PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT PROPOSED SEWERAGE SCHEME FOR STRUISBAAI & CAPE AGULHAS

Prepared for

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Executive summary

EnviroAfrica, on behalf of Cape Agulhas Municipality requested that the Agency for Cultural Resource Management conduct a Phase 1 Archaeological Impact Assessment for a proposed new waterborne sewage system for the holiday towns of Struisbaai and Cape Agulhas in the southern Cape.

The proposed new sewage scheme will include the following infrastructure: an extension and/or upgrade of the existing sewage treatment works at Struisbaai; a sewage reticulation system for both Struisbaai and Agulhas; various (n = 10) zone collection pump stations along the beach front; two bulk pump stations (transferring sewage from collection pump stations to the treatment works); bulk pipelines (for transport of sewage between pump stations and the proposed treatment works); and a Return Effluent Scheme for irrigation for the planned new golf course development in Cape Agulhas.

The aim of the study is to locate and map archaeological heritage sites/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.

A Notification of Intent to Develop (NID) checklist has been completed by the archaeologist and submitted to Heritage Western Cape (Belcom) for comment.

The following findings were made:

- Dispersed scatters of shell midden deposits were documented along the beach front between Struisbaai and Cape Agulhas

- A historic water drinking trough (at Hangnes Outspan) was documented at/very close to Pump Station 3 on the coast in Cape Agulhas

The following recommendations are made:

- Ideally, the proposed bulk pipeline should be located within the road reserve (along the beach front) between Struisbaai and Cape Agulhas so as not to impact negatively on any potentially important shell midden deposits.

Failing that;

- Vegetation clearing operations and excavations for the bulk pipeline (along the beach front/Marine Drive) must be monitored by a professional archaeologist during the Construction Phase of the project. If any important shell midden deposits are exposed or uncovered, some sampling and dating of deposits may be required.

- The historic water drinking trough at Hangnes Outspan (Pump Station 3) on the coast in Cape Agulhas must not be disturbed or damaged in any way. The proposed pump station must be placed well away from this historic feature.

- A specialist palaeontologist must be appointed to inspect and examine excavations and exposures for any possible vertebrate fossils (bones) during the construction phase of the project. This is particularly important where excavations intersect known limestone deposits located further inland.

- Should any unmarked human remains be disturbed, exposed or uncovered during excavations and earthworks, these should immediately be reported to the archaeologist, or the South African Heritage Resources Agency (Dr A. Jerardino @ 021 462 4502).

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1. INTRODUCTION

1.1 Background and brief

EnviroAfrica, on behalf of Cape Agulhas Municipality requested that the Agency for Cultural Resource Management conduct a Phase 1 Archaeological Impact Assessment for a proposed new waterborne sewage system for the holiday towns of Struisbaai and Cape Agulhas. At present all properties in these towns are serviced by either a septic tank and "French drain" or a conservancy tank system.

The proposed sewage scheme entails the following elements: an extension and/or upgrade of the existing sewage treatment works at Struisbaai; a sewage reticulation system for both Struisbaai and Agulhas; various (n = 10) zone collection pump stations along the beach front; two bulk pump stations (transferring sewage from collection pump stations to the treatment works); bulk pipelines (for transport of sewage between pump stations and the proposed treatment works); and a Return Effluent Scheme for irrigation for the planned new golf course development in Cape Agulhas.

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A Notification of Intent to Develop (NID) checklist has been completed by the archaeologist and submitted to Heritage Western Cape (Belcom) for comment.

2. TERMS OF REFERENCE

The terms of reference for the archaeological study were:

- Identify and map heritage resources affected by the proposed development;
- Determine the importance of heritage resources affected by the proposed development;
- Determine and asses the potential impacts of the proposed project on the heritage resources, and
- Recommend mitigation measures to minimise impacts associated with the proposed project.

3. THE STUDY AREA

A locality map is illustrated in Figure 1.

The study area is located in Struisbaai and Cape Agulhas on the southern Cape coast.

A series of aerial photographs indicating the proposed pipeline route and associated project infrastructure is illustrated in Figures 2-8.

