ARCHAEOLOGICAL IMPACT ASSESSMENT: PORT NOLLOTH BORROW PITS, RICHTERSVELD MUNICIPALITY, NORTHERN 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 asked to undertake an Archaeological Impact Assessment for the mining of calcrete at two borrow pits, north of Port Nolloth, in the Northern Cape.

A number of shell middens were recorded on the edge of the pan but only Sites 1 and 4 are significant. Site 1 is highly significant due to its location on the edge of the pan and its high percentage of stone tools made of fine-grained raw materials. The site therefore has the potential to provide important information on the settlement of Namaqualand pre-2000 years ago. Site 4 is of medium to low significance.

The No-Go option was considered. However, the density of sites along the margins of the pan is very low, and it seems pointless to prohibit mining. Also it is important to remember that the public is currently dumping rubbish and building material on the western margins of the pan, and the archaeological sites may be impacted in future by conditions external to the mining.

Sites 1 and 2 fall within the area proposed for Borrow Pit 1 and will be destroyed during bulldozing of the site. *However, it is only Site 1 which is of significance and will need mitigation (i.e. test excavations).*

- The area of densest concentration of shell is quite small and an excavation of 4-6m² may be sufficient to obtain a representative sample of shell.
- A surface collection of the remainder of the stone on the site is also recommended.
- Further, a radiocarbon date on the marine shell should be considered.

It is only Site 5 which falls within the area proposed for Borrow Pit 2. This site, like Site 6 (just outside the boundary), is very ephemeral and neither will need mitigation. However, Site 4, which lies to the west (and outside) the boundary of Borrow Pit 2, is of medium to low significance. It is located between 70m and 120m from the boundary of Pit 2. *It is debatable whether the site is sufficiently far removed from the borders of Pit 2 to be protected from future calcrete mining and possible accidental destruction.*

- If SAHRA recommends mitigation of Site 4, it is proposed that a test pit will be sufficient and this can take place at the same time as mitigation of Site 1.

Finally, it is important to point out that the soft sands overlying the calcrete on the edge of the pan may contain human remains (i.e. prehistoric graves). These may be uncovered during the bull-dozing of the site to extract the calcrete.

- SAHRA needs to be notified immediately if any human remains are uncovered and an archaeologist will have to investigate.

1. INTRODUCTION

The Archaeology Contracts Office at the University of Cape Town was approached by I. van Zyl, Environmental Consultants, to undertake an Archaeological Impact Assessment at two borrow pits, north of Port Nolloth, in the Northern Cape (Figure 1).

