

**ARCHAEOLOGICAL IMPACT ASSESSMENT
OF THE PROPOSED EXTENSION OF A BORROW PIT
ON PRINCE ALBERT TOWNLANDS,
CENTRAL KAROO 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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EXECUTIVE SUMMARY

Natura Viva cc was appointed by Vidamemoria Heritage Consultants on behalf of Aurecon South Africa (Pty) Ltd to undertake an Archaeological Impact Assessment (AIA) for the proposed extension of an existing, unauthorised borrow pit, DR1725/0.6/0.2R (Vidamemoria pit no. 148), on the outskirts of Prince Albert in the Central Karoo District to the north of the Swartberg, Western Cape. Material excavated from the proposed pit will be used for the maintenance of gravel roads in the region. No new roads will have to be constructed as access to the quarry site will be via existing roads and informal tracks. Topsoil from the newly developed areas will be stock-piled for later redistribution over all the worked-out area.

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 28 September 2012. Visibility of archaeological remains on the ground was generally good

Numerous Middle and Later Stone Age artefacts were scattered in varying densities over most of the northern part of the affected area and a few scattered artefacts were observed in the southern part, as well as beyond the western extent of the polygon. Those in the northern part are closely associated with the presence of the chert band of the Matjiesfontein Member. There are signs of flaking on portions of the chert band and on chert blocks of varying sizes which lie scattered over the terrain. This area has obviously been visited and utilised over a long period of time and can probably be regarded as a factory site.

Although this material is chronologically mixed and is not in a stratified context, it can provide information on the types and frequencies of artefacts produced by the knapping of chert in this area. Such information on local stone tool technology is of scientific value, particularly as it does not seem that any formal studies of archaeological material found in association with the chert band have been done, although it must be one of the most important sources of suitable raw material for the manufacture of artefacts in the south and south-western margins of the Great Karoo. This probable factory site is therefore considered to be of medium to high significance.

It is recommended that a precautionary approach be taken and that the northern area (defined in red in Figure 2) should be conserved as a heritage site. However, if development of the proposed extension is approved, it is recommended that the archaeological material be mapped, sampled and described before a permit for the destruction of the site by further quarrying activities is issued by Heritage Western Cape (HWC). It is recommended that mitigation consisting of the targeted surface sampling of the area of densest artefact concentration be undertaken by a qualified archaeologist with a permit issued by HWC.

The southern part of the site is considered to be of low archaeological significance and no further archaeological studies or mitigation are recommended in this part of the proposed extension.

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.

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1. INTRODUCTION

Natura Viva cc was appointed by Vidamemoria Heritage Consultants on behalf of Aurecon South Africa (Pty) Ltd to undertake an Archaeological Impact Assessment (AIA) for the proposed extension of an existing, unauthorised borrow pit, DR1725/0.6/0.2R (Vidamemoria pit no. 148), on the outskirts of Prince Albert in the Central Karoo District to the north of the Swartberg, Western Cape (Figure 1). Material excavated from the proposed pit will be used for the maintenance of gravel roads in the region. No new roads will have to be constructed as access to the quarry site will be via existing roads and informal tracks. Topsoil from the newly developed areas will be stock-piled for later redistribution over all the worked-out area.

