ARCHAEOLOGICAL SHOVEL TESTING
ERF 85 JACOBSBAAI
VREDENBURG-SALDANHA MUNICIPALITY
WESTERN CAPE PROVINCE

Report prepared for

SPRING ROMANCE PROP. 16 (PTY) LTD

By

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Executive summary

Erf 85 Jacobsbaai, located between Vredenburg and Saldanha Bay on the Cape West coast, contains significant archaeological heritage in the form of shell middens.

Most of the remains comprise shellfish but moderate quantities of bone, stone flakes, ostrich eggshell and pottery occur in some of the deposits.

The following recommendations are made:

- Systematic excavation and sampling of archaeological deposits in order to salvage important historical information.

1. INTRODUCTION

1.1 Background

BKS (Pty) Ltd, on behalf of Spring Romance Prop. 16 (Pty) Ltd, instructed the Agency for Cultural Resource Management (ACRM) to undertake shovel testing of archaeological deposits in Erf 85 (Moerie se Baai) Jacobsbaai, in Vredenburg-Saldanha Bay, in the Western Cape Province (Figure 1).

The development of Erf 85 Jacobsbaai for residential purposes has already been approved and preparation of the site for development (such as roads and bulk services) has been completed.

Significant quantities of shell midden remains were exposed during the course of excavations and bulk earthworks for services (Figures 2 & 3). Heritage Western Cape (HWC), the delegated provincial heritage authority, subsequently requested that the developer appoint a professional archaeologist to undertake archaeological shovel testing on the property in order to determine the significance (i.e. spatial extent, depth and variability) of the below ground archaeological deposits. ACRM was tasked to undertake the required work.

Shovel testing is an acceptable archaeological practice, as a means of determining the depth and variability of archaeological remains (both subsistence and cultural), in order to determine the extent of further archaeological investigations of specific areas that may be required on the site.

1.2 Description of the study area

Erf 85 Jacobsbaai (at approximately S 32° 58 488 E 17° 53 104 set on map datum WGS 84) is located in Mauritzbaai, immediately south of Jacobsbaai Township (Figure 4). A sandy beach and rocky shoreline forms the majority of the adjacent shoreline. Prior to preparation of the site for residential development, the affected property consisted of relatively flat well-vegetated dune littoral sands set back from the shoreline. A coastal track running more or less along the western boundary of the site defines the Admiralty Zone (public open space) from the privately owned property. The shoreline area in the northwestern portion of the site is characterised by a raised rocky/cobble cordon. The cordon crests at about 5 or 6 m above modern mean sea level, and likely reflects an ancient mid-Holocene shoreline when the seas stood a few metres higher relative to the land some 3000 to 5000 years ago (Parkington & Poggenpoel 1987).

1.3 Archaeological background of the study area

The Vredenburg Peninsula is exceptionally rich in archaeological sites (Kaplan 1993). Large numbers of sites have been recorded at Tabakbaai, Tooth Rock, Mauritzbaai and Jacobsbaai (Thackeray & Cronin 1975; Parkington & Poggenpoel 1987; Avery 1987; Kaplan 2003a,b,c, 2004). Its richness is determined largely by its unique rocky shoreline formation which was favoured by both Later Stone Age[1] (LSA) hunter-gatherers and Khoi herders in the past, as it offered greater opportunities for the exploitation of marine foods, while the local shales and granites provided vital nutrients for domestic stock.

[1] A term referring to the last 20 000 years of precolonial history in southern Africa.

Figure 1. Locality Map

Figure 2. Damaged shell midden remains.

Figure 3. Damaged shell midden remains

Figure 4. View of the site facing north east.

At Jacobsbaai and Mauritzbaai, substantial concentrations of shell middens are clustered inshore of the rocky shoreline in the intertidal zone (Avery 1987; Parkington & Poggenpoel 1987). It is here that large quantities of shellfish species were stripped from the rocks, or collected at low tides, processed, and consumed by LSA hunter-gatherers.

An ancient tidal fish trap has also been reported in Mauritzbaai (Avery 1987).

Erf 85 Jacobsbaai, located close to the rocky shoreline at Mauritzbaai, was clearly a focus of prehistoric human activity.

Severe disturbance of archaeological sites at Jacobsbaai and Mauritzbaai has taken place over the last few years, due mainly to an increase in residential development in the area, and accompanying physical and human pressures. The majority of the Jacobsbaai/Mauritzbaai archaeological sites have already been severely disturbed and damaged as a result of these ongoing activities. Preparation of Erf 85 Jacobsbaai for development, for example, has resulted in the severe disturbance of the archaeological site known as BCSB2, `probably the most significant site at Mauritzbaai' (Parkington & Poggenpoel 1987:4).

