

**ARCHAEOLOGICAL IMPACT ASSESSMENT
OF THE PROPOSED EXTENSION OF TWO BORROW PITS
ON PORTIONS 12 & 18, WATERKLIP NO. 103,
VREDENBURG AREA, WEST COAST DISTRICT,
WESTERN CAPE**

(Assessment conducted under Section 38 (8) of the National Heritage Resources Act as part
of a Heritage Impact Assessment)

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JULY 2012

EXECUTIVE SUMMARY

Natura Viva cc was appointed by Vidamemoria Heritage Consultants on behalf of Nadeson Consulting Services to undertake an Archaeological Impact Assessment (AIA) for the proposed extension of two existing borrow pits, MR240/3.6/R/300 (Vidamemoria pit no. 104) and MR240/4.6/L/100 (Vidamemoria pit no. 105), in agricultural land in the Vredenburg Peninsula of the West Coast District, approximately two to three km north-west of Vredenburg. Material excavated from the proposed extensions will be used for the re-gravelling of minor roads in the area. No new roads will have to be constructed as access to the quarry sites will be via existing roads and tracks. The slopes of the borrow pits will be smoothed out, contoured and re-vegetated once mining activities have ceased.

This study forms part of the Heritage Impact Assessment triggered by the development. The brief for the study was a field visit and short report identifying and assessing archaeological resources and any impact on them, an assessment of significance and recommendations regarding any mitigation required.

The field assessment was conducted on foot on 3 July 2012. Visibility of archaeological material on the ground was good at proposed pit extension 105, but was somewhat impeded by growing wheat crops at the proposed site of Pit 104.

The only observations at Pit 104 concerned a smooth, possibly ground, granite cobble found in a heap of material removed from the agricultural land and a worn tooth, probably of recent sheep origin.

A few scattered quartz, coarse-grained silcrete and calcrete artefacts of mostly indeterminate age, a small LSA core and part of a lower grindstone were observed at Pit 105, as well as a sheep's tooth. The latter is not regarded to be of archaeological interest as the carcasses of a couple of dead sheep were observed in the ploughed field.

The sparse, scattered archaeological material observed was found in a disturbed, secondary context and is therefore considered to be of low heritage significance. No significant impact on such resources is expected if the proposed extensions of the existing borrow pits are developed. No further archaeological studies or mitigation are recommended.

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1. INTRODUCTION

Natura Viva cc was appointed by Vidamemoria Heritage Consultants on behalf of Nadeson Consulting Services to undertake an Archaeological Impact Assessment (AIA) for the proposed extension of two existing borrow pits, MR240/3.6/R/300 (Vidamemoria pit no. 104) and MR240/4.6/L/100 (Vidamemoria pit no. 105), in the Vredenburg Peninsula of the West Coast District (Figure 1). The proposed extensions lie in agricultural land less than a kilometre from each other, between two to three km north-west of Vredenburg (Figure 1). Material excavated from the proposed extensions will be used for the re-gravelling of minor roads in the area. No new roads will have to be constructed as access to the quarry sites would be via existing roads and tracks. The pits will be rehabilitated once mining activities have ceased. The slopes of the borrow pits will be smoothed out, contoured and re-vegetated.

