

**ARCHAEOLOGICAL IMPACT ASSESSMENT: PROPOSED
EXPANSION OF THE HIK ABALONE FARM ON ERF 248 AND
REMAINDER OF ERF 243, NEW HARBOUR, HERMANUS, WESTERN
CAPE**

Assessment conducted under Section 38 (1) of the National Heritage Resources Act
No 25 of 1999

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EXECUTIVE SUMMARY

The Archaeology Contracts Office at the University of Cape Town was appointed by HIK Abalone Farm to conduct an Archaeological Impact Assessment on Erf 248 and remainder of Erf 243, in the New Harbour Industrial Area of Hermanus. The present supply of fresh sea water is not sufficient for the development of the abalone farm and HIK want to construct a new intake sump and sea water pump station, 1387m² in extent, to ensure future growth. In addition, it is proposed to construct four rising mains which will follow a servitude 5m wide across adjoining land owned by Abagold and land rented by Aquafarm Developments.

- A survey of the property on the 13 October 2009, failed to identify any archaeological remains;
- The SAHRA database for shipwrecks was examined. There are no reports of any wrecks off this section of the coast. It is unlikely that the construction of the sump in the rock platform will impact on any unrecorded ships wrecked off the coast;
- A 1m thick layer of fragmented marine shell (shingle) immediately above the rock platform appears to be a remnant of a previous (mid-Holocene) raised beach level. The shingle will probably be impacted by the construction of the pipeline. Since this feature may have palaeontological significance, Dr J Pether was approached for comment. Very few of these raised beach terraces have been sampled in South Africa. However, they have the potential to be informative.

It is unlikely that the entire section of shell will be destroyed by the pipeline and a portion may be preserved. However, in view of the significant impact which development has already had on this section of the coast, it is likely that this remnant raised beach will disappear in the next few years. Dr Pether has suggested that a bulk sample of shell should be collected for analysis. He was of the opinion that a single bucket of shell would be sufficient.

It is recommended that development should be allowed to proceed after the shell sample has been collected.

1. INTRODUCTION

The Archaeology Contracts Office at the University of Cape Town was appointed by HIK Abalone Farm to conduct an Archaeological Impact Assessment on Erf 248 and remainder of Erf 243, in the New Harbour Industrial Area of Hermanus (Figure 1). The proposal is to construct a new intake sump and sea water pump station, 1387m² in extent, for the abalone farm. In addition, it is proposed to construct four rising mains which will follow a servitude 5m wide across adjoining land owned by Abagold and land rented by Aquafarm Developments.