2. STUDY APPROACH

a) Fieldwork

Following a visit to the site by ACRM, HWC and BKS (Pty) Ltd to inspect archaeological remains at Erf 85, and subsequent discussions between HWC and the developer Mr Mike Smith, ACRM applied for and was issued a Permit (No. 2004-06-003) to dig a series of Test Pits, in order to determine the significance of the below-ground archaeological deposits.

24 Test Pits at selected points in the study area were undertaken (Figure 5). The archaeological deposits were sieved through a 10mm and 1.5mm wide mesh sieve, and sorted for artefacts on site. Cultural remains, including bone, stone tools, pottery, etc, was bagged and transported to Riebeek West for preliminary analysis and curation. Where justified, bulk samples of shellfish remains were retained from selected Test Pits for possible future research purposes. The curated archaeological remains will be permanently stored at Iziko: South African Museum in Cape Town.

b) Assessment of significance

The potential for buried archaeological deposits to yield information about past human activities served as the guiding principle of the assessment. Significance of archaeological deposits was based on the diversity and quantity of biological and cultural remains generated.

Greater significance was attributed to archaeological deposits with cultural traces such as stone artefacts and pottery, and biological remains such as mammal, bird and reptile bones than was the case where the remains consisted of marine shell alone.

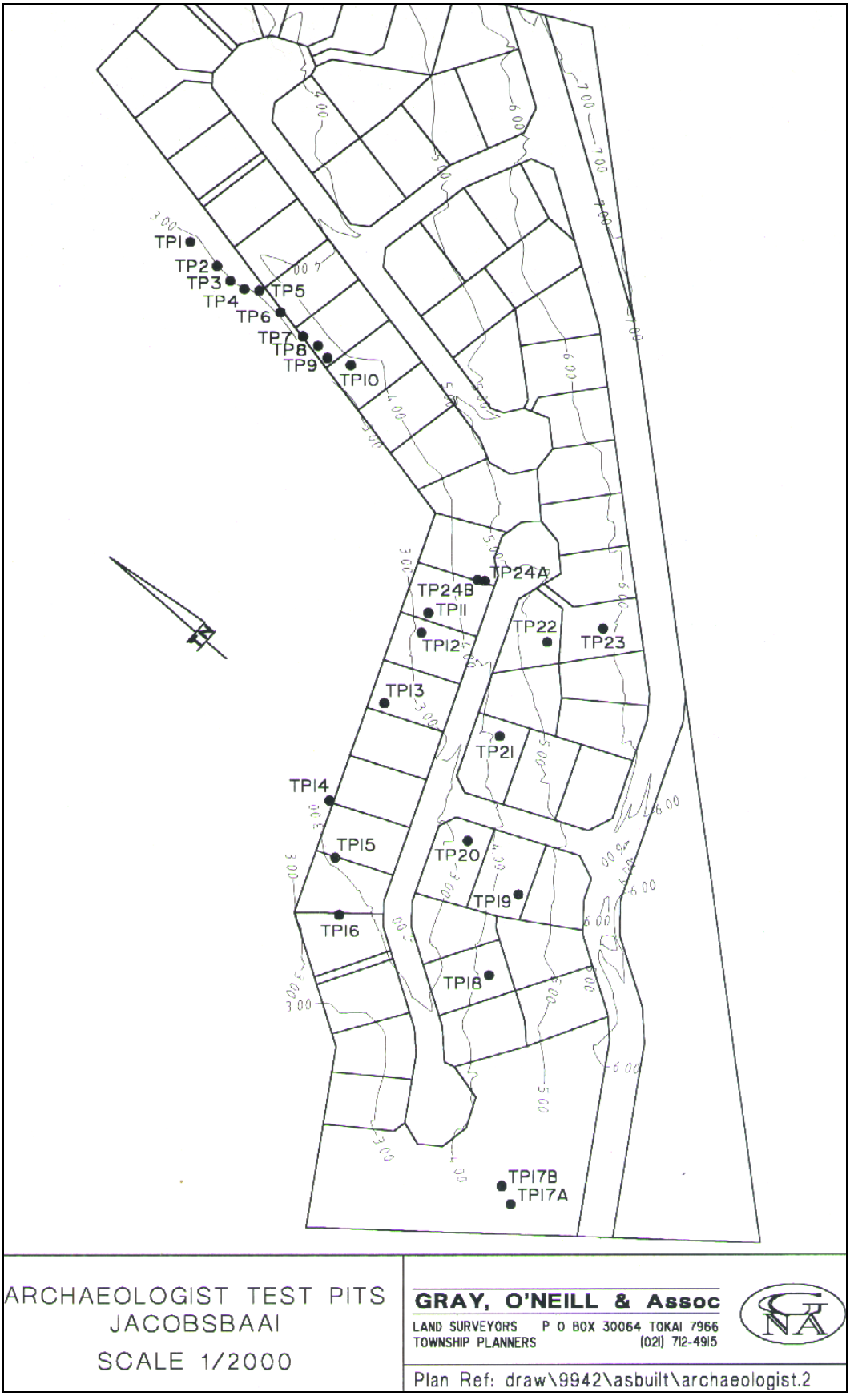

Figure 5. Location of test pits.

3. THE AFFECTED HERITAGE RESOURCES

3.1 General

Archaeological heritage remains in the form of surface scatters of shellfish and occasional stone artefacts are visible in the seaward side of Erf 85 Jacobsbaai. This is despite the disturbance and damage of archaeological heritage remains already caused by the current development.

During an archaeological survey of the Jacobsbaai/Mauritzbaai shoreline, Parkington and Poggenpoel (1987:4) described the Mauritzbaai area as:

> `…being a very extensive and still largely undisturbed shell midden both south of the deepest penetration of the bay. The shell is very dense and outcrops over an area more than 100m by about 20m in a wide arc some 80m from the sandy beach. Depth of midden is difficult to gauge but may be up to a metre, and the contents are very definitely limpet-dominated with few whelks or mussels. There are granite cobbles, probably used as artefacts, animal bones and a few stone tools in association, but no potsherds…'

Parkington and Poggenpoel (1987:13) recommended that:

> `…there should be no further destruction of these (sites) until excavations by a professional archaeologist have extracted the information they contain. (We) therefore recommend most strongly that the opportunity be afforded to archaeologists to carry out investigations into the sites **before any earthmoving or landscaping begins**' (my emphasis).