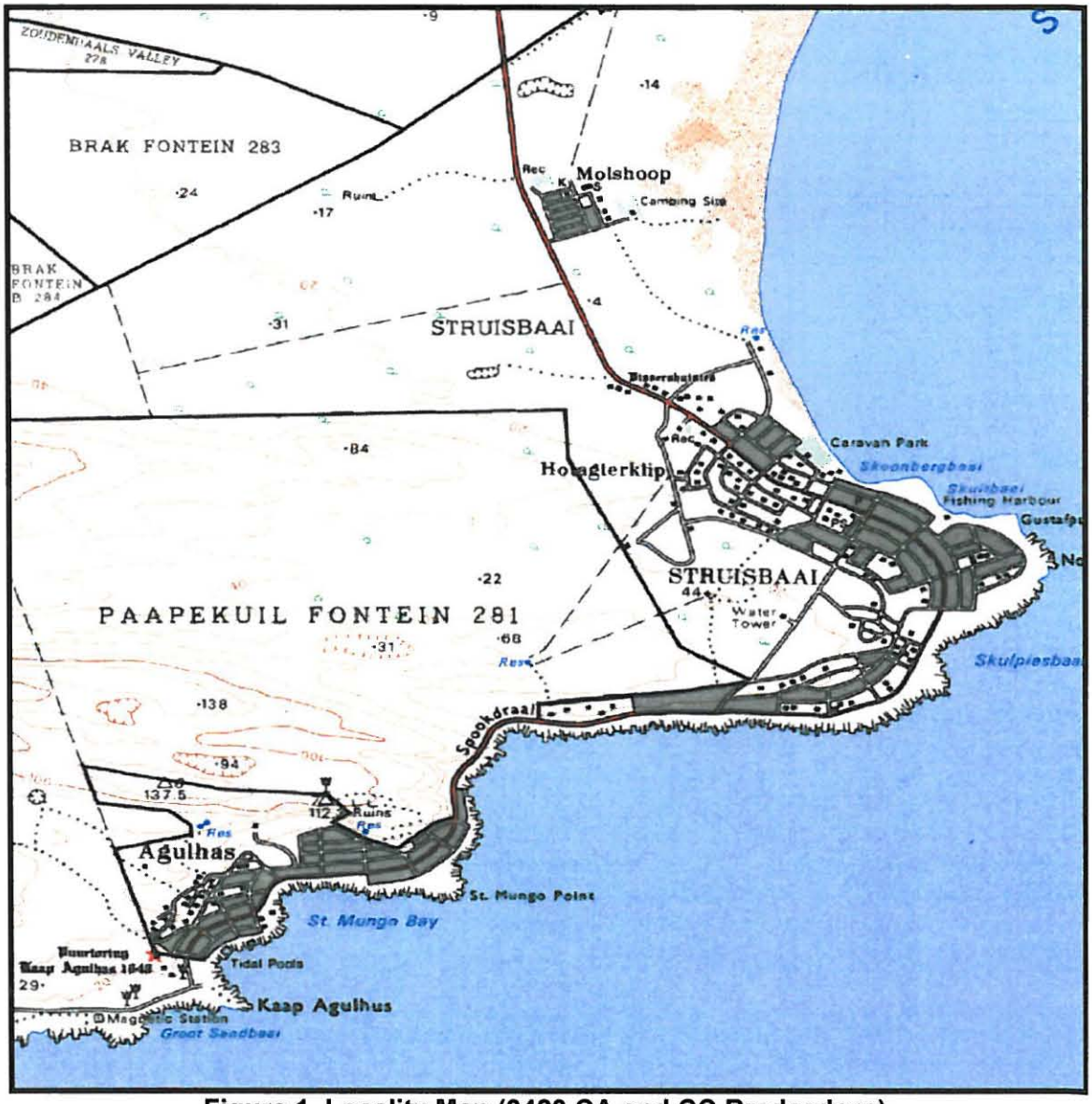

Figure 1. Locality Map (3420 CA and CC Bredasdorp)