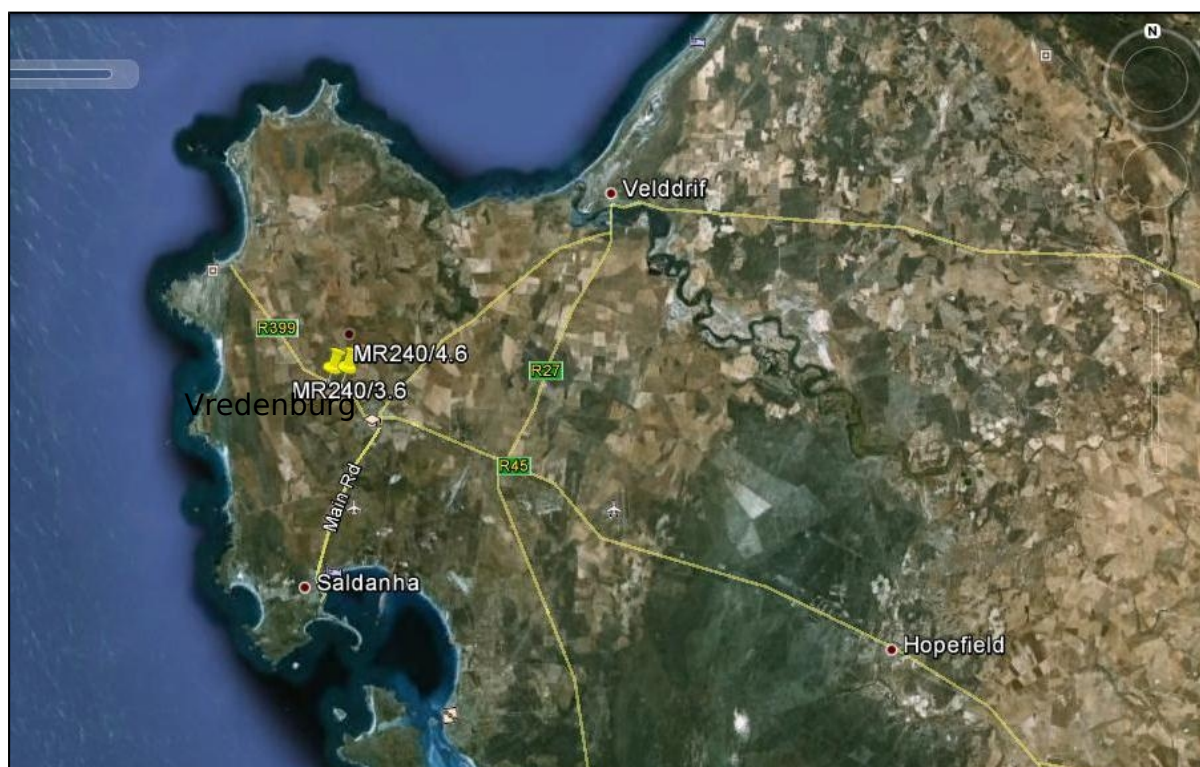


Figure 1: Google earth image showing the location of the proposed extensions of two existing borrow pits MR240/3.6/R/300 (Vidamemoria pit no. 104) and MR240/4.6/L/100 (Vidamemoria pit no. 105) in the Vredenburg Peninsula. Vredenburg lies between two to three km southeast of the affected areas. The relevant 1:50 000 topographical map is 3217 DD Vredenburg.

2. LEGAL FRAMEWORK

Section 38 of the National Heritage Resources Act (Act 25 of 1999) is triggered by certain types of development, including changes of character to an area exceeding 5 000m², and makes provision for compulsory Heritage Impact Assessments to assess the potential impacts of such proposed developments on heritage resources. In terms of Section 38(1), a Notification of Intent to Develop (NID) form was submitted to Heritage Western Cape (HWC) by Vidamemoria. Following comment from HWC (case number 111115JB27) an AIA was included amongst the requirements according to Section 38(8) of the Act.

3. TERMS OF REFERENCE

The terms of reference for the AIA stipulated a field visit to locate and map archaeological resources, a short report dealing with the field observations, an assessment regarding the significance of the resources (in the context of other studies in the area) and any impacts on them, as well as recommendations regarding any mitigation required.

4. STUDY APPROACH

4.1 Methods

Fieldwork for both pits was undertaken by the author and two assistants on 3 July 2012. Site plans indicating the affected areas were provided by Nadeson for the Phase 1 survey. Each area was covered on foot and archaeological occurrences and tracks were recorded by a Garmin GPSMAP 62s set on the WGS84 datum (Figures 2 & 8). Both sites were extensively photographed.

4.2 Limiting factors

Visibility of archaeological remains on the ground was good at proposed Pit 105, but not as good at Pit 104 where wheat had been planted.

5. DESCRIPTION OF AFFECTED ENVIRONMENT AND SITES

5.1 Archaeological background:

It is beyond the scope of this small impact study to provide a comprehensive overview of the rich archaeological (and palaeontological) heritage of the Vredenburg area and the neighbouring coastal areas such as Saldanha Bay, Paternoster, St Helena Bay and Langebaan where many research and archaeological impact studies have been undertaken. A useful summary and bibliography for the prehistoric and colonial past of the region - covering the Early Stone Age (ESA), Middle Stone Age (MSA), Later Stone Age (LSA) hunter-gatherers and Khoe-khoen pastoralists, as well as the colonial period - are included in a report by D. Halkett (2011).