Archaeological shovel testing has established that the most prominent archaeological feature in Erf 85 Jacobsbaai is a compacted shell midden in the central/southern portion of the site, and exposed in Test Pits 22 and 24. Shell midden material in this area had already been exposed and later destroyed during the construction of an access road and excavation for some of the bulk services (refer to Figures 2 & 3).

Shovel testing in this area subsequently revealed a 15-20 cm thick layer of archaeological deposits characterised by dense shell dominated by limpets, with moderate bone (both terrestrial and marine) and stone artefacts, some 40cm below the surface. Most of the fauna consists of tortoise, but also bird, fish, crayfish and possibly seal and antelope. Cultural evidence comprises mainly a small quantity of flaked stone, and manuports. Given their relatively close proximity to each other (either side of the access road, and not more than 15-20 m apart), Test Pits 22 and 24 most likely represent the remains of a single site.

Archaeological deposits are much more modest elsewhere on the site. A thin, discontinuous layer (not more than 3-5 cm thick) of shell, with some bone and a few stone artefacts, were generated from Test Pits 05, 06, 07 and 08. However, given their close proximity to each other (each Test Pit is not more than 5-10 m apart), they most probably represent the remains of a single site. Modest shellfish samples, some terrestrial fauna (mostly tortoise) and a possible shell awl were also generated from Test Pit 17. Interestingly, the presence of pottery was revealed only from Test Pits 05 and 17.

Elsewhere on the site, despite relatively extensive shovel testing, the deposits are poor in both molluscan and non-molluscan faunal content.

3.2 Description of heritage resources

Test Pit 01	
Stratigraphy	
0.0-0.70m	Very loose, highly weathered granite and quartzite beach deposit with rootlets, water worn shell and occasional large quartzite beach cobbles, essentially sterile.
0.70m	Thick layer of beach cobbles, probably mid-Holocene beach. Sterile
Biological & cultural evidence	
0.0-0.70m	Small sample of shell dominated by limpet species (genus Patella), with a few Periwinkles (Diloma sinensis), Whelk, Ribbed Mussel (Aulacomya ater) and Barnacle. No cultural material present, but two pieces of unidentified bone collected.

Test Pit 02	
Stratigraphy	
0.0-0.90m	Very loose, highly weathered granite and quartzite beach deposit with rootlets, water worn shell and small pebbles with large quartzite beach cobbles at depth, essentially sterile.
Biological & cultural evidence	
0.0-0.90m	A tiny sample of shell, dominated by limpet fragments (genus Patella). A few fragments of Perlemoen (Haliotis midae) also present. One small piece of bird bone. No cultural material present.