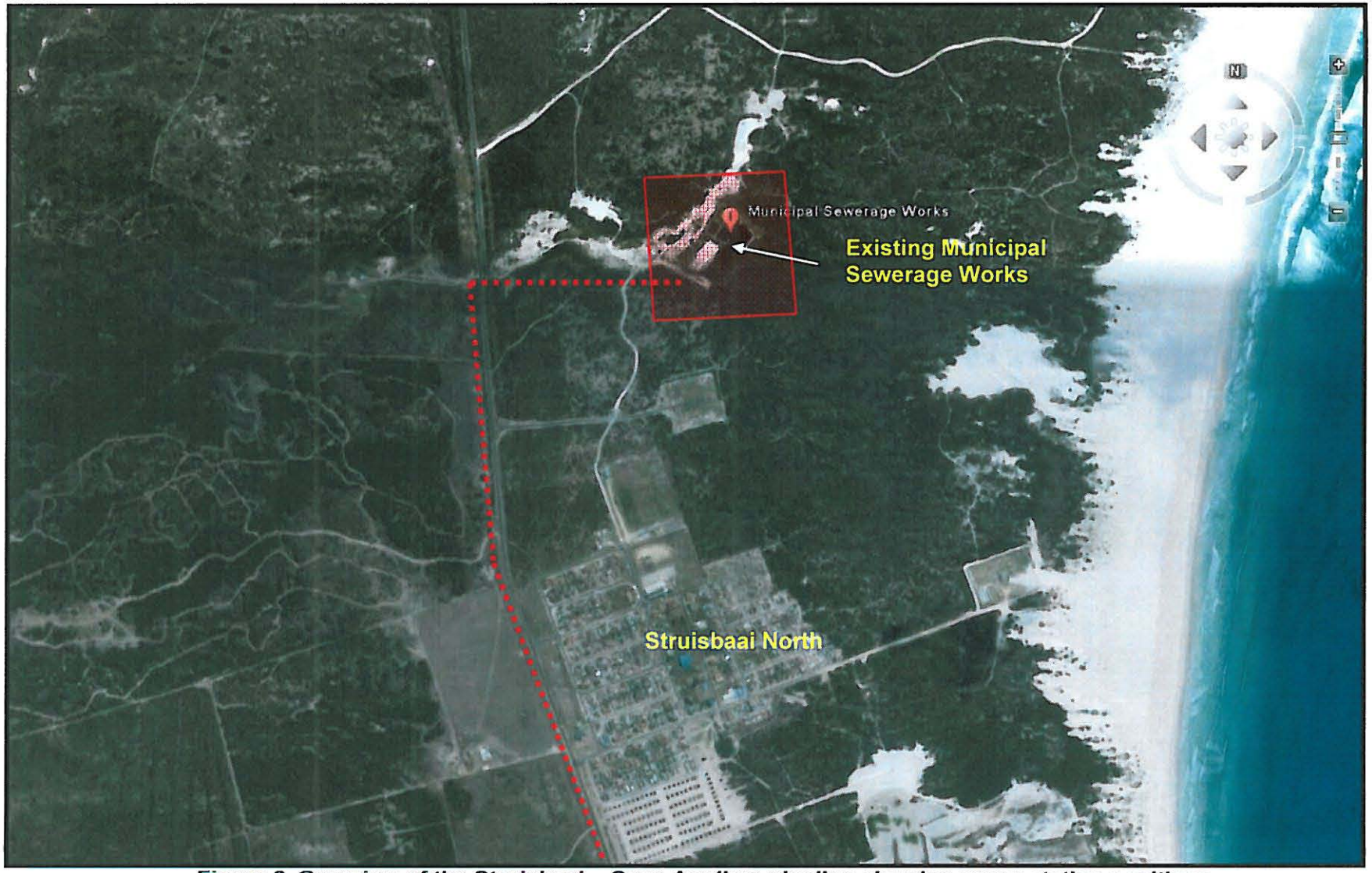

Figure 2. Overview of the Struisbaai – Cape Agulhas pipeline showing pump station positions

Figure 3. Overview of the Struisbaai – Cape Agulhas pipeline showing pump station positions

Figure 4. Overview of the Struisbaai – Cape Agulhas pipeline showing pump station positions

Figure 5. Overview of the Struisbaai – Cape Agulhas pipeline showing pump station positions

Figure 6. Overview of the Struisbaai – Cape Agulhas pipeline showing pump station positions

Figure 7. Overview of the Struisbaai – Cape Agulhas pipeline showing pump station positions

