

**PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT  
PROPOSED DEVELOPMENT  
PHASE II AND PHASE III NAUTILUS BAY  
MOSSEL BAY**

Prepared for

**HILLAND ASSOCIATES**

By

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## EXECUTIVE SUMMARY

Hilland Associates requested that the Agency for Cultural Resource Management undertake a Phase 1 baseline Archaeological Impact Assessment of Phase II and Phase III of the proposed Nautilus Bay development, near Mossel Bay in the southern Cape.

The aim of the study is to locate and map archaeological heritage remains that may be negatively impacted by the planning, construction and implementation of the proposed project, to assess the significance of the potential impacts and to propose measures to mitigate against the impacts.

Phase II of the proposed project, comprising the remainder of Farm 298, envisages a Golf Estate. The Phase II study area is 404 ha in extent.

Phase III of the proposed project, comprising Portion 3 of the farm Klipfontein No. 249, comprises a high performance sports centre. A small aerodrome with airstrip is also envisaged. The Phase III study area is 696 ha in extent.

Phase I of Nautilus Bay, comprising the residential component, has already been approved.

The baseline archaeological study of Phase II and Phase III of the proposed Nautilus Bay development has identified potentially significant impacts to pre-colonial archaeological material that will need to be mitigated prior to development activities.

Nineteen pre-colonial archaeological sites have been identified among the primary dunes in the shoreline area of the study area. The sites comprise extensive scatters of mainly Later Stone Age tools, with shellfish, ostrich eggshell and pottery.

A Christian burial was located at the back of the high dunes in the Phase II study area.

Relatively large numbers of Early Stone Age as well as Middle Stone Age tools were also noted in the old agricultural lands, in culverts, roads, dongas, and on eroded slope washes further inland in the study area.

Buildings in Phase II and Phase III were also noted. A small family cemetery close to the ruined homestead and outbuildings on the remainder of Farm 298 (Phase II) should not be disturbed. The farm buildings and cemetery are older than 60 years of age and are protected under the National Heritage Resources Act (No. 25 of 1999).

While the archaeological sites aligned along the high primary dunes in the shoreline area in the Phase II and III area will not be directly impacted by the proposed development, increased physical and human pressures (i.e. secondary and long-term cumulative impacts) that are often associated with such developments will very likely impact negatively on these important heritage remains.

Recommended actions for mitigating impacts include detailed surveying, mapping and collection of archaeological heritage remains.

Monitoring of bulk earthworks for infrastructure and excavations in the Phase II and Phase III area by a professional archaeologist is also recommended.

Buildings and structures in Phase II and III will require a specialist assessment, in order to determine their significance and heritage conservation value. In terms of the National Heritage Resources Act (No. 25 of 1999), any planned destruction, renovations, restoration and alterations to buildings over 60 years of age require a permit from Heritage Western Cape, the provincial heritage authority.

It is also strongly recommended that a baseline archaeological survey of the already approved Phase I of the Nautilus Bay project be undertaken by a professional archaeologist. It is apparent that such a study was not completed for this phase of the project. Well preserved, highly visible and fragile shell middens with bone, pottery, ash and charcoal, ostrich eggshell and stone tools occur in the large wind deflated dunes and on the steep primary dunes adjacent the shoreline.

Scatters of stone tools, shellfish remains and terrestrial mammal bones also occur on wide sandy slopes both east and west of the main parking area at the beach in the Phase I area.

Increased physical and human pressures that are associated with the proposed project will very likely negatively impact these important archaeological sites.

## **1. INTRODUCTION**

### **1.1 Background and brief**

Hilland Associates, on behalf of Vuru Vuru Estate West (Pty) Ltd requested that the Agency for Cultural Resource Management undertake a Phase 1 baseline Archaeological Impact Assessment (AIA) of Phase II and Phase III of the proposed Nautilus Bay development, near Mossel Bay, on the southern Cape coast.

Phase II of the proposed project, comprising the remainder of Farm 298, envisages a Golf Estate. Phase II is 404 ha in extent.

Phase III of the proposed project, comprising Portion 3 of the farm Klipfontein No. 249, comprises a Sports Centre, with cricket fields, rugby and soccer arena, and golf course. A small aerodrome with airstrip is also envisaged. Phase III is 696 ha in extent.

The aim of the study is to locate and map archaeological heritage remains that may be negatively impacted by the planning, construction and implementation of the proposed project, to rate the significance of the potential impacts and to propose measures to mitigate against the impact.

## **2. TERMS OF REFERENCE**

The terms of reference for the study were:

1. to determine whether there are likely to be any archaeological sites of significance within Phase II and Phase III of the proposed project;
2. to identify and map any sites of archaeological significance within the proposed sites;
3. to indicate the sensitivity and conservation significance of archaeological sites potentially affected by the proposed development;
4. to assess the status and significance of any impacts resulting from the proposed development, and
5. to identify mitigatory measures to protect and maintain any valuable archaeological sites that may exist within the site.

### 3. THE STUDY APPROACH

#### **3.1 Assumptions**

Since the receiving environment is located within a known archaeologically sensitive (shoreline) area (Kaplan 1993), the assessment assumes that:

- damage to heritage resources potentially will occur in the development of the property, as well as in the entire duration of the future use of the property and thus that
- effective mitigation must occur before the development proceeds.