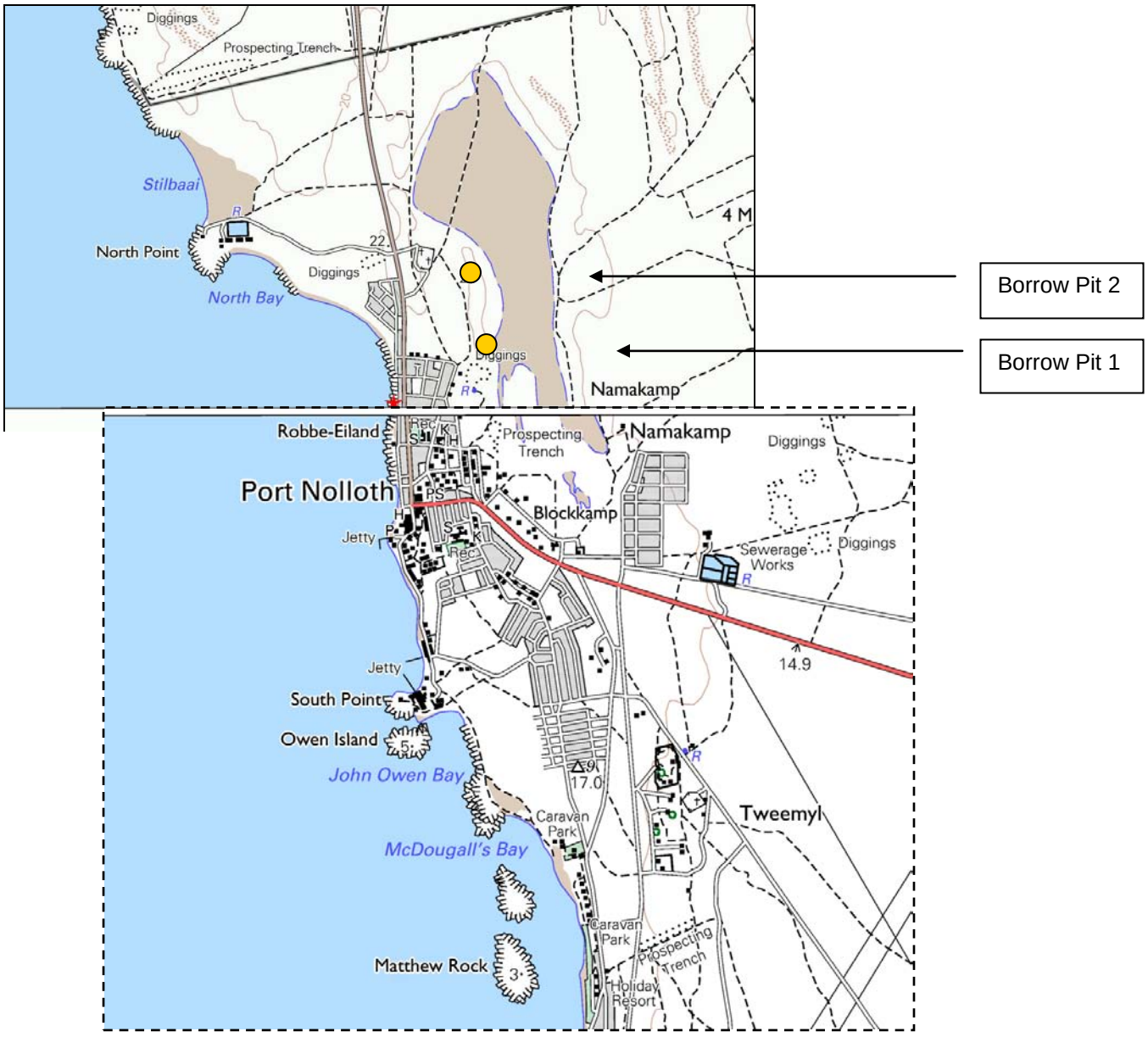


Figure 1: 2916 BA & BB Cliffs and 2916 BD Port Nolloth 1:50 000 Topography Maps (Chief Directorate: Surveys & Mapping, 2nd edition 2003)

2. DESCRIPTION OF DEVELOPMENT

The Richtersveld Municipality intends to apply for two mining permits to excavate calcrete ("clay") for road building purposes. Borrow pit 2 will be 125m² x 120m² (15 000m²) and Borrow pit 1 100m² x 150m² (15 000m²). They are located to the north of the town (Figure 2

at end of report), and on either side of an existing borrow pit. The existing gravel road which runs along the edge of the pan to the current borrow pit will be used for access.

3. 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)).

The size of the two borrow pits means they are affected by Section 38(1), in other words by a "compulsory notification of intent to develop".

4. DESCRIPTION OF THE ENVIRONMENT

The existing and proposed borrow pits are located on the western edge of a large salt pan to the north of Port Nolloth (Figure 3). The pan is located about 1km east of the Atlantic Ocean. Currently (summer) the pan contains a small amount of very salty water and there are salty encrustations around the edges of the pan. After heavy rains the pan can fill up with water but it is not known whether this is palatable. The margins of the pan, consist of soft sandy soil lying over horizontal outcrops of calcrete (the target of the borrow pits) and are slightly elevated, reaching a height of 23m above sea level. These low dunes are covered in short scrubby bush.

The pan has been the focus of considerable disturbance since the establishment of Port Nolloth in 1854. According to Jowell and Folb (2004), as well as Mr de Wet (pers. Comm.), light planes have landed on the salt pan since the 1930s. The pan has also formed the focus of cricket matches and athletics events in the past. Currently, the western margins of the pan have been disturbed through the dumping of builder's rubble close to the location of the proposed Pit 2.

Figure 3: The location of the salt pan to the north and east of Port Nolloth. The borrow pits are located on the western margins of the pan.

Left: The salt pan.

Right: the existing borrow pit.

Left: View of the pan facing east, with the evidence of builders rubbish dumped in the foreground. Right: the western edge of the dune with the sea and the houses of Port Nolloth in the background.