Test Pit 03	
Stratigraphy	
0.0-0.95m	Loose, highly weathered and eroded granite and quartzite beach deposit, with rootlets, water worn shell (Limpet, Barnacle & Perlemoen) and small round pebbles, with occasional large quartzite cobbles at depth, essentially sterile.
Biological & cultural evidence	
0.0-0.95m	Tiny sample of shell dominated by fragments of limpet (genus Patella). Fragment of Perlemoen and a small Turbo sarmaticus also noted. One piece of tortoise (Chersina angulata) bone and one small piece of bird bone also noted. No cultural material present.

Test Pit 04	
Stratigraphy	
0.0-0.85m	Loose, highly weathered and eroded granite and quartzite beach deposit, with tiny rootlets, water worn shell (Limpets and Barnacles) and small round pebbles. Occasional large round quartzite beach cobbles appear at depth, essentially sterile.
Biological & cultural evidence	
0.0-0.85m	Small sample of shell dominated by mainly fragments of limpets (genus Patella), and a few fragments of Back Mussel (Choromytilus merdionalis). One tortoise bone and one unidentified bone also noted. One single-flaked quartzite beach cobble found.

Test Pit 05	
Stratigraphy	
0.0-0.35m	Light grey coloured deposit with rootlets and fragmented shellfish.
0.35-0.45m	Light grey coloured deposit with fragmented shellfish and some in-situ limpet, but no discernible shell midden layer apparent. Rootlets present.
0.45-0.75m	Deposit is lighter grey, yellowish colour, becoming more sandy and sterile at depth, with some rootlets. Fewer fragments of shell are visible. No whole shell apparent. Large round quartzite beach cobbles appear nearer the base.
0.75-0.80m	Thick layer of quartzite cobbles contained in wet highly weathered quartzite and granitic beach deposit. Small fragments of limpet and barnacle present, including tiny pieces of water worn shell, essentially sterile.
Biological & cultural evidence	
0.35-0.45	Shell sample is dominated by limpet species (genus Patella). Fragments of Perlemoen, Black Mussel, Whelk and Barnacle present. Two pieces of pottery (including one rim sherd). One quartzite stone flake and one calcrete stone flake found. Two small pieces of unidentified bone.
0.50-0.80m	Water worn shell. No cultural material present.

Test Pit 06	
Stratigraphy	
0.0-0.20m	Light grey brown deposit with fragmented shellfish and some large whole limpets. Rootlets present.
0.20-0.42m	Light grey brown deposit, becoming more coarse, and beach-like. Fewer fragments of shell, but some whole limpet present.
0.42-0.50m	Shell midden layer, about 3-5cm thick, dominated by large whole limpets in a light grey coloured gritty and sandy deposit.
0.50-0.75m	White, coarse sandy deposit, with occasional fragments of shell and large round quartzite cobbles near the base, essentially sterile
Biological & cultural evidence	
0.20-0.50m	Shell is overwhelmingly dominated by limpet species (genus Patella). A few fragments of Perlemoen, Black Mussel and Whelk present. One limestone flake. One piece of tortoise bone and one bird bone noted, as well as a few small pieces of unidentified bone.
0.50-0.75m	Fragments of limpet and a few whole limpets (genus Patella) in a matrix of coarse shelly beach deposit; probably displaced. No cultural material present.

Test Pit 07	
Stratigraphy	
0.0-0.10m	Shellfish fragments in a light grey coarse sandy deposit with rootlets.
0.10-0.30m	A few whole limpets and larger limpet fragments in a light grey coloured deposit with rootlets.
0.30-0.70m	Thin (2-3 cm thick), discontinuous shell midden layer in a light grey coloured deposit, dipping down into a lighter white coarse sandy beach deposit, with large quartzite beach cobbles.
0.70-0.85m	Thick layer of large round quartzite beach cobbles in gritty sandy beach deposit, essentially sterile.
Biological & cultural evidence	
0.20-0.70m	Shell is dominated by limpet species (genus Patella). Small fragments of Black Mussel present. Some tortoise, bird, fish and large unidentified bone shaft also noted. No cultural remains found.
0.70-0.85m	Occasional fragments of limpet occur in a coarse sandy deposit. No cultural material present.