#### **3.2 Method of survey**

The approach followed in the archaeological assessment entailed a foot and vehicle survey of Phase II and III of the proposed project.

Particular attention was paid to the archaeologically sensitive shoreline dune area.

A desktop study was also undertaken.

The South African coastal zone is a sensitive, threatened and vulnerable archaeological region. Research has shown that the majority of coastal archaeological sites are located within 300m of the shoreline (Kaplan 1993). As development spreads along the coastline, archaeological sites have come under increasing threat and many sites in the coastal zone have already been destroyed completely.

Planning for the coastal zone must therefore take account of this rich archaeological heritage. With the increased pressure to develop along the coastline, new settlements are often built on top of much older (precolonial) settlements, resulting in the irrecoverable loss of archaeological heritage remains.

Many archaeological sites have been recorded in the coastal zone between Mossel Bay and Vleesbaai (Kaplan 1993). These include mostly Later Stone Age<sup>1</sup> (LSA) shell middens (ancient rubbish dumps), but Middle Stone Age<sup>2</sup> (MSA), as well as even older Early Stone Age<sup>3</sup> (ESA) sites also occur. Such sites have been recorded at Boggomsbaai, Vleesbaai, Dana Bay, Pinnacle Point and Paradise Beach (Kaplan 1993, 1998a,b,c; Rudner 1968).

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<sup>1</sup> A term referring to the last 20 000 years of precolonial history in southern Africa.

<sup>2</sup> A term referring to the period between 250 000 and 20 000 years ago.

<sup>3</sup> A term referring to the period between 2 million and 250 000 years ago.

#### **4. THE STUDY AREA**

A locality map of the study area indicating Phase II and Phase III of Nautilus Bay is illustrated in Figure 1.

Nautilus Bay is located about 20 km west of Mossel Bay in the southern Cape.

Phase I of the Nautilus Bay development (located between Phase II and III) has already been approved. Preparation of the site for residential purposes has been completed. Infrastructure and bulk services are already in place.

Historically, the effected environment (i.e. the remainder of Farm 298 and Portion 3 of the Farm Klipfontein 249) was used mainly for marginal agricultural activities such dry crop farming and grazing.

Large parts of the site are also infested with alien vegetation, resulting in poor archaeological visibility.