5. ARCHAEOLOGICAL BACKGROUND TO THE AREA

According to Rudner (1968) there are middens near North Point just north of Port Nolloth, while further south at McDougall's Bay there are middens capping the dunes along the northern half of the bay. The middens at McDougall's Bay are reported to have contained Wilton tools while those at North Point contained engraved ostrich eggshell. Rudner (1968) reports on at least 52 clay pots from this area, two being complete. According to Colson (1905) a complete pot was found in a midden in 1899 about 1.6km south of the Port Nolloth jetty. This pot was half-filled with specularite (an iron powder used as decoration), as well as a bone awl and some ostrich eggshell beads. According to Rudner (1968), Laidler collected much material from the middens north and south of Port Nolloth in 1913. He reports: "The shell deposits were hundreds of feet in length and breadth and the implement assemblages homogenous, being of a Wilton type accompanied by ostrich eggshell plaques and pendants, eggshell water bottles, ornamented and plain. Pottery of a 'Hottentot' type occurred mainly on the mounds on which stone implements were scarcest".

Kaplan (1993) in his review of the archaeology of the coastal zone for the Dept of Environmental Affairs, listed 297 open station shell midden sites from the 1:50 000 map sheet for Port Nolloth (2916 BD Port Nolloth). The sites occur at White Point, Wedge Point and Twee Pad. In 2002, Vogelsang and Webley conducted a survey of archaeological sites in the Richtersveld and provided GPS co-ordinates on an open station shell midden at McDougall Bay.

Most recently, a housing development in McDougall's Bay (named KaiKai) resulted in disturbance to numerous shell middens overlooking the Bay. These have been recorded as part of an Archaeological Impact Assessment by David Morris of the McGregor Museum (pers. Com.) and mitigation work is still required.

Archaeological research in Namaqualand has largely concentrated on the Richtersveld and further south in the Kamiesberg area (Webley 1992) because of difficulties of access to the coast. The Archaeology Contracts Office at the University of Cape Town has been involved in archaeological mitigation work in the diamond fields of the Namaqualand coast since 1991. They have conducted extensive surveys of the land owned by De Beers resulting in a database

of 1 349 coastal sites. Dewar (2007) compiled a regional synthesis of the archaeology of the Namaqualand coast based on the excavations of nine of these open sites. These sites, however, are concentrated along the coast from the Buffels River to the Spoeg River and are not located close to Port Nolloth.

The Archaeology Contracts Office was involved, during the mid-1990's, in the rescue excavations of a small shelter named Boegoeberg 2, about 20km south of the Orange River and 60km north of Port Nolloth, on the coast below the Boegoeberg Hills (Parkington et al. 2004). It had been blanketed by sand some time after it was occupied by Middle Stone Age shellfish gatherers. It remained blocked until the early 1990s when diamond miners excavated the shelter in search of diamondiferous deposits. Archaeologists were alerted after most of the deposit had been removed. These deposits are extremely informative for our understanding of the spread of the Middle Stone Age in Namaqualand and further open sites are not impossible (Parkington et al. 2004).

From the above it is clear that while archaeologists are aware of the archaeological richness of the Port Nolloth area, no professional archaeological research has yet been undertaken.

6. METHODS

Dr Webley of the Archaeology Contracts Office visited the proposed area of the borrow pits together with Mr Abraham de Wet of the Richtersveld Municipality on 16 February 2009. Mr de Wet was able to show her the location of the borrow pits, after which she conducted a foot survey of the site with a digital camera and GPS unit. The survey commenced with Borrow Pit 1 and then moved onto Borrow Pit 2. Due to the nature of the development (i.e. removal of large areas of sand and calcrete with bulldozers which means that neat edges to the borrow pits will be difficult to achieve) a comprehensive survey was undertaken, commencing at the southern edge of Borrow Pit 1 and stretching up to the edge of the graveyard.

6.1 Limitations

There were no limitations to the survey. The area comprises a low sand dune (covering horizontal bands of calcrete) sparsely covered in knee-high scrubby vegetation. It is the calcrete which is the target of the borrow pits.

7. RESULTS

Site 1: This is a very large shell midden (see terminology) which stretches along the edge of the dune facing the pan and is situated close to an outcrop of calcrete. It is located some 800m due east of the sea and is inside the boundaries of Pit 1 (Figure 4). The densest part of the midden is at:

S 29 14 46.6
E 16 52 27.7

But it stretches a considerable distance from:

S 29 14 44.8	To:	S 29 14 47.2
E 16 52 27.9		E 16 52 27.6

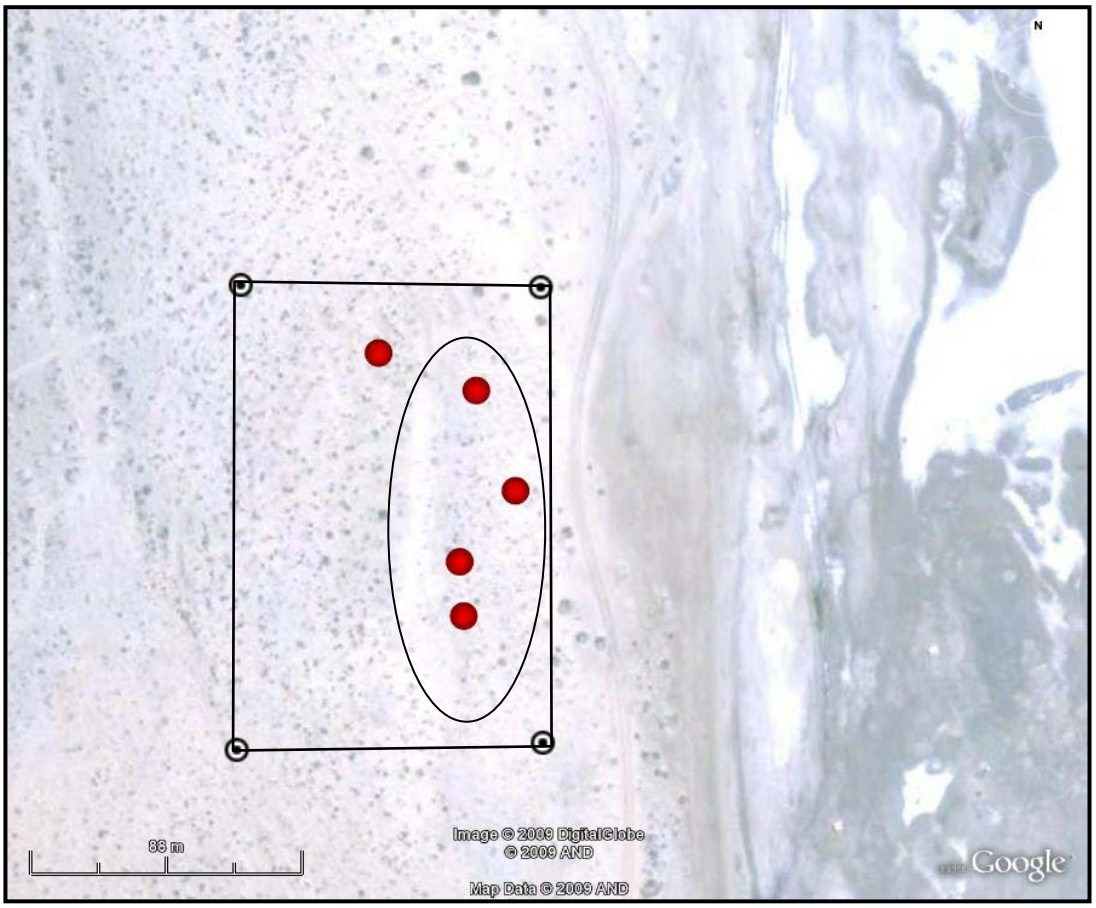


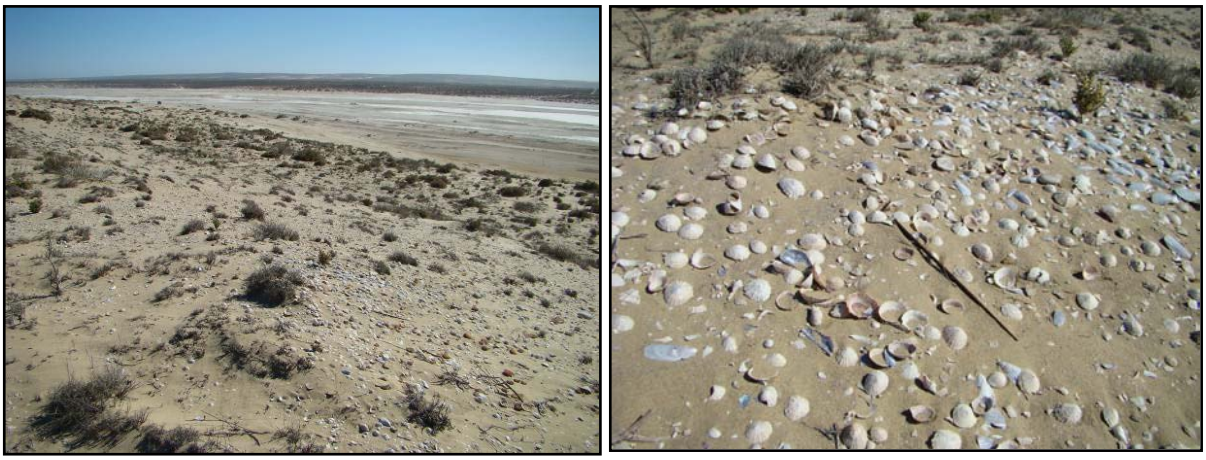
Figure 4: Pit 1. The 4 red dots in the circle are 4 GPS readings for Site 1. The single red dot to the left, outside the circle, represents Site 2.