Test Pit 08	
Stratigraphy	
0.0-0.35m	Fragments of shell in a dark brown coloured sandy deposit with rootlets.
0.35-0.55m	± 5cm thick layer of limpet dominated midden in dark brown coloured sandy deposit, becoming lighter brown at the base. Rootlets present.
0.55-0.95m	Light grey/whitish coloured coarse sandy beach deposit with round quartzite cobbles, onto a thick layer of beach cobbles. Some shellfish, but probably displaced, essentially sterile.
Biological & cultural evidence	
0.10-0.35m	Shell almost entirely dominated by limpet species (genus Patella). A few Perlemoen and Black Mussel present. One tortoise bone found. No cultural material noted.
0.35-0.55m	Shell species overwhelmingly limpet (genus Patella) with some Black Mussel. Two bird bones noted. No cultural material found.

Test Pit 09	
Stratigraphy	
0.0-0.30m	Dark brown sand with roots, rootlets and bits of shell fragments.
0.30-0.50m	Lighter brown sand with rootlets and larger fragments of shell, and some isolated whole shell.
0.50-0.90m	Yellowish/brown slightly coarse sand, essentially sterile, with occasional quartzite beach cobbles.
0.90-1.0	Beach cobbles in wet, weathered gritty sand.
Biological & cultural evidence	
0.0-0.50m	Shell densities drop dramatically. Shellfish almost 100% limpet species (genus Patella). One tortoise bone noted.

Test Pit 10	
Stratigraphy	
0.0-0.50m	Dark brown sand with roots and rootlets, and shell fragments, merging into loose highly weathered coarse granite beach deposit, with crushed shell.
0.50-1.0m	Loose, unstable light grey coloured coarse beach deposit with weathered and eroded granite particles and water worn and crushed shell, essentially sterile.
Biological & cultural evidence	
0.0-0.1.0m	Shell species overwhelmingly limpets (genus Patella). Some Whelk and a few fragments of Black Mussel noted. One tortoise bone noted. One quartz chunk found.

Test Pit 11	
Stratigraphy	
0.0-0.50m	Dark brown sand with roots, rootlets, and shell fragments, merging into a loose, gritty weathered granite beach deposit, with crushed shell.
0.50-1.00m	Loose, unstable light grey coloured coarse beach deposit with weathered and eroded granite particles and water worn and crushed shell, essentially sterile.
Biological & cultural evidence	
0.0-1.0m	Shell species dominated by limpet fragments and a few whole limpet shell (genus Patella). One tortoise bone noted. No cultural material present.

Test Pit 12	
Stratigraphy	
0.0-0.57m	Dark brown coloured sand with roots and rootlets, and shell fragments, merging into loose, coarse-grained weathered granite beach deposit, with crushed shell.
0.57-0.95m	Loose, unstable, light grey coloured coarse beach deposit with weathered and eroded granite particles and water worn and crushed shell, essentially sterile.
Biological & cultural evidence	
0.0-1.0m	Shell species dominated by limpets (genus Patella). Four tortoise bone and one unidentified bone noted. No cultural material present. Piece of black plastic sheeting noted at 0.35m.

Test Pit 13	
Stratigraphy	
0.0-0.55m	Dark brown coloured sand with roots, rootlets, and shell fragments, merging into loose, coarse-grained weathered granite beach deposit, with crushed and water worn shell, essentially sterile.
0.55-0.90m	Loose, unstable, light grey coloured coarse beach deposit with weathered and eroded granite particles and water worn and crushed shell, essentially sterile.
Biological & cultural evidence	
0.0-0.90m	Shellfish densities very low but species dominated by limpets (genus Patella). One large Perlemoen shell. No cultural material present. No bone noted.

Test Pit 14	
Stratigraphy	
0.0-0.55m	Dark brown coloured sand with roots and rootlets, and shell fragments, merging into loose, highly unstable, coarse-grained weathered granite beach deposit, with crushed shell, essentially sterile.
0.55-0.85m	Loose, unstable, light grey coloured coarse beach deposit with weathered and eroded granite particles and water worn and crushed shell, essentially sterile.
Biological & cultural evidence	
0.0-0.85m	Shellfish densities very low, but shell species dominated by limpets (genus Patella). No cultural material present. No bone noted.

Test Pit 15	
Stratigraphy	
0.0-0.50m	Dark brown coloured sand with roots, rootlets, and shell fragments, merging into loose, unstable, coarse-grained weathered granite beach deposit, with crushed shell, essentially sterile.
0.50-0.80m	Loose, unstable, light grey coloured coarse beach deposit with weathered and eroded granite particles and water worn and crushed shell, essentially sterile.
Biological & cultural evidence	
0.0-0.80m	Shellfish densities very low but shell species dominated by limpets (genus Patella). No cultural material present. No bone noted.