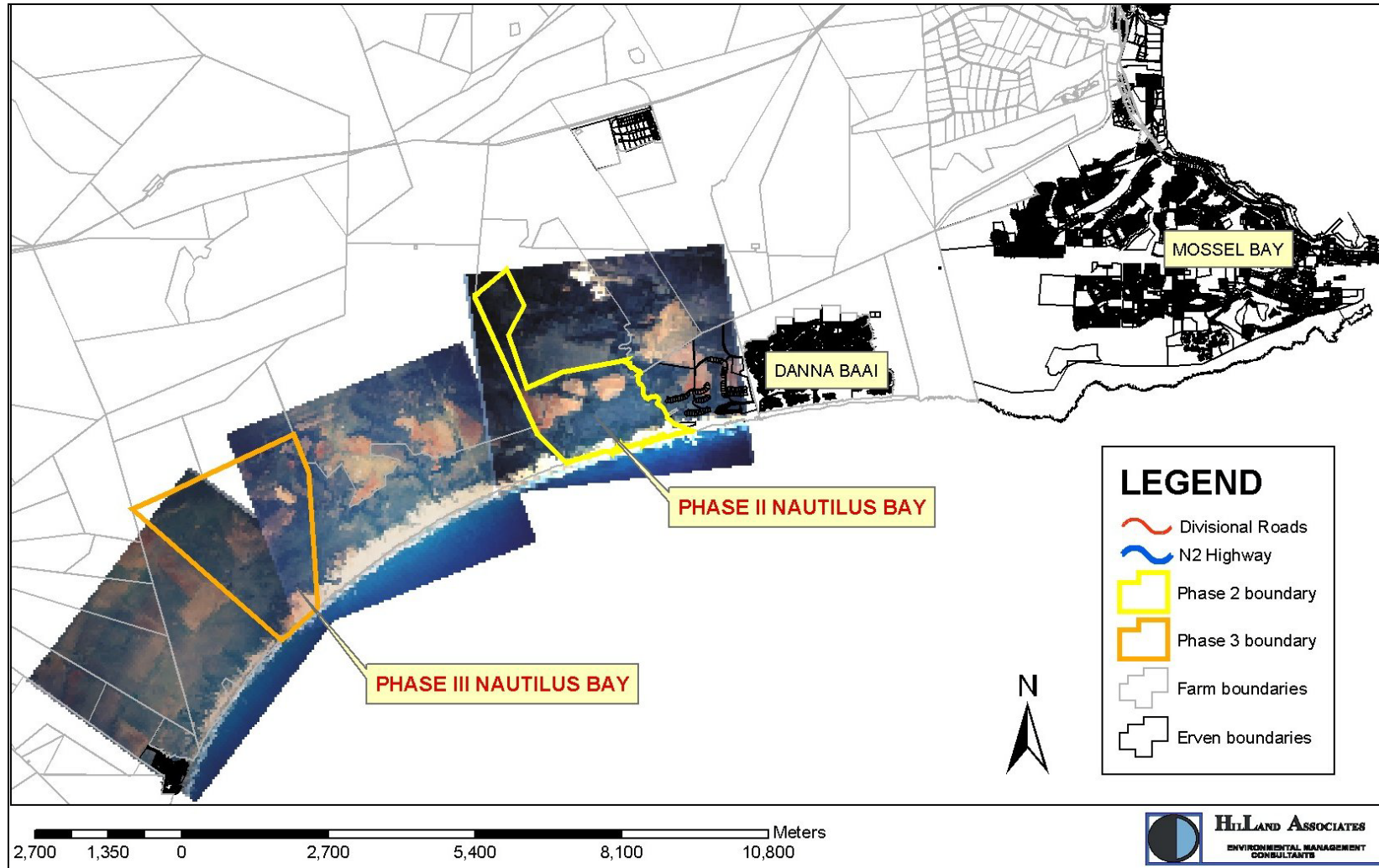


Figure 1. Archaeological study Nautilus Bay Phase II & III. Site locality map

## 5. LEGISLATIVE REQUIREMENTS

### **5.1 The National Heritage Resources Act (Act No. 25 of 1999)**

...any development or other activity which will change the character of a site exceeding 5 000m<sup>2</sup>, or the rezoning or change of land use of a site exceeding 10 000 m<sup>2</sup>, requires an archaeological impact assessment in terms of the National Heritage Resources Act (No. 25 of 1999).

#### **5.1.1 Structures (Section 34 (1))**

No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by Heritage Western Cape (HWC), the responsible provincial resources authority.

#### **5.1.2 Archaeology (Section 35 (4))**

No person may, without a permit issued by HWC, destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object.

#### **5.1.3 Burial grounds and graves (Section 36 (3))**

No person may, without a permit issued by the South African Heritage Resources Agency (SAHRA), destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority.

As the delegated provincial heritage authority, and in compliance with the terms of the National Heritage Resources Act, a copy of this report must be submitted to HWC, for their approval<sup>4</sup>.

## 6. IDENTIFICATION OF POTENTIAL RISKS

The following project actions will likely impact negatively on archaeological sites.

The actions are most likely to occur during the Construction and Operation Phase of the proposed project.

### **During the Construction Phase**

- Bulk earthworks and excavations for infrastructure, services and roads, will likely expose or uncover buried archaeological remains such as ancient Stone Age tools. Monitoring of bulk earthworks at Pinnacle Point Beach and Golf Club in Mossel Bay has recovered in-situ Stone Age tools in a stratified context (Dr Peter Nilssen, pers. comm.).

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<sup>4</sup> The report should be sent to Dr Antoinette Jerardino, Heritage Western Cape, Private Bag X9067, Cape Town, 8000.



### During the Operation Phase

- Secondary (i.e. long-term cumulative) impacts such as increased human activity will very likely impact negatively on fragile and significant archaeological heritage remains in the sensitive shoreline area.

## 7. IMPACT ASSESSMENT AND DESCRIPTION

Nineteen pre-colonial archaeological sites were recorded during the baseline survey of Phase II and III of the proposed Nautilus Bay project, although given their close proximity to each other some of the sites may represent a single site, or a complex of related sites.

These numbers probably do not reflect the total number of sites recorded in the study area, as it is very likely that 'new' sites will be uncovered, and others probably buried, by shifting wind blown sands.

The location of the archaeological sites identified during the study has been plotted in Figures 2 and 3.

It is also apparent that a 'layering' of older (MSA) and younger (LSA) material occurs on some of the sites, suggesting visits to the coast over many thousands of years by prehistoric people.

Even older ESA as well as MSA tools were recorded in the old agricultural and grazing lands, in dongas, culverts, road cuttings and among eroded slope washes.

The Nautilus Bay archaeological sites were recorded and given a co-ordinate using a Garmin Gecko 201 GPS set on map datum WGS 84.

### 7.1 Phase II Nautilus Bay

#### **NB 1. GPS Reading S 34° 12 796 E 21° 59 776**

A scatter of LSA and some MSA tools were located on a steep, severely eroded south-facing primary dune slope. A thin scatter of fragments of White Mussel (Donax Serra) and some whole shell, including a few fragments of Brown Mussel (Perna perna) were also noted on the severely eroded and disturbed slopes. The recorded finds include mainly quartzite flakes, retouched blade tools, hammerstones, chunks, large side struck cobble flakes, and flaked cobbles. A few tools in red silcrete were also noted. The quartzite could easily have been obtained locally, but the source of the silcrete is uncertain.