The midden consists of a high concentration of fragmented black mussel (Choromytilus sp.) with a more localised concentration of patella in the centre of the midden. The patella include: P. argenvillei, P. granularis, P. granatina and P. tabularis. This site, like many of the others, also contains a spread of snail shell.

There are numerous quartz chunks and cores, but the most significant aspect of this site is the very high density of stone artefacts made of fine-grained raw material (possibly from a superficial observation as high as 50%). This consists of mainly chalcedony but there are also examples of fine-grained silcrete. The artefacts include cores, chunks, flakes and chips suggesting that stone tool knapping was taking place on site. A number of the irregularly shaped flakes and chunks contained evidence of miscellaneous retouch. Formal tools include a single thumbnail scraper and several backed flakes. No backed blades were observed.

The site contains a thin scatter of ostrich eggshell fragments (as does all the others) but there is no evidence for any ostrich eggshell beads or of bead manufacture. However David Morris (McGregor Museum) has noted that the late Grazia de Beer of Port Nolloth reported collecting ostrich eggshell beads from middens near the pan. No preserved bone remains were observed on the surface and there is also no evidence for any hearths.

The high density of fine-grained raw material and the type of stone tools suggests that this site may represent a Wilton (see terminology) occupation. The absence of pottery confirms that it pre-dates 2000BP.



Left: View of Site 1 overlooking the pan. Right: close up of the midden showing the density of shell.

Examples of the stone artefacts (and ostrich eggshell fragments) found on the site.

Site 2: Slightly higher than Site 1, is a very faint scatter of shell on top of a little ridge. This site catches the wind and is very uncomfortable on windy days. It comprises some very weathered fragments of mussel and limpet and a few fragments of quartz. Its GPS location is:

S 29 14 44.5
E 16 52 26.6

Site 3: This site represents a very faint scatter of ostrich eggshell fragments and some chunks of quartz, just above the edge of the existing borrow pit (Figure 5). It suggests that a site may have existed in the past but that it was destroyed during the excavation of the current borrow pit. Its GPS location is:
S 29 14 38.1
E 16 52 27.2