As the proposed borrow pit sites are located away from the coast, research done on inland sites are of more relevance for this borrow pit study. This includes work on the important

Kasteelberg sites, over 8 km to the north of the proposed pits (Smith 1992, 2006, 2008; Smith, Sadr, Gribble & Yates 1991; Sadr 2007, 2008). Excavations at several of these shell midden sites have shown that this region has been occupied since the Middle Stone Age (MSA), but most of the occupation covers the last two thousand years (Smith 1992). The site of KBB in particular has provided a cultural sequence for the ceramic Later Stone Age (LSA) of the region and has been a focus point of research on pastoralism. Another key Vredenburg site is that of the small rock shelter of Witklip, about 4 km southeast of the proposed pits, which has one of the best-dated hunter-gatherer sequences in the region (Smith et al. 1991). A survey of archaeological sites on the Vredenburg Peninsula undertaken in 1991/1992 (Sadr, Gribble & Euston-Brown) recorded 99 sites which were classified into five groups showing changes in adaptive strategies. A few of these sites lie fairly close to the proposed pits (K. Sadr, pers. comm.), namely DKR1 (Die Krans Farm) and SNF1 (Sandfontein Farm) at approximately 1.3 km to the southwest, 2.5 km to the northwest of Pit 105. Several sites at Katzenberg Farm (KZB) are located about 5 km to the north of Pit 105. Archaeological impact studies done in the immediate area of the proposed pits include those done by Deacon (2007) and Kaplan (2005, 2006, 2008) close to Witklip and sites recorded at Heuningklip, to the north of Vredenburg. Where material has been observed, it has been LSA with some pottery.

One of the most relevant publications regarding the types of material which might be encountered in open, ploughed fields away from the coast and away from granite outcrops concerns the study by Fauvelle-Aymar et al. (2006). The survey and subsequent plotting of material undertaken at KFS 5, approximately 13 km to the north of the proposed pits, revealed a low density and patchy distribution of artefacts such as lithics, indigenous thin-walled earthenware pottery sherds, non-flaked stone tools such as anvils, lower and upper grinding stones, fragments of portable grooved stones and bored stones, as well as fragments of European objects such as porcelain, glass, brick and concrete. Items such as burnt calcrete cobbles (possibly the remains of large stone hearth features) and concentrations of whole limpet shells were also plotted. Small lumps of vitrified dung were observed and identified as the possible remains of a burnt livestock pen.

5.2 Borrow pit MR240/3.6/R/300 (Vidamemoria pit no. 104)

Approximate area: 150m x 90 m

Location: S 32° 53' 2.85" E 17° 58' 12.83"

Farm name and number: Portion 18 of farm Waterklip No. 103

Environment: The affected area lies on a south-facing slope approximately 280m to the north of the MR0240 from Vredenburg to Paternoster. The existing quarry, a gully and a fence form the western boundary of the proposed extension (Figures 2 and 3). There are no markers for the other boundaries. A colluvially transported gravelly silty sand horizon that varies in thickness is underlain by ferruginised soils. The gravel component of the soils varies from fine to medium subangular ferricrete and weakly cemented ferruginised sand nodules. Clay content also varies across the site. The ferruginised soils overlie weathered granite. The presence of termite mounds ('heuweltjies') results in some undulations in the terrain. The area is used for farming and wheat had been planted with the result that the visibility of archaeological material on the ground was somewhat limited (Figures 3 and 4).



Figure 2: Google earth image showing the proposed extension of the existing borrow pit 104 with the tracks and waypoints of the field survey. The existing quarry is the lighter patch on the left side of the polygon.



Figure 3: Pit 104 – view towards the north. The dark area on the left indicates the existing borrow pit with gully along the fence line.



Figure 4: Pit 104 – view towards the south from the northern part of the affected area. Vredenburg is visible on the horizon to the left. Rows of planted wheat are evident.

Results of the survey: The only objects of potential archaeological interest observed were a rounded granite cobble with flat upper and lower surfaces (possibly ground) found in a heap of larger blocks removed from the fields (Figures 5 and 6) and a single very worn tooth (Figure 7). The latter, belonging to a sheep (G Avery pers. comm.) probably dates to recent times as the land is generally used for agricultural purposes. Although the edges of the cobble were smooth and rounded, no actual polished surfaces or grooves were observed. No evidence of flaked stone, bone, shell, pottery or vitrified dung was noted.