Significance of finds: **low**

Suggested mitigation: **none required**

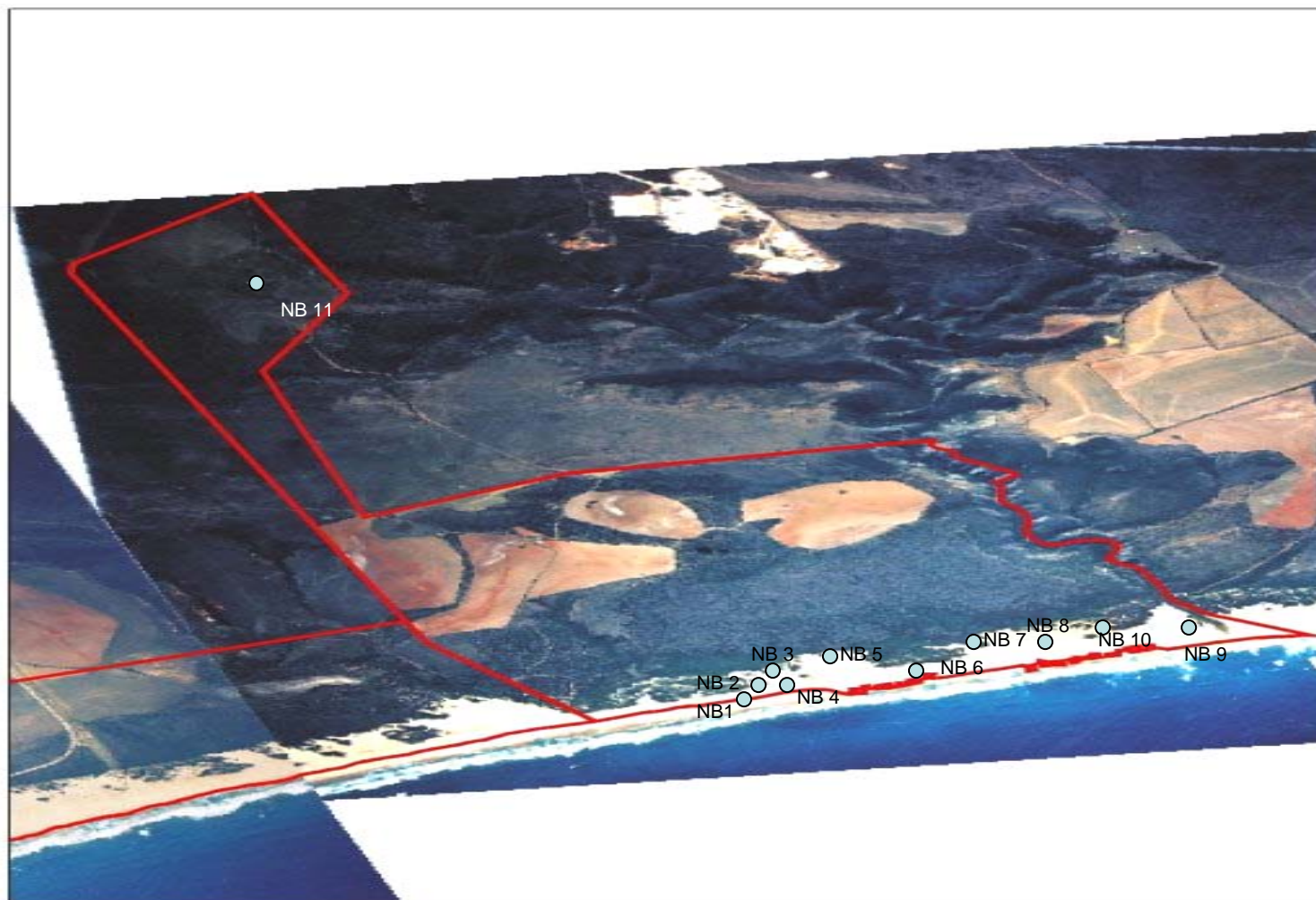


Figure 2. Archaeological study Nautilus Bay Phase II & III. Aerial photograph showing location of archaeological sites in Phase II.

**NB 2. GPS Reading S 34° 12 770 E 21° 59 802**

A thin scatter of LSA and some MSA tools occur on a flat dune terrace on wind-exposed compact red sands on the steep primary dunes about 25 m east of NB 1 (Figure 4). Large numbers of tools also occur on nearby wind-blown dune plumes and partially exposed red sands. The recorded finds include a range of tool types such as modified and unmodified flakes, hammerstones, cores, blade tools, chunks, scrapers, small and large manuports, and flaked and split cobbles. The majority of the tools are in fine grained, locally available quartzite

Significance of finds: **high**

Suggested mitigation: **survey, mapping and collection required**

**NB 3. GPS Reading S 34° 12 720 E 21° 59 836**

The site comprises a small concentrated surface scatter of white mussel about 3 x 3 m in diameter, in a very thin dune plume, between two vegetated dunes, about 30 m north east NB 2. No cultural remains occur on the site.

Significance of finds: **low**

Suggested mitigation: **none required**

**NB 4. GPS Reading S 34° 12 751 E 21° 59 908**

The site comprises a series of extensive scatters of stone tools on naturally terraced compacted wind eroded red sands and calcretes, about 40 m east of NB 2 (Figure 5). A large range of LSA tools occur, including modified and unmodified flakes, blade tools, chunks, at least 10 hammerstones, cores, manuports, edge ground chunks, split and large flaked cobbles, and miscellaneous grindstones/fragments. MSA tools, including triangular flakes with prepared platforms and large cores were also noted. All the tools are in fine-grained quartzite. Fragments of White Mussel occur among the terraced slopes.