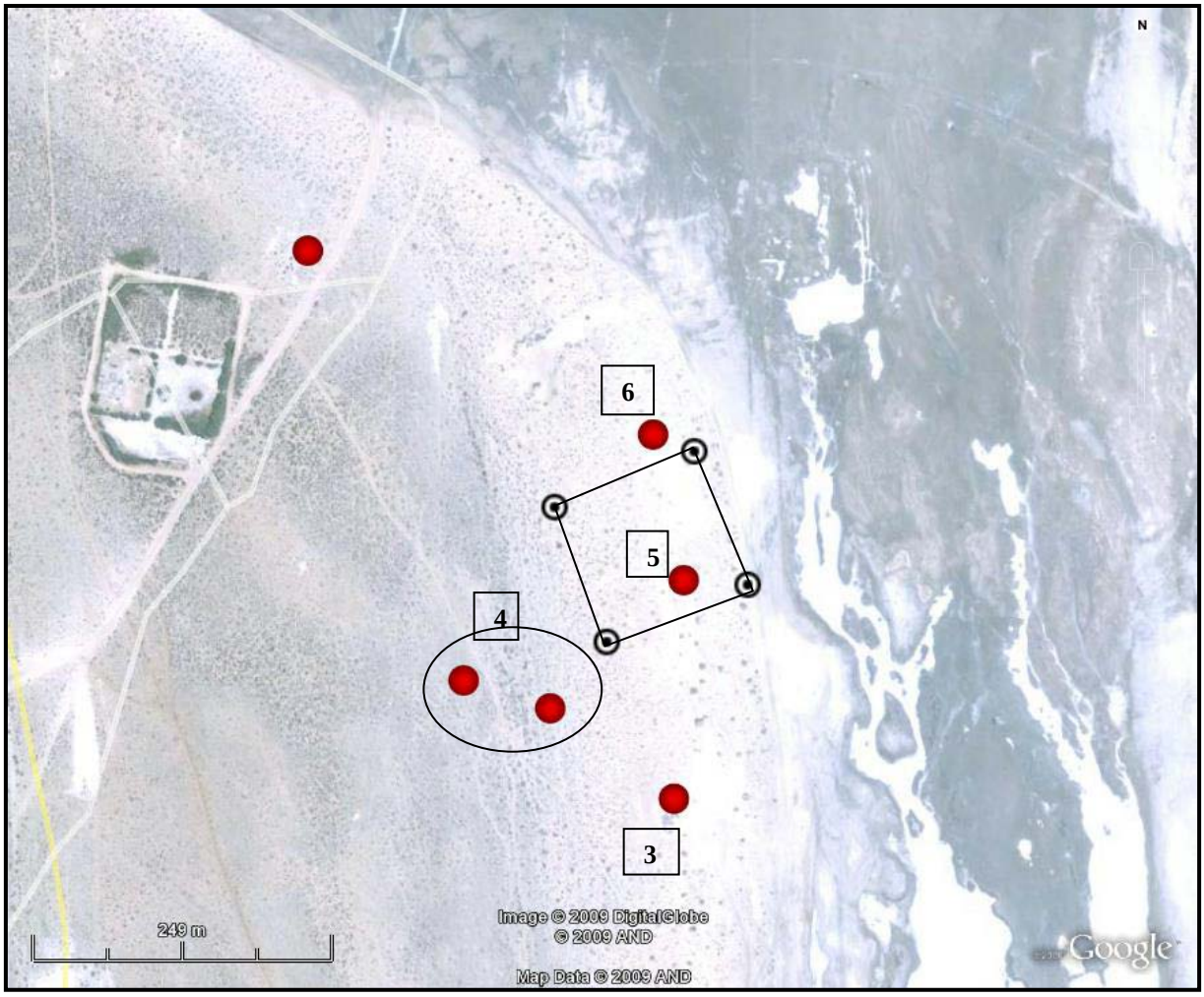


Figure 5. Pit 2: showing the locations of Site 4 to the south of the Pit, Site 5 (inside the proposed Pit) and site 6 to the north. Site 3 is located on the edge of the old borrow pit, while the site to the north, next to the graveyard, falls outside the area of study.

Site 4: Like Site 1, this site has a scatter of shell running down the talus slope. However, the densest concentration of shell is at:

S 29 14 34.8
E 16 52 20.7

It comprises a midden largely made of Patella (P. argenvillei, P. tabularis and P.granatina). There are also a number of ostrich eggshell fragments disbursed among the shell. There are

very few stone tools and they are mainly made on quartz, there is very little fine-grained material from this site.

Left: Site 4 located below a ridge of calcrete. Right a stone tool from fine-grained raw material.

Site 5: This consists of a dense scatter of ostrich eggshell fragments running along the edge of the pan. It is associated with some quartz chunks. There are very few, fragmented marine shell fragments as well. Its GPS location is:

S 29 14 32.2
E 16 52 27.5

Site 6: This comprises a light scatter of marine shell (Patella sp.), ostrich eggshell fragments and quartz chunks. Its GPS location is:

S 29 14 28.2
E 16 52 26.6

Site 7: This site is located outside of the area identified for calcrete mining. It is situated across from the gravel access road to the pan, and close to the graveyard. The decision to record this site was based on the degraded nature of the area. There are numerous amorphous flaked stone tools and cobbles of various types of raw materials. Some of the stone tools may be of Middle Stone Age origins but no distinctive MSA tool types were identified. The random distribution suggests that the edges of the pan may have attracted human occupation over many thousands of years.

8. SIGNIFICANCE OF SITES

There are only two sites of significance along the western edge of the pan, namely Site 1 and Site 4. The other scatters of marine and ostrich eggshells are so ephemeral that their excavation will provide very little new information.

