CTS HERITAGE

APPENDIX 3: Results of Public Consultation



CTS HERITAGE

APPENDIX 4: Specialist CVs



CTS HERITAGE

APPENDIX 5: Desktop PIA by Dr John Pether