Significance of finds: **high**

Suggested mitigation: **survey, mapping and collection required**

**NB 5. GPS Reading S 34° 12 672 E 21° 59 927**

A modern Christian burial site was located at the top end of a large open dune plume at the point where the white sand dune meets the vegetated dune slopes (Figure 6). A laminated pine cross, with a barely legible inscription marks the site. No burial mound is evident.

Significance of find: **high**

Suggested mitigation: **developers must establish the identity and ownership of the grave**



Figure 4. NB 2



Figure 5. NB 4



Figure 6. NB 5

**NB 6. GPS Reading S 34° 12 723 E 22° 00 013**

An extensive scatter of stone tools occur on a wedge of compacted red sands on the wind-eroded primary dunes (Figure 7). Both LSA and MSA tools were identified, including flakes, blade tools, cores, hammerstones, chunks, manuports, and split/flaked cobbles. The majority of the tools are in fine-grained quartzite, but a few tools in silcrete and indurated shale also occur. The quartzite was most likely obtained locally, but the source of the silcrete and indurated shale is unknown. One piece of partially ground hematite was also noted. A number of tools also occur on the very steep, severely eroded south-facing dune slopes.

Significance of finds: **high**

Suggested mitigation: **survey, mapping and collection required**

**NB 7. GPS Reading S 34° 12 666 E 22° 00 253**

Relatively large numbers of stone tools, including flakes, chunks, blades, hammerstones, cores and manuports, occur on compacted, wind eroded red sands on the steep primary dunes (Figure 8). The majority of tools are in locally available fine grained quartzite, but a few tools in silcrete were also noted. One White Mussel scraper was also found. Tools were also noted on the steep wind eroded slopes of the south facing dunes.

Significance of finds: **high**

Suggested mitigation: **survey, mapping and collection required**

**NB 8. GPS Reading S 34° 12 633 E 22° 00 365**

A very thin scatter of stone tools was located on a wide extensive strip of wind exposed and eroded compact red sands. Tools were also noted on the highly eroded steep south-facing primary dune slopes. Tools recorded include a few cores, flakes, chunks and manuports, all in fine-grained quartzite. Large numbers of land snails litter the site.

Significance of finds: **low**

Suggested mitigation: **none required**

**NB 9. GPS Reading S 34° 12 561 E 22° 00 652**

A large mound of White Mussel occurs in a large wind deflated basin surrounded by vegetated dunes, about 75 m northwest of the mouth of the Blinden River (Figure 9). A thin scatter of stone tools, mainly flakes and chunks, occur on the surface of the shell mound. One silcrete adze was also noted, as were three pieces of undecorated pottery. A large amount of broken modern glass and bits of plastic litter the site. There is also evidence of modern fires (braais) near the edge of the site.

Significance of finds: **medium to low**

Suggested mitigation: **none required**



Figure 7. NB 6



Figure 8. NB 7



Figure 9. NB 9

**NB 10. GPS Reading S 34° 12 600 E 22° 00 525**

A very thin scatter of quartzite tools, including flakes, chunks, an anvil and a few cores occur on a steep, highly eroded south-east facing dune slope, about 300 m west of the Blinden River. A few silcrete tools occur on the upper wind blown slopes, as well as three small pieces of coarse pottery. Some tools also occur on the severely eroded south facing dune slopes. Some White Mussel shell was also noted.

Significance of finds: **medium to low**

Suggested mitigation: **none required**

**NB 11.**

The original farmhouse and ruined outbuildings on Farm 298 was noted (Figure 10). NB 11 is located in the far northeastern portion of the property about 300 m south of the N2 National Road. The façade of the homestead is relatively intact, while additions have been made at the back of the building. However, the interior of the farmhouse has been completely vandalised.

A small, enclosed family cemetery occurs about 120 m west of the farmhouse (Figure 11). Two graves are located side by side. One grave contains the remains of Jacobus A. Pienaar, born 7 November 1849 - died 26 June 1923. The other grave contains the remains of Magdalena E. Pienaar, born 9 July 1852 - died 2 April 1943.

Although badly vandalised and ruined, the homestead and outbuildings are older than 60 years and are therefore protected under the NHRA (Act No. 25 of 1999). Proposed demolition, or alternatively any planned alterations, renovations or restoration of the buildings will require a permit from the delegated provincial heritage authority, Heritage Western Cape.

The cemetery and associated graves are also protected under the NHRA.

Significance of building ruins and graves: **potentially high and high**

Suggested mitigation: **an appropriate specialist must inspect the buildings to assess their conservation-value. The cemetery should be left alone**





Figure 10. NB 11 Farm 298 Homestead



Figure 11. NB 11 Farm 298 Cemetery



## **7.2 Phase III Nautilus Bay**

### **NB 12. GPS Reading S 34° 14 504 E 21° 56 063**

An extensive scatter of LSA and some MSA tools occur on compact red sands surrounded by low vegetated dune hummocks in the far north-western portion of the study area (Figure 12). Tools, including modified and unmodified flakes, edge struck flakes, large and smaller blade tools, hammerstones, anvils, cores, split and flaked cobbles and manuports litter the site. A few formal tools such as scrapers, backed tools and step-flaked tools were also noted. Some sun-bleached and fragile bone was also noted. The large numbers of quartzite cobbles (manuports) on the site suggest that NB 12 may represent a workshop/activity site. Most of the tools are in fine grained quartzite, but tools in silcrete, quartz and limestone also occur. A thin scatter of White Mussel also occurs across the site.