Test Pit 16	
Stratigraphy	
0.0-0.50m	Dark brown coloured sand with roots, rootlets and shell fragments, merging into loose, unstable, coarse-grained weathered granite beach deposit, with crushed shell, essentially sterile.
0.50-0.80m	Loose, unstable, light grey coloured coarse beach deposit with weathered and eroded granite particles and water worn and crushed shell, essentially sterile.
Biological & cultural evidence	
0.0-0.80m	Shellfish densities very low, but shell species dominated by limpets (genus Patella). No cultural material present.

Test Pit 17 A	
Stratigraphy	
0.0-0.50m	Brown sand with tiny rootlets. Crushed shell, and some fragments of in-situ shell.
0.50-1.07m	Light brown/pale yellow dune sand, essentially sterile. Onto hard calcrete base.
Biological & cultural evidence	
0.0-1.0m	Shellfish remains dominated by limpet (genus Patella). One tortoise bone note. One small piece of pottery found.

Test Pit 17 B	
Stratigraphy	
0.0-0.50m	Brown sand with tiny rootlets. Crushed shell, and some fragments of shell in sections. Land snail present.
0.50-1.07m	Light brown/pale yellow dune sand, essentially sterile. Onto hard calcrete base.
Biological & cultural evidence	
0.0-1.0m	Shell species dominated by limpets (genus Patella). One Whelk and one Periwinkle noted. One possible White Mussel (Donax serra) awl. One piece of charcoal.

Test Pit 18	
Stratigraphy	
0.0-0.30m	Soft, loose, light brown coloured sand with roots and rootlets. Crushed shell, and some fragments of shell. Beach cobbles occur.
0.30-0.40m	Soft loose, light brown coloured sand, with a small isolated pocket of large limpets in a gritty sand and shell matrix. Shell possibly displaced by animal burrowing. Cobbles occur. Essentially sterile.
0.40-1.15m	Compact brown sand of unknown depth, essentially sterile. Quartzite beach cobbles occur throughout the excavated sequence.
Biological & cultural evidence	
0.0-0.40m	Shell species dominated by limpets (genus Patella). Some Whelk, Black Mussel, Periwinkle and Ribbed Mussel also noted. Cobbles not utilised and probably beach derived. One tortoise bone and one quartzite chunk noted.

Test Pit 19	
Stratigraphy	
0.0-0.20m	Compact brown coloured sand with roots and rootlets. Fragments of shell present.
0.20-0.70m	Gritty, coarse sandy beach-like deposit with tiny rootlets and crushed shell. Some round quartzite beach cobbles present, essentially sterile.
0.7--1.08m	Crushed shell in weathered granite sandy beach deposit of unknown depth. Some shell fragments present, probably displaced from above. Quartzite beach cobbles occur through the sequence, essentially sterile.
Biological & cultural evidence	
0.0-0.70m	Shell species dominated by limpets (genus Patella). Quartzite cobbles not utilised and probably beach derived. No cultural remains present.

Test Pit 20	
Stratigraphy	
0.0-0.40m	Brown sand with very small fragments of shell and rootlets. Occasional quartzite cobbles present.
0.40-1.22m	Brown sand with rootlets of unknown depth, seemingly sterile. Relatively large numbers of quartzite cobbles present, essentially sterile.
Biological & cultural evidence	
0.0-0.40m	Shell species dominated by limpets (genus Patella). Cobbles not utilised and probably beach derived. No cultural remains present.

Test Pit 21	
Stratigraphy	
0.0-0.22m	Compact brown sand with roots.
0.22-0.60m	Dark humic sand with rootlets and crushed/weathered granite particles, and a few fragments of shell and some whole shell. Relatively large numbers of quartzite beach cobbles, essentially sterile.
0.60-1.0m	Wet, gritty, weathered granite and quartzite beach deposit of unknown depth. Large quartzite beach cobbles occur through the sequence, essentially sterile.
Biological & cultural evidence	
0.0-0.60m	Shell species dominated by limpet (genus Patella). Cobbles probably beach derived. No cultural remains present.