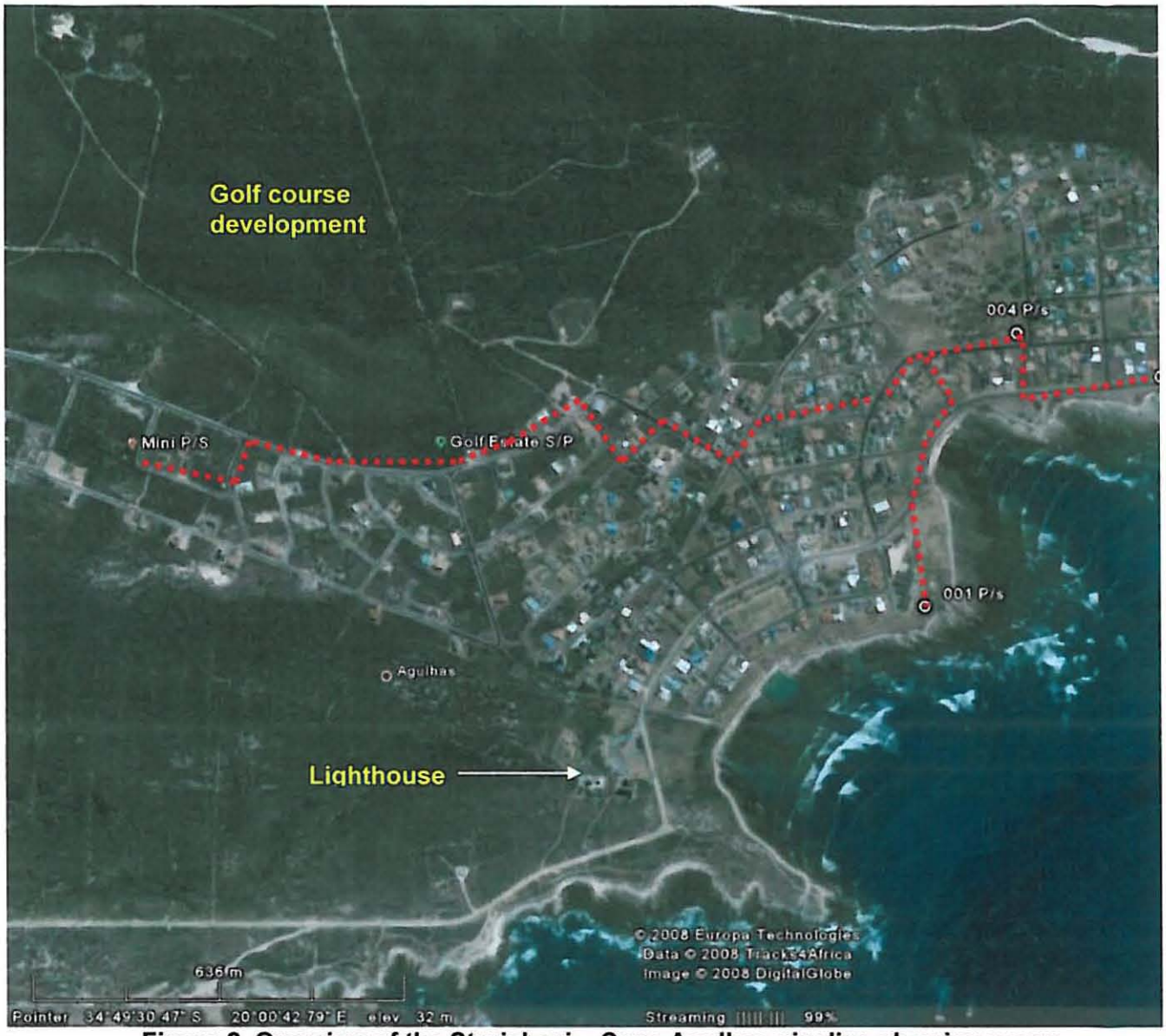

Figure 8. Overview of the Struisbaai – Cape Agulhas pipeline showing pump station positions

4. APPROACH TO THE STUDY

4.1 Method of survey

The approach followed in the archaeological study entailed a survey and assessment of the proposed pipeline route, the proposed (existing) waste water treatment site at Struisbaai, and each of the proposed pump station locations.

The site visit and assessment took place on the 21st May, 2008.

Archaeological sites were recorded using a Garmin Geko 201 GPS unit set on map datum wgs 84. A desk-top study was also undertaken

4.2 Constraints and limitations

There were no major constraints or limitations associated with the study, although there are sections along the beach front where the coastal vegetation is quite thick, resulting in poor archaeological visibility.