Significance of finds: **high**

Suggested mitigation: **survey, mapping and collection required**

### **NB 13. GPS Reading S 34° 14 502 E 21° 56 123**

Large numbers of stone tools, including modified and unmodified flakes, chunks, cores, hammerstones, blade tools, and manuports occur on an extensive series of wind eroded calcrete and compact red sands on the steep primary dunes overlooking the ocean (Figure 13). The majority of the tools are in fine-grained, locally available quartzite, while some tools in silcrete, calcrete and quartz were also noted. A thin scatter of White Mussel fragments occurs across on the site. Possible workshop/activity areas were also noted where relatively large numbers of manuports occur in places.

Significance of finds: **high**

Suggested mitigation: **survey, mapping and collection required**

### **NB 14. GPS Reading S 34° 14 403 E 21° 56 128**

Large numbers of stone tools in fine grained quartzite, including flakes, blade tools, chunks, cores, split/flaked cobbles, and manuports, occur on extensive beds of compact red sands about 200 m north of NB 13 (Figure 14). Tools in silcrete, including flakes, a small round core and a scraper were also recorded. Some ostrich eggshell was noted.

Significance of finds: **high**

Suggested mitigation: **survey, mapping and collection required**

### **NB 15. GPS Reading S 34° 14 380 E 21° 56 163**

Extensive scatters of stone tools occur on compacted red sands about 60 m north east of NB 14 (Figure 15). Tools, including unmodified and modified flakes, chunks, cores, large manuports, blade tools, and split/flaked quartzite cobbles, were noted. Some ostrich eggshell was also found.

Significance of finds: **high**

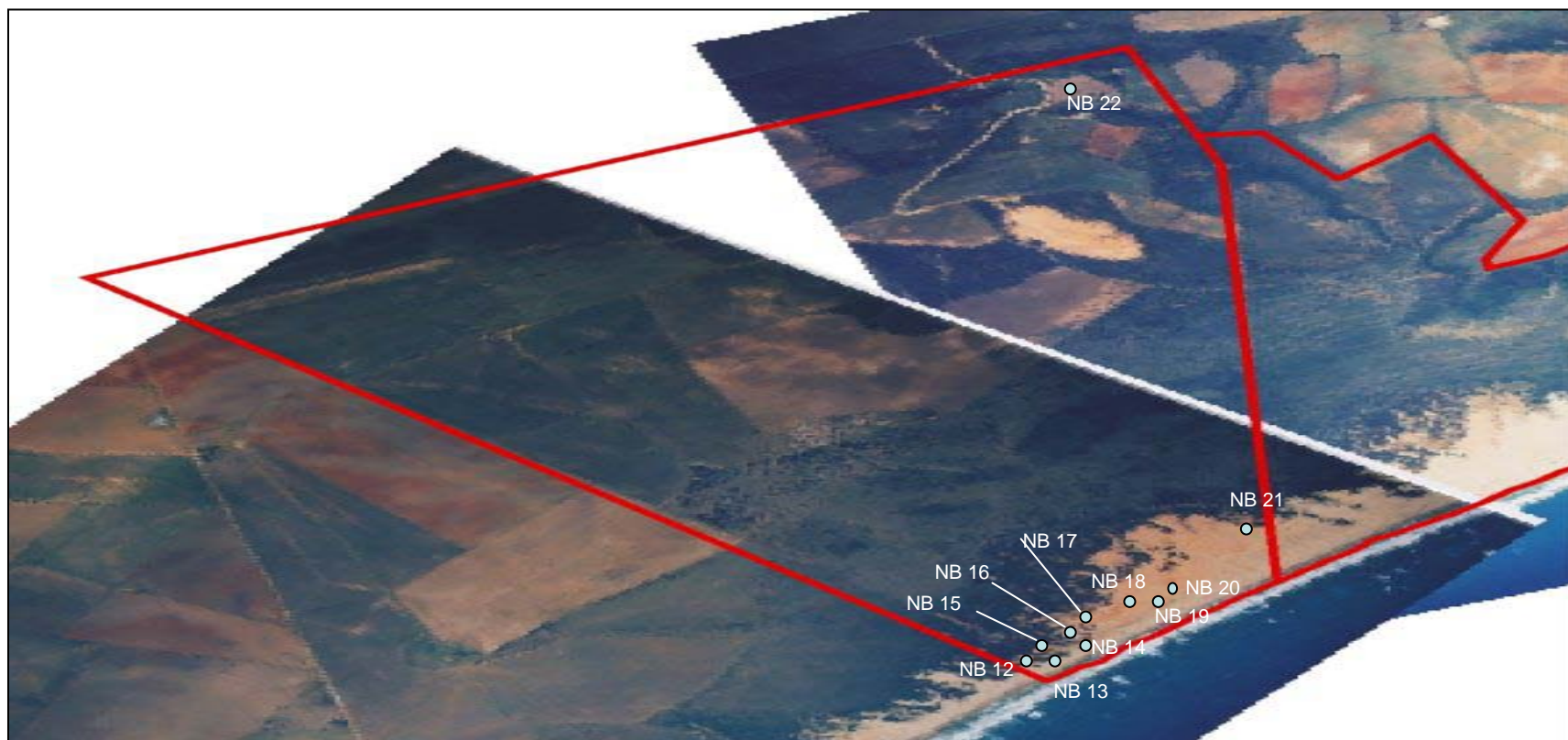


Figure 3. Archaeological study Nautilus Bay Phase II & III. Aerial photograph showing location of archaeological sites in Phase III.