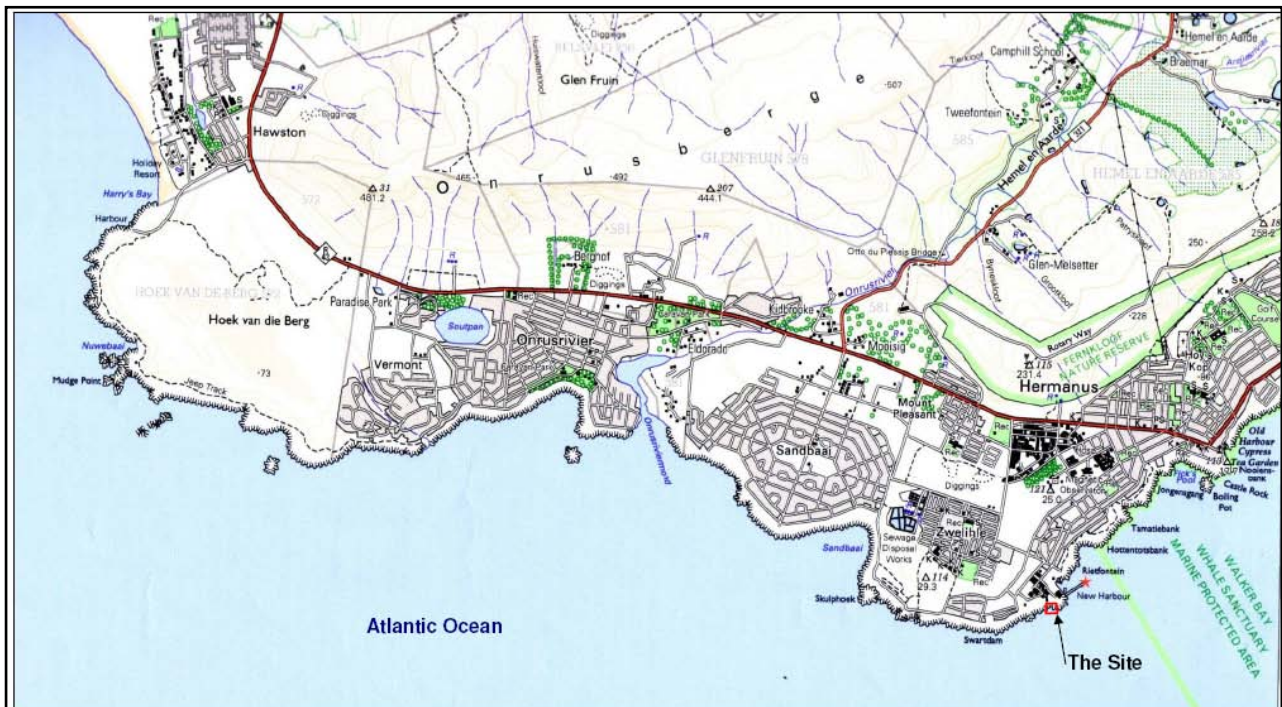


Figure 1: The location of HIK Abalone Farm on Erf 248 and Remainder of Erf 243, Hermanus (1:50 000 Topographical Map 3419AC Hermanus).

2. DEVELOPMENT PROPOSALS

Commercial abalone production requires that fresh sea water is extracted directly from the sea. This is done through pipelines set within a sump area (i.e. an excavated channel in a shelf of rock) on the coast line. Sea water is pumped to a header dam from where the water is gravity-fed through the abalone raceways. Effluent water from the tanks is collected and returned to the sea via channels & pipelines.

During the mid-1990's Abagold (Formerly Hermanus Abalone) established an abalone farm in the New Harbour Industrial area of Hermanus. A sump was created (by Abagold) on the coast line and a pump station was built to pump sea water for abalone culture. In the latter 1990's HIK Abalone Farm was established on Municipal ground on the landward side of Abagold. This existing farm is 2.5ha in extent. Permission was granted for HIK to share Abagold's intake sump, and HIK

constructed a pump house directly adjacent to Abagold's pump house (i.e. within the same existing facility of Abagold).

Over the years both farms have expanded requiring increasing amounts of water. During 2006, Abagold started establishing an additional farm. The existing channel and sump are no longer able to supply sufficient water for all of the farms' requirements. For several days, before and after spring tides, the water level in the sump drops so low around low tide, that several of the pumps run dry. This inconsistent water flow is having a detrimental impact on the growth of the aquaculture and is putting the economic viability of HIK Abalone farm at risk.

The aim of the proposed Seawater Intake Supply System (i.e. new intake sump and sea water pump station) is to ensure the continued supply of fresh sea water for HIK. The proposed development will be 1387m² in extent. In addition four rising mains, each 400mm in diameter (outside diameter) and 340m in length, will rise along a servitude 5m wide across land owned by Abagold (formerly Hermanus Abalone) and land rented by Aquafarm Developments.



Figure 2: The location of the site (in red), the proposed pipeline (in pale blue) and the access road (green).

A number of alternatives were considered including:

2.1 Alternative 1: Enlargement of the existing facility

This would be the obvious first choice, but would be time consuming to construct and technically difficult. It will be impossible to achieve without further severe and extended interruptions to the water flows onto the farms.

2.2 Alternative 2: Offshore seawater intake system

This would entail the construction of four or five suction pipelines secured to the seabed and concrete encased and extending some 150 to 200m offshore into deeper water beyond the surf line with intake cages secured to the sea floor. Experience has shown that any kind of offshore intake will never be operated successfully given the sea conditions along our coastline.

2.3 Alternative 3: Onshore seawater intake system

This is the preferred solution and the following construction activities are proposed:

- The installation of a **new Seawater Intake Supply System** i.e. a **New Sump**. This will involve the excavation of a 3m deep by 3m wide by 20m long “L” shaped inlet and sump in the bedrock to create the through-flow channel for extraction of sea water. This will be done by means of drilling and breaking of the rock with the use of “Nonex” explosives or expansive grout;
- The construction of a **new Seawater Intake Supply System** i.e. a **New Pump House with Pumps**. A small amount of rock will have to be removed to create a level platform. The proposed pump house plan dimensions are approximately 11.2m x 6m overall;
- The installation of a **new Seawater Intake Supply System** i.e. a **New Transformer Room with Power Supply**;
- The installation of a **new Seawater Intake Supply System** i.e. the construction of **New Four Seawater Supply Riser Pipelines** (some 400mm in diameter) to transport fresh seawater from the Seawater Intake Supply System to the Water Storage Reservoir. These pipes will be buried underground;
- The construction of **New Access road** from the Aquafarm gate to the designated area. This will be done using the loose rock in the area and cementing it together with concrete.

3. TERMS OF REFERENCE

An Archaeological Impact Assessment was requested to ensure that the development will not impact on any possible archaeological remains along the coast. The aim of the assessment was to determine:

- Identification of archaeological (prehistoric and colonial) sites through a site visit;
- Rating of significance of archaeological sites on the property;
- Assessment of the impact of development on the archaeology of the property;
- Recommendations for mitigation.

4. LEGISLATION

The National Heritage Resources Act, No 25 of 1999 (Section 38 (1)) makes provision for a compulsory notification of the intent to development when any development exceeding 5000 m² in extent, or any road or linear development exceeding 300m in length is proposed.