Test Pit 22 (see figure 6)	
Stratigraphy	
0.0-0.30m	Brown sand with roots and small fragments of shell.
0.30-0.50m	Thick lens of compact shell midden in brown sand, thicker toward the north, and thinning out in the south
0.50-1.10m	Lighter brown sand to unknown depth, seemingly sterile
Biological & cultural evidence	
0.0-0.50m	Shell species overwhelmingly dominated by limpets (genus Patella). Some fragments of Black Mussel, a few Periwinkles, Whelk and one Perlemoen fragment noted. Stone artefacts noted, including 7 quartzite flakes, 1 quartz flake, 1 utilised silcrete flake, 5 quartzite chunks/split cobbles, 1 quartzite hammerstone, 2 quartzite anvils and 7 quartzite manuports. In addition, 1 piece of ostrich eggshell found. Relatively large sample of bone collected, consisting mostly of tortoise, 1 crayfish (Jasus lalandi) mandible, bird, fish and possibly antelope and seal (Arctocephalus pusillus). Two pieces of charcoal found.
0.50-1.10m	Fragments of shell (genus Patella) probably displaced. No cultural remains found.

Figure 6. Test Pit 22.

Test Pit 23	
Stratigraphy	
0.0-0.80m	Brown sand with rootlets and a few small fragments of shell, essentially sterile.
Biological & cultural evidence	
0.0-0.80m	Two large whole limpets (genus Patella) recovered. No cultural remains found.

Test Pit 24 A (see Figure 7)	
Stratigraphy	
0.0-0.30m	Brown sand with roots and very small fragments of shell.
0.30-0.45m	Thick lens of compact shell midden in brown sand, substantial in the north of the square, and thinning out considerably in the south.
0.45-1.10m	Lighter brown sand to unknown depth, seemingly sterile
Biological & cultural evidence	
0.0-0.30m	Shell species dominated by limpet (genus Patella), with a few Whelk and Black Mussel present. One tortoise bone noted. Three manuports found.
0.30-0.50m	Shellfish species overwhelmingly dominated by limpets (genus Patella). Some Whelk, Black Mussel, Ribbed Mussel and Periwinkle also present. Three tortoise bone and one unidentified bone noted. Two quartzite flakes, one quartzite hammerstone, and 10 quartzite manuports found.
0.50-1.10m	Fragments of limpet (genus Patella), but probably displaced from above. No cultural remains found. One tortoise bone and three small pieces of unidentified bone found.

Test Pit 24 B	
Stratigraphy	
0.0-0.30m	Brown sand with roots and very small fragments of shell.
0.30-0.55m	Thin lens of compact shell midden in brown sand.
0.50-1.10m	Lighter brown sand to unknown depth, seemingly sterile
Biological & cultural evidence	
0.0-0.30m	Shellfish dominated by limpet (genus Patella). Three pieces of tortoise bound found. Two quartzite manuports noted.
0.30-0.50m	Shell midden dominated by large limpet (genus Patella). Two pieces of tortoise bone, and one unidentified bone found. One quartzite stone flake.
0.55-1.10m	Fragments of limpet (genus Patella), but probably displaced. One piece of tortoise bone noted. No cultural remains found.

Figure 7. Test Pit 24 A

4. RECOMMENDED ACTIONS

4.1 Overview

Table 1 below presents the proposed mitigation actions in Erf 85 Jacobsbaai for each of the sampled areas.

Area	Mitigation Actions
Test Pit 01	None
Test Pit 02	None
Test Pit 03	None
Test Pit 04	None
Test Pit 05	Systematic excavation
Test Pit 06	Systematic excavation
Test Pit 07	Systematic excavation
Test Pit 08	Systematic excavation
Test Pit 09	None
Test Pit 10	None
Test Pit 11	None
Test Pit 12	None
Test Pit 13	None
Test Pit 14	None
Test Pit 15	None
Test Pit 16	None
Test Pit 17A	Shellfish sampling
Test Pit 17 B	Shellfish sampling
Test Pit 18	None
Test Pit 19	None
Test Pit 20	None
Test Pit 21	None
Test Pit 22	Systematic excavation
Test Pit 23	None
Test Pit 24 A	None
Test Pit 24 B	None

4.2 Areas of archaeological heritage around Test Pits 05, 06, 07 and 08

Archaeological heritage deposits in these areas have potential to yield historical information. The deposits in these areas are shallow (less than 0.60m depth) and contain varying quantities of in-situ shell midden deposits, and small amounts of bone and stone artefacts. Given their close proximity to each other (each Test Pit is not more than 5-10 m apart), Test Pits 05, 06, 07 and 08 most probably represent the remains of a single site, and should be treated as such. Interestingly, this was one of the only areas (Test Pit 05) that revealed the presence of pottery.