4.3 Identification of potential risks

- Potentially important shell midden deposits may be exposed during bulk excavations along the beach front between Struisbaai and Cape Agulhas.

- Important vertebrate fossils (bones) may possibly be exposed or uncovered should bulk excavations penetrate known limestone sediments inland from the coast.

- Unmarked human burials may be exposed or uncovered during excavations for the bulk pipeline along the beach front between Struisbaai and Cape Agulhas.

4.4 Results of the desk top study

Archaeological research has shown that people have occupied the Agulhas area for well over a million years. Middle Stone Age (MSA) and Early Stone Age (ESA) tools occur locally, while large numbers of mainly Later Stone Age (LSA) sites have been recorded mainly in the Cape Agulhas area (Hall 1984; Kaplan 1993, 1997, 1998a, b, 1999a, b, 2006, 2007; Nilssen 2004). Archaeological sites have been described at Die Walle, Hoek se Baai, Gruis se Baai, Oubaai, Bloubaai, Vlei se Bank, Rasperpunt and Cape Agulhas. Archaeological sites in Cape Agulhas are not only confined to the shoreline area, however. Large numbers of sites occur in the inland dune fields, as well as above the limestone cliffs overlooking the sea (Hall 1984, 1998a). Rare shelters/overhangs also occur in some of the limestone cliffs (Nilssen 2004).

Less well-known is the archaeology of Struisbaai, but sites have been documented along the beach and on exposed limestone/calcrete beds north of Langezandt (Hart & Halkett 1995; Kaplan 2003b), while colonial period middens associated with the historic settlement at Hotagterklip alongside the main road in Struisbaai have also been documented (Hart & Halkett 1995). Research has shown that archaeological sites are fairly thinly dispersed along long sandy beaches, which characterises the shoreline area north of Langezandt (Kaplan 1993, 2001).

Well-preserved *visvywers* (tidal fish traps) also occur at Cape Agulhas, Rasperpunt and Suiderstrand (Kaplan 1993, 1998a). The tidal fish traps were most likely built by pre-colonial LSA people - possibly the same people responsible for the accumulation of shell middens that occur along the rocky shoreline (Avery 1974, 1976; Goodwin 1946).

5. FINDINGS

Site 1 (S 34° 48 14.3 E 20° 03 49.4)

Site 1 comprises a thin scatter of shellfish in an open patch of sand behind the coastal dunes and alongside the beach road in Struisbaai (Figure 9 and refer to Figure 4). The shellfish comprises mainly fragments of Turbo sarmaticus, several, Operculum and some limpets. One quartz flake and one quartzite flake was counted.

The archaeological remains have been rated as having low local significance.

Figure 9. Site 1 view facing west

Site 2 (S 34° 48 24.7 E 20° 03 30.6)

Several, small scatters of shellfish were documented in open patches of sand, surrounded by thick coastal vegetation alongside the beach road in Struisbaai (Figures 10 and 11& refer to Figure 4). The shellfish is dominated by fragments of Turbo sarmaticus, some Operculum, periwinkle and a few fragments of limpets. Several quartz flakes, chips, one chunk, a small round silcrete core and relatively large numbers of small round quartzite pebbles were counted. There are areas where the vegetation has been cut back, but it has slowly recovered.

The archaeological remains have been rated as having low local significance

Figure 10. Site 2 view facing west

Figure 11. Site 2 view facing west

Site 3 (S 34° 48 40.0 E 20° 03 20.5)

A dispersed scatter of shellfish was documented in an open patch of wind blown sand alongside Marine Drive in Struisbaai (Figure 12 and refer to Figure 4). The shellfish comprises mainly Turbo sarmaticus including some large, whole shell, a few Operculum and a few fragments of limpets (Scutellastra argenvillei), Perlemoen (Haliotis), periwinkle and barnacle. Several quartzite cobbles, one quartzite flake and one quartz chunk were also counted.

The archaeological remains have been rated as having low local significance

Figure 12. Site 3 view facing west.