Figure 12. NB 12



Figure 13. NB 13



Figure 14. NB 14



Figure 15. NB 15

Suggested mitigation: **survey, mapping and collection required**

**NB 16. GPS Reading S 34° 14 411 E 21° 56 210**

A low density scatter of LSA tools occur on compacted red sands in a thin dune slack on the extensive south facing dune slopes. Some MSA tools also occur, including a near perfect 'Still bay' unifacial point. All the tools are in quartzite.

Significance of finds: **low**

Suggested mitigation: **none required**

**NB 17. GPS Reading S 34° 14 234 E 21° 56 248**

A thin scatter of quartzite tools were noted among compact and eroded red sands on south-facing dune slopes near the edge of the vegetated forest.

Significance of finds: **low**

Suggested mitigation: **none required**

**NB 18. GPS Reading S 34° 14 250 E 21° 56 335**

A thin scatter of stone tools occurs in a large wind deflated dune on the south facing slopes. Most of the tools are in fine-grained quartzite, but several tools in silcrete were also noted. Most interesting is the occurrence of perhaps several thousand pieces of ostrich eggshell (OES) concentrated on the site (Figure 16), while a large amount of Oyster (*Pinctada capensis*) shells were also noted at the bottom of a steep parallel dune slope. No OES beads or incomplete beads, or the remains of OES water containers were found.

Significance of finds: **high**

Suggested mitigation: **survey, mapping and collection required**

**NB 19. GPS Reading S 34° 14 304 E 21° 56 364**

Large numbers of stone tools occur on a thin wedge of compacted wind eroded red sands along the edge of the steep dune crest about 60-70 m south-east of NB 18 (Figure 17). The tools, mostly in fine-grained quartzite, include flakes, chunks, blade tools, cores, split/flaked cobbles and hammerstones. A thin scatter of White Mussel fragments also occurs on the site.

Significance of finds: **high**

Suggested mitigation: **survey, mapping and collection required**



Figure 16. NB 18



Figure 18. NB 20



Figure 17. NB 19

**NB 20. GPS Reading S 34° 14 278 E 21° 56 402**

Large numbers of LSA tools as well as relatively large amounts of White Mussel fragments occur on compacted, wind eroded red sands along a thin edge of the dune crest about 30 m east of NB 18 (Figure 18). The tools, mostly in fine-grained quartzite, include large and smaller flakes, chunks, some blade tools, cores, split/flaked cobbles, manuports and hammerstones. Some tools in silcrete were also noted, including a translucent blade in cryptocrystalline silicate (CCS). The source of the silcrete and CCS is unknown and the CCS may have been transported to the site from a considerable distance.

Significance of finds: **high**

Suggested mitigation: **survey, mapping and collection required**

**NB 21. GPS Reading S 34° 14 203 E 21° 56 494**

Relatively large numbers of flakes, chunks, cores, hammerstones and split and flaked cobbles in fine-grained quartzite occur on a small patch of compacted wind-eroded red sands and exposed calcrete alongside a large vegetated parallel dune on the edge of the eastern boundary of the study area (Figure 19). A cache of unworked quartzite cobbles (manuports) occurs on the edge of the site.

Significance of finds: **high**

Suggested mitigation: **survey, mapping and collection required**

**NB 22.**

The original Doornfontein homestead was noted (Figure 20). The Late Victorian building is in very good condition. Some alterations have been made at the back of the house, but the building still retains its integrity and original form. The developers propose to convert the main building into an information centre, while some of the outbuildings will be converted for stabling horses.

The homestead and one or two of the outbuildings are older than 60 years and therefore protected under the NHRA (Act No. 25 of 1999). Proposed alterations, renovations and restoration of the buildings will require a permit from the delegated provincial heritage authority, Heritage Western Cape.

Significance of buildings: **high**

Suggested mitigation: **an appropriate specialist must inspect the buildings to assess their conservation-value**

### **7.3 Other finds in Phase II and Phase III Study Area**

Relatively large numbers of ancient ESA and MSA tools were found during a foot and vehicle survey of the inland areas of Phase II and Phase III of the proposed Nautilus Bay project.

The ESA artefacts comprise a range of tool types, including a relatively crude unifacial handaxe, large split/flaked cobbles, large cores, hammerstones, flakes and chunks, while the MSA tools comprise smaller triangular flakes (with prepared platforms), blade tools, smaller hammerstones, utilised flakes and cores. The tools are all made on fine and coarse-grained quartzite cobbles (both beach and river derived), while some of the ESA tools are also patinated and weathered (Figures 21 & 22).