Site 1 is extremely significant in terms of our understanding of Later Stone Age shell middens in Namaqualand. Firstly, it is almost 1km from the coast. While shell middens are known to occur up to 5km from the coast, they are not common. It is located on the edge of a salt pan (rather than next to the coast) and while the inhabitants of the site were clearly utilizing marine resources, they were probably also utilizing terrestrial resources. It is possible that

various types of game may have drunk from the waters of the pan after winter rainfall (in summer the water is too saline for human consumption). The high concentration of ostrich eggshell fragments may be an indicator of the presence of ostriches, but equally it could indicate that groups were bringing ostrich eggshell containers to the pan to fill with water. The most significant aspect of this site is the extremely high density of fine-grained raw materials used for the manufacture of stone tools. A superficial visual inspection of the site suggested to me that they comprised at least 50% of the raw material composition. The only LSA shell midden along the Namaqualand coast which is comparable is KN6-3C with 48% CCS and it dates between 2000 and 4000BP (Dewar 2007). It is likely that Site 1 dates to around 3000BP and therefore has the potential to inform us about this critical period before the arrival of pastoralism in the Northern Cape (Webley 1992). There are a few words of caution: there is no evidence for the preservation of bone or charcoal on the surface of the midden, although clearly the dry conditions of Namaqualand may have preserved these lower down in the deposit.

Site 4 is also of interest and should be conserved although it does not offer the same potential as Site 1. The site is smaller and the shell not as dense. It appears to contain more limpet than mussel suggesting differences between Sites 1 and 4. While there is evidence for both quartz and silcrete stone tools, they are not as common as on Site 1.

9. MITIGATION

The No-Go option was considered. However, the density of sites along the margins of the pan is very low, and it seems pointless to try and prevent mining. Also it is important to remember that the public is currently dumping rubbish and building material on the western margins of the pan, and the archaeological sites may be impacted in future by conditions external to the mining.

Sites 1 and 2 fall within the area proposed for Borrow Pit 1 and will be destroyed during bulldozing of the site. *However, it is only Site 1 which is of significance and will need mitigation (i.e. test excavations).*

- The area of densest concentration of shell is quite small and an excavation of 4-6m² may be sufficient to obtain a representative sample of shell.
- A surface collection of the remainder of the stone on the site is also recommended.
- Further, a radiocarbon date on the marine shell will enable the site to be placed in the regional chronology which is being established for Namaqualand.

It is only Site 5 which falls within the area proposed for Borrow Pit 2. This site, like Site 6 (just outside the boundary), is very ephemeral and neither will need mitigation.

However, Site 4, which lies to the west (and outside) the boundary of Borrow Pit 2, is of significance. It is located between 70m and 120m from the boundary of the Pit. *It is debatable whether the site is sufficiently far removed from the borders of Pit 2 to be protected from future calcrete mining.* If one considers the existing Borrow Pit (between 1 and 2), it is clear that it has no clearly defined boundaries of a regular, rectangular shape. It represents an irregular excavation into the site of the pan, in search of calcrete. Since the proposed mining will be of an incremental nature, taking place over the next few years as needs determine, it is not feasible to suggest that an archaeologist should be present during mining. *The question is*

whether Site 4 should be sampled, so that future mining of the calcrete may take place unhindered without concerns around accidental destruction?

- If SAHRA recommends mitigation of Site 4, it is proposed that a single 1m² will be sufficient and this can take place at the same time as mitigation of Site 1.

10. RECOMMENDATIONS

The intention of the Richtersveld Municipality to excavate two borrow pits along the western margins of a large salt pan to the north of Port Nolloth triggered this Archaeological Impact Assessment.

The No-Go option was considered but rejected. There is a low density of archaeological sites and the likelihood that they may be damaged by factors, such as illegal dumping of building material, means that they are already under threat.

The mining of calcrete in Borrow Pit 1 will result in the destruction of a large shell midden (Site 1) which is located on the edge of the pan. The midden is of significance because of its location (on the edge of a pan as opposed to the coast) and its high percentage of stone tools made of fine-grained raw materials. The site therefore has the potential to provide important information on the settlement of Namaqualand prior to the arrival of pastoralist groups around 2000BP. For this reason, mitigation is recommended and a number of specific suggestions are made in Section 9 above.

No significant sites are threatened by Borrow Pit 2. The ephemeral scatters of marine and ostrich eggshell in close proximity to the pit (Sites 5 & 6) are of low significance and no mitigation is recommended. However, site 4, which is located between 70-120 m from Pit 2, is significant and this report questions whether it should be sampled, so that the mining of the calcrete may take place unhindered without concerns around accidental destruction? It will be very difficult to monitor the exact movements of the bulldozer when it excavates the calcrete layers and it is always possible that the midden may be destroyed through collapse of the surrounding soil. A test excavation of this midden will allow pertinent information to be collected. SAHRA needs to consider the various issues surrounding Site 4 and make a recommendation.