Archaeologists undertaking excavations must:

- Establish and document the location of a 1.0 m interval grid system at and around Test Pits 05, 06, 07 and 08;

- Excavate surrounding deposits using this grid as the basic mapping control;

- Where possible, follow the natural stratification during the excavation to remove the full depth of the archaeological sediments over the excavation area;

- Sieve the deposits through a minimum mesh size of 3 mm

- Implement professional excavation procedures in the recovery and treatment of finds, including charcoal;

- Sample shellfish both through depth and across space;

- Make a record of the volume, stratification and nature of the archaeological sediments;

- Maintain thorough written, mapping and photographic records throughout the process; and

- Budget for and acquire a sufficient number of radiocarbon dates to determine the age of the depositional sequence

The following are the recommended extent for excavation, based on an assessment of the depth and richness of the deposits.

Area	**Extent of excavation**
Test Pit 05, 06, 07, 08 (combined)	3 x 4 metres

4.3 Areas of archaeological heritage around Test Pit 22

Archaeological heritage deposits in these areas have the potential to yield important historical information. The deposits in these areas are relatively shallow (less than 0.50m depth) and contain significant layers of compact in-situ shell midden deposits and relatively modest amounts of bone (mainly terrestrial) and stone artefacts.

It is important to note that shellfish densities in Test Pit 24 B are quantitatively less than those that appear in Test Pit 24 A. Test Pits 24 A and 24 B are not more than 2-3m apart. Conversely, the archaeological shellfish deposits in Test Pit 22 are quantitatively more substantial when compared to those in Test Pits 24 combined. The deposits are also notably richer (both biologically and culturally) in Test Pit 22. Given their relatively close proximity to each other (not more than 15-20 m apart), Test Pits 22 and 24 most likely represent the remains of a single site, probably BCSB 2 described by Parkington and Poggenpoel (1987). It is for this reason that systematic excavations should focus on the richer midden deposits in Test Pit 22.

Archaeologists undertaking the excavations must:

- Establish and document the location of a 1.0 m interval grid system at Test Pit 22;

- Excavate deposits using this grid as the basic mapping control;

- Where possible, follow the natural stratification during the excavation to remove the full depth of the archaeological sediments over the excavation area;

- Sieve the deposits through a minimum mesh size of 3 mm

- Implement professional excavation procedures in the recovery and treatment of finds, including charcoal;

- Sample shellfish both through depth and across space;

- Make a record of the volume, stratification and nature of the archaeological sediments;

- Maintain thorough written, mapping and photographic records throughout the process; and

- Budget for and acquire a sufficient number of radiocarbon dates to determine the age of the depositional sequence

The following are the recommended extent for excavation, based on an assessment of the depth and richness of the deposits.

Area	**Extent of excavation**
Test Pit 22	5 x 4 metres

4.4 Areas of archaeological heritage around Test Pits 17A and 17B

Archaeological heritage deposits in these areas have potential to yield relevant historical information. The deposits are relatively shallow (0.50m depth) and do not appear to contain cultural and biological remains in high densities. Site location (close to some granite outcroppings), the presence of pottery and a possible White Mussel awl may, however, suggest different subsistence and settlement activities (possibly time-related) than those revealed from the other Test Pits. Sampling of the shellfish remains in the area of Test Pit 17 should provide results relative to the information potential of these deposits.

Archaeologists undertaking shellfish sampling must:

- Dig spade trenches of at least 3m length into the middens to the greatest depth of the deposits;

- Make a formal record of the stratification and nature of the sediments revealed in the profiles;

- Identify, where possible, appropriate sampling points of spatially separated samples;

- Endeavour, where possible, to follow the natural stratification in taking the individual samples, taking care to avoid animal burrows if present, and fulfilling the requirements of adequate size for each sample;

- Note the volume the deposit in each sample and sieve the deposits through a minimum mesh size of 3 mm (and note the implemented size); and

- Maintain thorough written and photographic records throughout the process.

5. CONCLUSIONS

Preparation of Erf 85 Jacobsbaai for development has already impacted negatively on archaeological heritage remains. Archaeological shovel testing has determined that there are two or three areas on the site where important below ground archaeological deposits occur. These are the areas around Test Pits 05-08 in the north-western portion of the site, the area around Test Pit 17 in the south-western portion, and the large concentration of shell midden deposit in the area around Test Pits 22 and 24 in the south/central portion of the site. Most of the remains comprise shellfish but moderate quantities of bone, stone flakes, ostrich eggshell and pottery occur in some of the deposit

These areas have considerable potential to yield important historical information.

In summary, the following mitigation measures are recommended:

- Areas around Test Pits 05, 06, 07, 08 and 22 require implementation of systematic excavation of a size detailed in this report.

- Areas around Test Pit 17 A and B require sampling of the shellfish remains in the manner detailed in this report.

6. ACKNOWLEDGEMENTS

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