According to consulting archaeologist Dr Peter Nilssen (pers. comm.), large numbers of in-situ ESA tools occur in the overlying sandy deposits at Pinnacle Point Beach and Golf Club near Mossel Bay, underlain by thicker clays and calcrete, which appear to vary in thickness across the area. Some tools were also found embedded in the thick clay deposits. Tools appear to be absent from the calcretes, although they do occur among exposed and eroded surface beds. The Nautilus Bay tools described above occur in a similar context.

Importance of finds: **low**

Suggested action: **bulk earthworks and excavation to be monitored by a professional archaeologist**





Figure 19. NB 21



Figure 20. NB 22 Doornfontein Homestead



Figure 21. Collection of stone tools from Phase II study area



Figure 22. Collection of stone tools from Phase III study area



## **7.4 Phase I**

Phase 1 of Nautilus Bay has already been approved. Access roads have been built, erven laid out and serviced, and a large parking area has been established at the main beach.

According to Hilland Associates (who were not responsible for undertaking environmental scoping for Phase I of the proposed Nautilus Bay project), an archaeological survey of Phase I of the project was not undertaken by a professional archaeologist.

It is worth noting that Dr H. Deacon (1989) undertook an archaeological assessment of excavations for a proposed pipeline for the Moss gas project. The excavation and pipeline route is located within the Phase I area of the Nautilus Bay project.

Deacon (1989:1) describes a well-preserved shell midden close to the parking area, with stone tools, surface bone, pottery, ostrich eggshell and ground ochre. This site was relocated by the consultant archaeologist (Figure 23). Systematic archaeological excavation of the parking area shell midden was recommended (Deacon 1989:2), although this was never carried out.

Archaeological remains were also noted for a distance of about 1km east and west of the main parking area (Deacon 1989 and Figures 24 & 25).

Well-preserved White Mussel dominated shell middens, containing in-situ ash, charcoal and bone, as well as large numbers of stone tools, some ostrich eggshell and pottery, was also noted in the extreme eastern portion of the Phase I project area on exposed and eroded calcretes (Figures 26 & 27).

It is important to note that the consulting archaeologist did not undertake a systematic archaeological survey of the Phase 1 area. The sites described above were noted and photographed during the course of the Phase II and Phase III field study.



Figure 23. Phase I shell midden also recorded by Deacon (1989)



Figure 25. Sites in Phase I area



Figure 24. Sites in Phase I area



Figure 26. Shell midden in Phase I area



Figure 27. Shell midden in Phase I area.

## 8. IMPACT STATEMENT

The impact of the proposed Nautilus Bay development (Phases II and III) on archaeological heritage remains is likely to be potentially very high.

The location of the sites is a timely reminder how little of the southern Cape coastline remains unsearched by archaeologists. The Nautilus Bay archaeological sites are well preserved and have remained relatively intact and undisturbed for possibly several thousand years.

While the archaeological sites in the sensitive shoreline area, i.e. those sites that are aligned along the steep primary dunes and in large wind deflated areas are not likely to be directly impacted by the proposed development, increased physical and human pressures (i.e. secondary impacts and longer term cumulative impacts) that are often associated with such developments, will very likely impact negatively on these fragile and very significant archaeological heritage remains.

## 9. MITIGATION MEASURES

The following essential mitigation measures are recommended:

- NB 2, 4, 6, 7 (Phase II) and NB 12, 13, 14, 15, 18, 19, 20 and 21 (Phase III) must be topographically surveyed, artefact scatters plotted and mapped, and the archaeological remains systematically collected under controlled conditions.
- The remaining sites could be left open to visitors to Nautilus Bay. Together with information boards and accompanying literature such as pamphlets, they may be developed as public open sites. It should be noted, however, that the development of public viewing archaeological sites is subject to the implementation of a Heritage Management Plan as required in terms of Section 47 (3) of the National Heritage Resources Act (No. 25 of 1999).
- The identity and ownership of the burial (NB 5) in the Phase II study area must be established.
- NB 11 (Phase II homestead and family cemetery) and NB 22 (Phase III homestead and outbuildings) must be investigated by an appropriate specialist in order to determine their heritage significance and conservation value.
- Bulk earthworks and excavations in Phase II and Phase III should be monitored by a qualified archaeologist<sup>5</sup>.
- Should an Environmental Control Officer (ECO) be appointed, he/she are to be briefed by a professional archaeologist what to look out for, particularly during vegetation clearing operations and preparation of the site for construction purposes.
- Proposed borrow pits servicing the project must be searched for archaeological remains.

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<sup>5</sup> Dr Peter Nilssen (082 783 5896), consultant archaeologist monitoring bulk earthworks at Pinnacle Point Beach & Golf Club, should be retained for monitoring earthworks at Nautilus Bay.

- It is strongly recommended that a Phase 1 baseline archaeological study of Phase I of the already approved Nautilus Bay be undertaken by a professional archaeologist. It is apparent that such a study was not undertaken, and that well preserved, highly significant and fragile archaeological heritage remains occur in the area. These remains are likely to be negatively impacted by an increase of visitors/residents to the area.

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