Figures 5 and 6: Pit 104 – heap of stones in the gully; rounded granite cobble. The ruler is about 15 cm in length.



Figure 7: Pit 104 – worn tooth. The scale is in cm.

5.3 Borrow pit MR240/4.6/L/100 (Vidamemoria pit no. 105)

Approximate area: 123 m x 132 m

Location: S 32° 53' 2.17" E 17° 57' 34.88"

Farm name and number: Portion 12 of farm Waterklip No. 103

Environment: The existing pit and proposed extension lie in ploughed land adjoining the MR0240 (Figure 8). The proposed extension would be in an easterly, southerly and westerly direction from the present quarry. Except for the road and the western edge of the quarry, there are no clear boundaries for the proposed extension so a wider area than the affected polygon was surveyed. The ground slopes gently uphill to the south-east. The faint brown circles visible in the satellite image and on the ground indicate the presence of termite mounds ('heuweltjies'). Colluvially transported, ferruginised gravelly silty sand mostly overlies gravelly, silty sandy ferricrete. The gravel consists of fine to medium nodular ferricrete and ferruginised sand grains that are weakly to moderately cemented. The sand and gravel overlie completely weathered coarse-grained granite, partly calcretised and ferruginised. Some calcrete gravel occurs 0.4 m below the surface in some areas. Archaeological visibility was good as the terrain was only covered by patchy grass and sparse, dried wheat stalks.



Figure 8: Google earth image showing the proposed extension of the existing borrow pit 105, tracks and waypoints of the field survey. Please note that the straight blue lines do not indicate survey tracks.



Figure 9: Pit 105 – view towards the east, the area where Pit 104 lies. The existing quarry is evident on the left.



Figure 10: Pit 105 – view towards the north taken from a spot outside the southern boundary of the affected area. The existing pit and road lie in the middle distance and Kasteelberg is very faintly visible on the horizon.

Results of the survey: A few scattered artefacts of quartz, coarse-grained silcrete and calcrete were observed (Table 2 in the Appendix, Figures 11 to 14, 16). Part of a sandstone or quartzite lower grindstone with polish on both surfaces was noted (Figure 15), as was a rounded granite cobble (Figure 17). No polished surfaces, grooves or hammer marks were observed. One of the silcrete artefacts (Figure 16) appeared to have backing along one edge and could perhaps be an adze. The artefacts mostly appear to be of indeterminate age, although the possible quartz core would belong to the LSA. The carcasses of a couple of dead sheep lay in the field so the few bone fragments observed were not recorded as way points. The only exception was a tooth (Figure 14) which has been identified as belonging to a sheep (G. Avery, pers.comm.). No other material of archaeological interest such as shell, pottery or vitrified dung were observed.



Figures 11 to 13: Pit 105 – snapped quartz flake; quartz core; coarse-grained silcrete flake. The scale is in cm.



Figures 14 to 16: Pit 105 – quartz and calcrete flakes; part of lower grindstone; coarse-grained silcrete artefact. The scale is in cm.



Figures 17 a: Pit 105 – sheep tooth; rounded granite cobble. The ruler is about 15 cm in length.

6. SIGNIFICANCE AND RECOMMENDATIONS

The sparse, scattered archaeological material observed was found in a disturbed, secondary context and is therefore considered to be of low heritage significance. No significant impact on such resources is expected if the proposed extensions of the existing borrow pits are developed. No further archaeological studies or mitigation are recommended.

If any human remains are found during the development of the proposed pits, work in that area must cease and the South African Heritage Resources Agency (SAHRA) must be notified immediately.

7. REFERENCES

Deacon, H.J. 2007. Group Housing Erf 2483 Vredenburg, Saldanha Bay 'B' Municipality: Archaeological Impact Assessment Report. Unpublished report prepared for Cape Lowlands Environmental Services.

Fauvelle-Aymar, F-X., Sadr, K., Bon, F. & Gronenborn, D. 2006. The visibility and invisibility of herders' kraals in Southern Africa, with reference to a possible early contact period Khoekhoe kraal at KFS 5, Western Cape. *Journal of African Archaeology* 4: 253-271.