The presence of middens on the edge of the pan confirms that this area was the focus of settlement in the past. Therefore it is important to point out that the soft sands overlying the calcrete on the edge of the pan may contain human remains (i.e. prehistoric graves). These may be uncovered during the bull-dozing of the site to extract the calcrete. SAHRA needs to be notified immediately if any human remains are uncovered and an archaeologist will have to investigate.

ACKNOWLEDGEMENTS

I should like to thank Mr Abraham de Wet, of the Richtersveld Municipality, for accompanying me on site.

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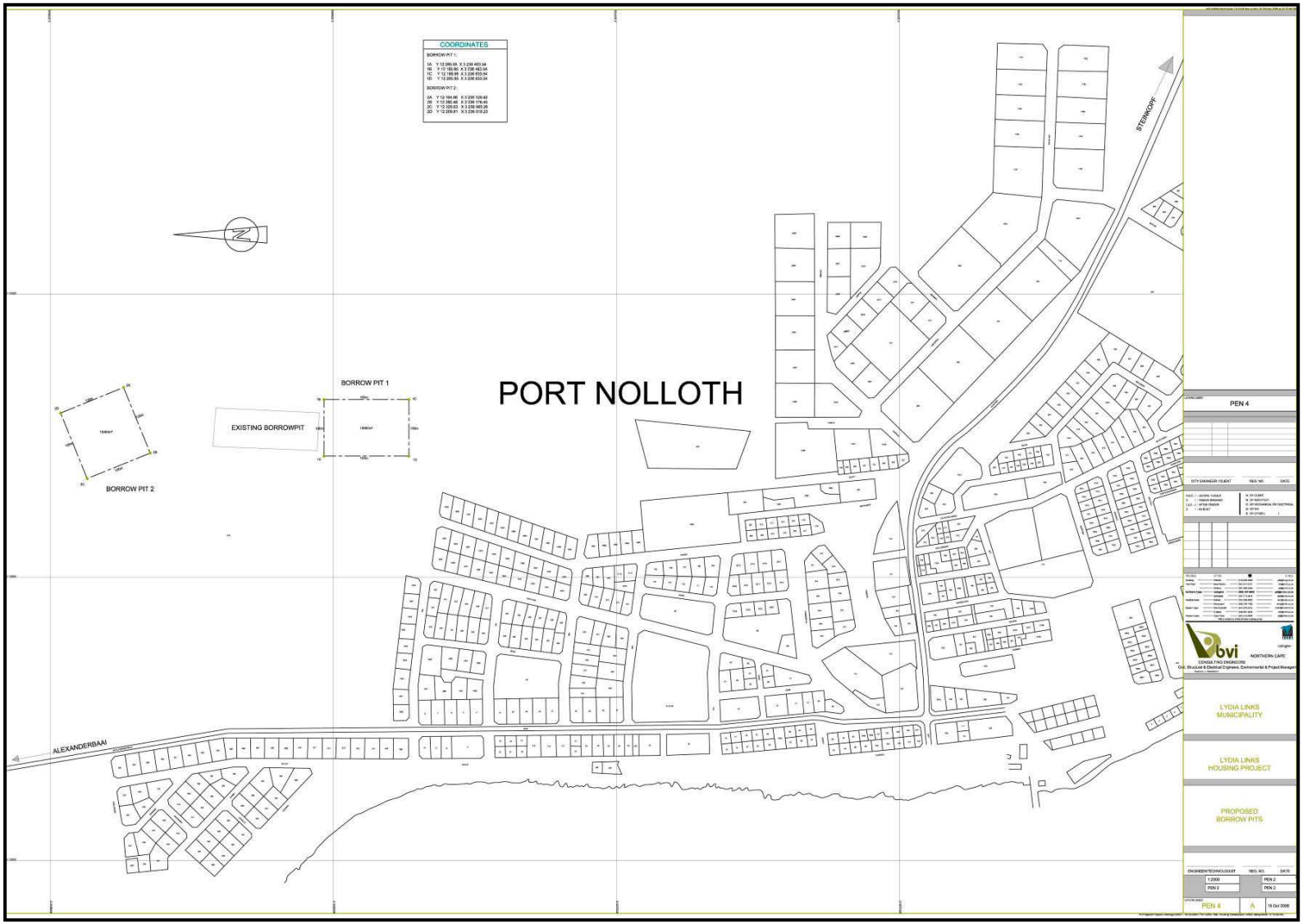

Figure 2: The plan for the mining of two new borrow pits north of Port Nolloth.