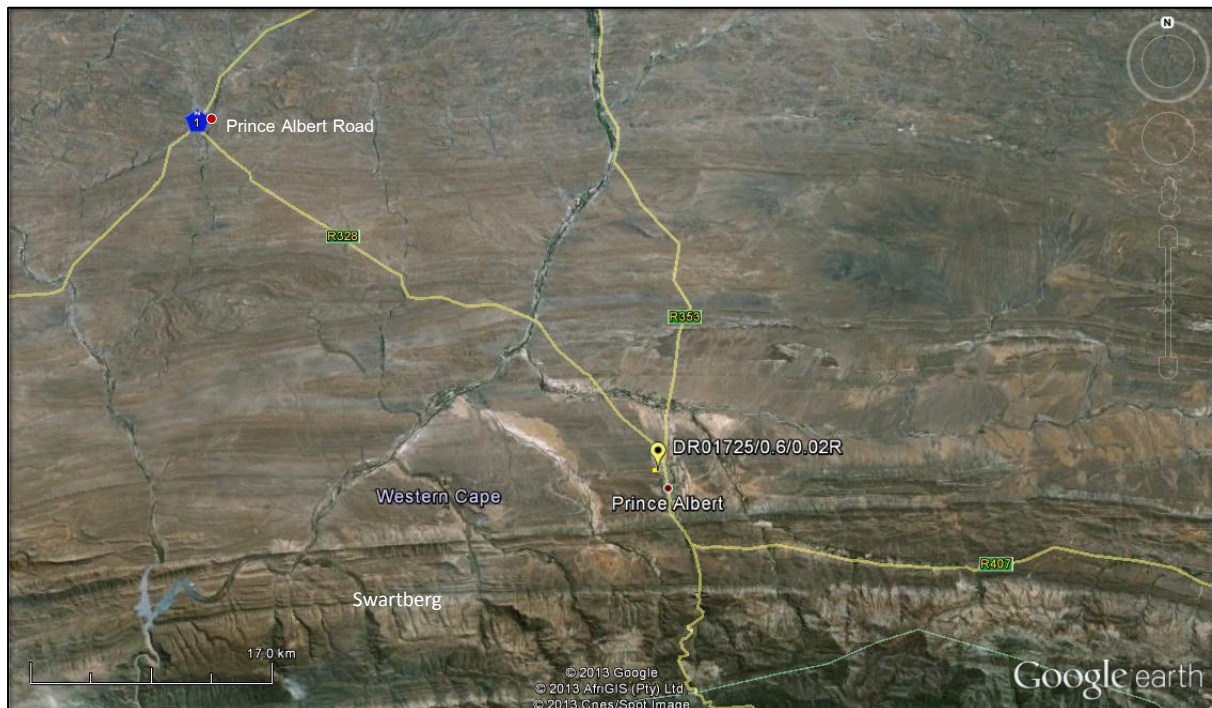


Figure 1: Google earth image showing the location of the proposed extension of existing borrow pit DR1725/0.6/0.2R (Vidamemoria pit no. 148) at Prince Albert, to the north of the Swartberg. The relevant 1:50 000 topographical map is 3322AA Prince Albert.

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 1808-1845 ref.120502JL02) 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 was undertaken on 28 September 2012. A site plan indicating the affected area was provided by Aurecon for the Phase 1 survey. The area was covered on foot and tracks were recorded by a Garmin GPSMAP 62s set on the WGS84 datum (Figure 2). The site and archaeological occurrences were extensively photographed.

4.2 Limiting factors

Visibility of archaeological remains on the ground was generally good as the vegetation was sparse. The only area where visibility was somewhat diminished was the north-western part where some rubble had been dumped between larger bushes. The far south-eastern part has been particularly disturbed and was not surveyed.

5. DESCRIPTION OF AFFECTED ENVIRONMENT AND SITE

5.1 Archaeological background:

Although the Karoo has a rich archaeological heritage it has not, with the notable exception of the research done by Sampson in the Seacow Valley (1985), been systematically studied. Archaeological Impact Assessments done over the past decade or two have made a contribution to knowledge about the distribution of Stone Age archaeology in the parts of the Karoo, for example studies undertaken in the area around Beaufort West by Kaplan (2002), Nilssen (2011), Orton (2010) and PGS (2012). Sites and scatters of Early, Middle and Later Stone Age (ESA, MSA and LSA) material have been recorded, as well as pastoralist occurrences, historical sites, rock paintings and engravings.

There do not appear to be any studies directly relevant to the proposed Prince Albert pit in terms of geographical and geological context on the SAHRA Archaeology, Palaeontology and Meteorite Unit Report Mapping Project DVD (2009). The Kappa Gamma survey by PGS (2012) covered an area on the northern side of the N1, probably some 45km to the northwest of the proposed pit, as did the study done by Deacon at Ratelfontein, along the MR582 from Prince Albert Road to Merweville (2004). A recent study in the greater Prince Albert region by Tusenius (2012) was located near Klaarstroom, approximately 43km to the southeast of Prince Albert, in the foothills of the Swartberg which is also not a comparable context.

Concentrations of stone artefacts ranging from the ESA to LSA have been noted in association with the chert band of the Matjiesfontein Member of the Collingham Formation, Lower Ecca Group, along the south and south-western margins of the Great Karoo (personal observation and SA Archaeological Society excursion in the Prince Albert area, J. Maguire 2008). Chert provided a favoured source of raw material for the manufacture of stone artefacts due to its fine-grained, homogeneous texture and conchoidal fracture. Although the chert band is a prominent feature of the landscape, for example in the area between Matjiesfontein / Laingsburg and Prince Albert, there appear to have been no formal studies of the archaeological significance of this resource.

5.2 Borrow pit DR1725/0.6/0.2R (Vidamemoria pit no. 148)

Approximate area: 300m x 200m

Location: S 33°12'51.25" E 22° 1'21.21"

Farm name and number: Prince Albert Townlands

Environment: The existing quarry is located on the south side of an east-west trending ridge adjacent to a residential area on the western side of Prince Albert (Figure 2). The proposed extension lies to the north and south of the present pit and is bounded by various roads and tracks on almost all sides (Figures 2, 4 to 6, 9 to 11). As the affected area lies close to a residential area it has been criss-crossed by informal footpaths and used as a dumping ground. Eskom and Telkom lines cross part of the site. In spite of the disturbance and litter, the northern half of the affected area still shows good exposure of rocks of the Ecca Group, including the chert band of the Matjiesfontein Member of the Collingham Formation (J. Almond, pers. comm., Figures 5 to 9). The terrain here slopes down towards the houses to the north (Figures 2, 4 and 5) and open veld to the west (Figure 6). Mudrock gravel covers the surface. The area to the south of the existing quarry is fairly flat-lying and consists of Dwyka Group rocks (Figures 10 and 11). A small stream bed to the west of the affected area (Figures 2 and 9) brings in quartzite from the Swartberg and adjacent pediment gravels to the south (Figures 8 and 11).