Site 4 (S 34° 48 40.0 E 20° 03 20.5)

Shellfish remains and large numbers of rounded quartzite pebbles occur on a slightly elevated, well vegetated dune ridge alongside Marine Drive, between Myburgh Street and Stanley Street in Struisbaai (Figures 13 and 14 and refer to Figure 5). The shellfish is dominated by large numbers of limpets (S. argenvillei), including large whole shell, whelk and periwinkle. Fewer Turbo sarmaticus are visible. It is unclear whether this is an archaeological deposit, or the remains of a raised beach. No cultural remains were found.

The archaeological remains have been rated as having low local significance

Figure 13. Site 4 view facing west

Figure 14. Site 4 view facing west

Site 5 (S 33° 49 07.3 E 20° 01 39.6)

Site 5 comprises a well preserved limestone and lime washed water drinking trough situated a few metres from the rocky shoreline in Cape Agulhas, very close to proposed Pump Station 3 (Figures 15 and 16 and refer to Figures 6 and 7). A plaque on a concrete column stands alongside the water feature alerting passers by to its historical significance. The historic feature is situated on what was then known as the Farm Zoetendals Vallei, which formerly stretched all the way down to the coast. Flocks of sheep wandered around the area and the water trough was used to water the sheep. A natural spring, now overgrown with Rooikranz, was used to feed the trough. Later, transport riders and holiday makers stopped to water their livestock, at the stopover known as Hangnes Outspan.

The historical archaeological remains have been rated as having high local significance.

Figure 15. Site 5. Hangnes Outspan

Figure 16. Site 5. Hangnes Outspan. Arrow indicates location of the spring

Except for the occasional fragment or two of shellfish and stone chunk or flake, no other coherent archaeological remains were documented during the study.

Apart from Pump Stations 1, 3, 6, 11, 12 and 13, the remaining Pump Station sites are all set back from the immediate shoreline, in an area dominated by limestone/calcrete deposits.

No archaeological remains were documented at the existing sewerage works in Struisbaai (Kaplan 2001).

Sections of the pipeline route alongside the beach front between Struisbaai and Cape Agulhas (between Pump Station 12 and Pump Station 11 – refer to Figures 4 & 5) do, however pass through extremely thick coastal vegetation, where, archaeological visibility is poor (refer to Figures 17-21). Vegetation clearing operations along the beach front may well expose additional shell middens, especially since the proposed route is aligned alongside a wave cut and rocky shoreline that are known to support archaeological sites (Kaplan 1993).

Figure 17. View of pipeline route facing west

Figure 18. View of pipeline route facing west

Figure 19. View of pipeline route facing west

Figure 20. View of pipeline route facing west

Figure 21. View of pipeline route facing west

6. IMPACT STATEMENT

The proposed bulk pipeline may impact negatively on potentially important archaeological remains, alongside the beach front between Struisbaai and Cape Agulhas. These include the sites known as Site 1, Site 2, Site 3 and Site 4 (refer to Figures 4 and 5).

The proposed route may impact negatively on the historic water drinking trough (Hangnes Outspan) near Pump Station 3 (Site 5 and refer to Figures 6/7).

Vertebrate fossils may also be exposed or uncovered should excavations penetrate underlying limestone deposits that are situated inland from the shoreline.

Excavations for the laying of the pipeline may uncover or expose unmarked human burials.

7. RECOMMENDATIONS

With regard to the proposed bulk sewerage scheme for Struisbaai and Cape Agulhas, the following recommendations are made:

- Ideally, the proposed bulk pipeline should be located within the road reserve (along the beach front) between Struisbaai and Cape Agulhas so as not to impact negatively on any potentially important shell midden deposits.

Failing that;

- Vegetation clearing operations and excavations for the bulk pipeline (along the beach front/Marine Drive) must be monitored by a professional archaeologist during the Construction Phase of the project. If any important shell midden deposits are exposed or uncovered, some sampling and dating of deposits may be required.

- The historic drinking trough at Hangnes Outspan (Pump Station 3) on the coast in Cape Agulhas must not be disturbed or damaged in any way. The proposed pump station must be placed well away from this historic feature.

- A specialist palaeontologist must be appointed to inspect and examine excavations and exposures for any possible vertebrate fossils (bones) during the construction phase of the project. This is particularly important where excavations intersect known limestone deposits located further inland.

- Should any unmarked human remains be disturbed, exposed or uncovered during excavations and earthworks, these should immediately be reported to the archaeologist, or the South African Heritage Resources Agency (Dr A. Jerardino @ 021 462 4502).

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