Halkett, D. 2011. Proposed Wind Energy Facility on the Vredenburg Peninsula, Saldanha Bay Municipal Area, Western Cape. Unpublished report prepared for Aurecon South Africa (Pty) Ltd. ACO Associates.

Kaplan, J.M. 2005. Phase 1 Archaeological Impact Assessment Portion 7 of the Farm Witteklip 123 Vredenburg. Unpublished report prepared for Chand Environmental Consultants. Agency for Cultural Resource Management.

Kaplan, J.M. 2006. Phase 1 Archaeological Impact Assessment Portion of Portion 19 of the Farm Witteklip No 123 Vredenburg. An unpublished report prepared for BVZ Professional Planning Consultants. Agency for Cultural Resource Management.

Kaplan, J.M. 2008. Phase 1 Archaeological Impact Assessment Proposed Uitkyk Sand Mine Remainder of Portion 3 of the Farm Honing Klip 101 Vredenburg. Unpublished report prepared for Amathemba Environmental Management Consulting. Agency for Cultural Resource Management.

Sadr, K. 2007. Early first millennium pastoralists on Kasteelberg? The UB/UCT excavation at KBA. *South African Archaeological Bulletin* 62: 154-161.

Sadr, K. 2008. Invisible herders? The archaeology of Khoekhoe pastoralists. *Southern African Humanities* 20: 179-203.

Sadr, K., Gribble, J & Euston-Brown, G. 1992. The Vredenburg Peninsula Survey, 1991/1992 season. In: Smith, A.B. & Mütti, B. (eds.) *Guide to archaeological sites in the south western Cape*. Department of Archaeology, University of Cape Town.

Smith, A.B. 1992. Kasteelberg. In: Smith, A.B. & Mütti, B. (eds.) *Guide to archaeological sites in the south western Cape*. Department of Archaeology, University of Cape Town.

Smith, A.B. 2006. Excavations at Kasteelberg and the origins of the Khoekhoen in the western Cape, South Africa. Oxford: BAR International Series 1537.

Smith, A.B. 2008. Pastoral origins at the Cape, South Africa: influences and arguments. *Southern African Humanities* 20: 49-60.

Smith, A.B., Sadr, K., Gribble, J. & Yates, R. 1991. Excavations in the South-Western Cape South Africa, and the archaeological identity of prehistoric hunter-gatherers within the last 2000 years. *South African Archaeological Bulletin* 46: 71-91.

8. ACKNOWLEDGEMENTS

Ms Quahnita Samie of Vidamemoria Heritage Consultants is thanked for commissioning this study and providing background information. Prof Andy Smith, Dept. of Archaeology, UCT, gave me some useful pointers and Prof. Karim Sadr, School of Geography, Archaeology & Environmental Studies, University of the Witwatersrand, generously provided unpublished data from the 1991/1992 survey of the Vredenburg Peninsula. Hedi and Erwin Stummer are thanked for their company and extra pairs of eyes for the field work. Dr John Almond, Natura Viva cc, made helpful comments on the draft and Dr Graham Avery identified the teeth observed.

9. APPENDIX

The waypoints below do not indicate sites but only occurrences of single artefacts or a small group of artefacts found in close proximity to each other.

Table 1: Pit 104 waypoints

Waypoint	South	East	Description of material found
035	S32 53 02.9	E17 58 11.1	Rounded, possibly ground, cobble
036	S32 53 01.5	E17 58 13.4	Worn tooth, probably of recent sheep origin

Table 1: Pit 105 waypoints

Waypoint	South	East	Description of material found
027	S32 53 04.1	E17 57 33.1	Sheep's tooth, probably recent
028	S32 53 02.1	E17 57 33.9	Rounded cobble
029	S32 53 02.9	E17 57 32.1	Snapped quartz flake/blade
030	S32 53 02.9	E17 57 32.1	Milky quartz, possible LSA core
031	S32 53 01.0	E17 57 34.4	Coarse-grained silcrete flake
032	S32 53 01.3	E17 57 34.7	Quartz chunk and flake, calcrete flake
033	S32 53 05.9	E17 57 37.5	Lower grindstone fragment
034	S32 53 01.7	E17 57 37.4	Coarse-grained silcrete artefact, possible adze