The NHRA provides protection for the following categories of heritage resources:

- Landscapes, cultural or natural (Section 3 (3))
- Buildings or structures older than 60 years (Section 34);
- Archaeological Sites, palaeontological material and meteorites (Section 35);
- Burial grounds and graves (Section 36);
- Public monuments and memorials (Section 37);
- Living heritage (defined in the Act as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems and the holistic approach to nature, society and social relationships) (Section 2 (d) (xxi)).

5. BACKGROUND TO THE ARCHAEOLOGY OF THE AREA

There are no published accounts of archaeological research in the Hermanus area but inferences may be drawn from the nearby Pearly Beach area which was surveyed by Graham Avery of the Iziko Museums of Cape Town in the 1970s. He surveyed and excavated a number of open station shell middens in order to derive a systematic, regional understanding of the subsistence strategies of pre-colonial south coast populations (Avery 1974). Sites generally cluster near the rocky stretches of the coast where shellfish are abundant, while no sites were found along the sandy beaches. According to Avery, the shell middens can be divided into three varieties, each characterised by a different predominant species of shellfish which occur at different depths within the intertidal zone. He hypothesised that these differences suggest the employment of different procurement and processing strategies (Avery 1974). It is clear that these coastal sites reveal that the ancestors of both the Khoekhoen herders and hunter gatherer groups accumulated them as part of a cyclic or seasonal system that used both inland and coastal resources.

6. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The site is located directly adjacent to the Atlantic Ocean on a rock shelf situated to the south-west of the existing Seawater Intake Supply System of ABAGOLD and to the east of AQUAFARM. The southern portion of the site comprises a natural rock platform jutting out into the sea.



Plate 1: The blue arrow indicates the rock platform which will be used for the pump station and the new sump while the red arrow indicates the rubble fill used to create an artificial terrace.

The pump house and the new sump will be constructed on the rock platform (Plate 1). The northern section of the site comprises a section of the coastline which has been significantly transformed. A large amount of rubble has been deposited on the northern border to form a level terrace for the development of the abalone facilities belonging to Abagold. This has created an artificial cliff face overlooking the shore (Plate 3). The land between the rock platform and the artificial terrace consists of undulating coastal vegetation which covers the entire surface area, making an examination of the ground impossible (Plate 2).



Plate 2: View of the coastal vegetation in the foreground and the rock platform in the background.

Plate 3: View of the artificial terrace created on the northern border of the site.

7. RESULTS OF SURVEY

The property was visited by Lita Webley on the 13 October 2009. The survey was conducted on foot, and a Garmin GPS unit was used to record sites and track ways.

There were no significant limitations to the survey. It was difficult to examine the coast above the rock platform due to the dense ground cover of coastal vegetation. However, there is no evidence of any archaeological remains along this section of the coast due to the damage caused to the shoreline by commercial abalone production over the last 15 years, and the limitations are therefore not material to this study.



Plate 4: The dense layer of beach shingle which may represent a previous raised beach. The artificial rubble terrace is visible in the background.

There is a 1m dense accumulation of finely fragmented marine shell located just above the rock shelf (Plate 4) and at a height of about 2m above sea level. This was closely examined but it is clearly not archaeological in origins. The shell resembles beach shingle and it was suggested (Halkett pers comm.) that this may represent a previous raised beach level. No bone was identified in this dense accumulation of shingle.

No archaeological remains were recovered along the coast area. The route of the pipeline was examined to ensure that it would not cut through archaeological deposit. However, the area immediately adjacent to the coast has been artificially constructed of builder's rubble and the original soil surface is therefore buried under several metres of brick and cement. It seems unlikely that any remains will be accidentally truncated.



Plate 5: The pipeline will run along this fence, the corner post shows further undercutting of the raised beach. **Plate 6:** The pipeline will run along this concrete wall.

The new access road to the pump house will cross loose rock from the Aquafarm gate (Plate 7). This rock will be cemented together with concrete to form the road. The proposed road will not damage any archaeological remains.



Plate 7: The route followed by the access road.

8. DISCUSSION AND RECOMMENDATIONS

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It is unlikely that the entire section of shell will be destroyed by the pipeline and a portion may be preserved. However, in view of the significant impact which development has already had on this section of the coast, it is likely that this remnant raised beach will disappear in the next few years. Dr Pether has suggested that a bulk sample of shell should be collected for analysis. He recommended a single bucket of shell (i.e. $\frac{1}{4}$ square metre). This sampling does not need to be undertaken by a palaeontologist.

9. REFERENCES

- Avery, G. 1974. Open station shell midden sites and associated features from the Pearly Beach area, South-Western Cape. *South African Archaeological Bulletin* 29:104-114.
- Finnegan, E. 2007. Heritage Statement: Proposed realignment and upgrade for Hermanus CBD Relief Road.