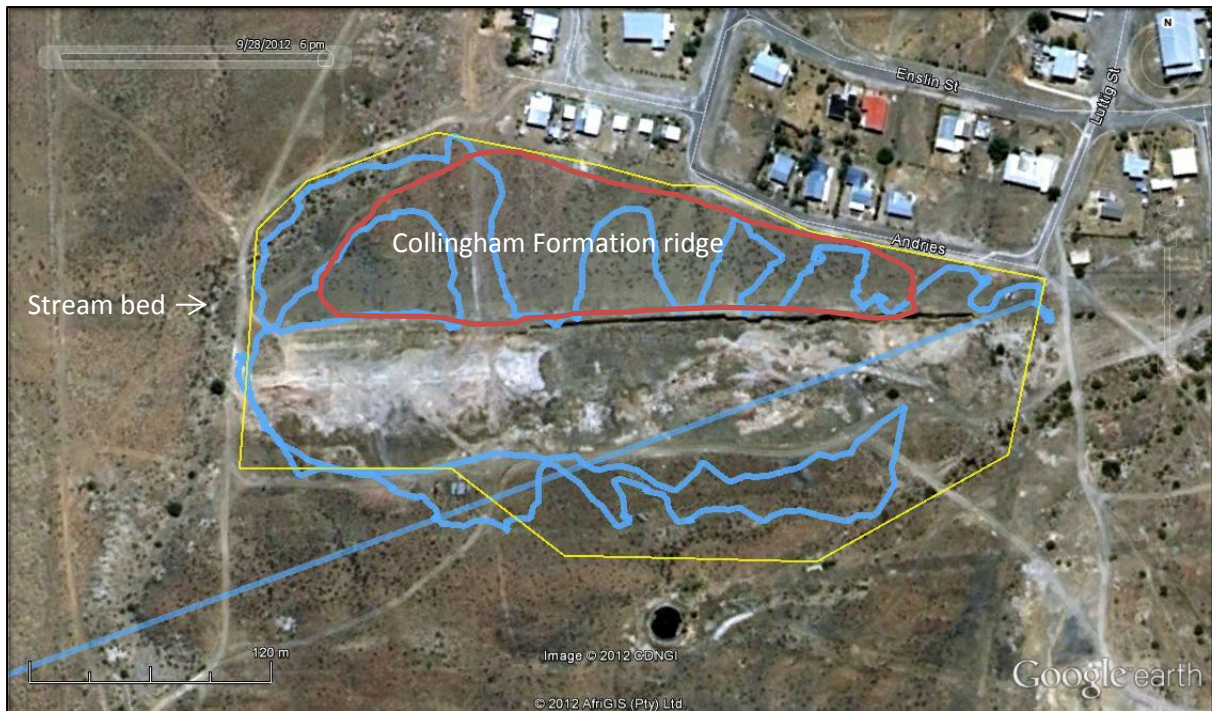


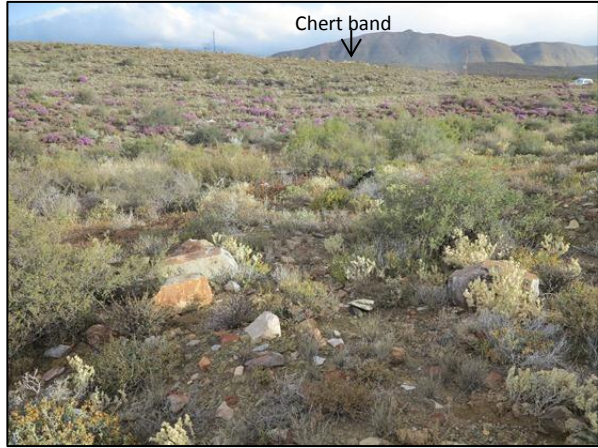
Figure 2: Google earth image showing the proposed extension of the existing borrow pit 148 (yellow), the tracks of the field survey (blue) and the area with the greatest concentration of stone artefacts (red). The dark circle in the south indicates the cement dam visible in some of the photos. A small stream bed is evident on the west of the affected area. Please note that the straight blue line does not indicate a survey track.



Figures 3 and 4: View towards the west of the existing quarry; view towards the west of the northern part of the affected area.



Figures 5 and 6: The northern part of the proposed extension – view downslope towards the northwest with the Matjiesfontein chert band in the bottom left corner of the photo; view towards the west of the prominent weathering chert band and the north-western part of the affected area where the small stream bed crosses the polygon.



Figures 7 and 8: Northern part of the proposed extension - detail of the chert band (the ruler is about 15cm in length); view from the northern boundary towards the southwest showing part of the chert band on the crest of the slope. The Swartberg is visible behind it.



Figure 9: view towards the north of the more densely vegetated north-western area where the small streambed intersects with the polygon.



Figures 10 and 11: The southern part of the affected area - view towards the south west across the existing quarry; view towards the southeast with part of the proposed extension lying in the foreground and the Swartberg in the background. The cement dam, visible in both photos, lies outside the southern boundary of the polygon.

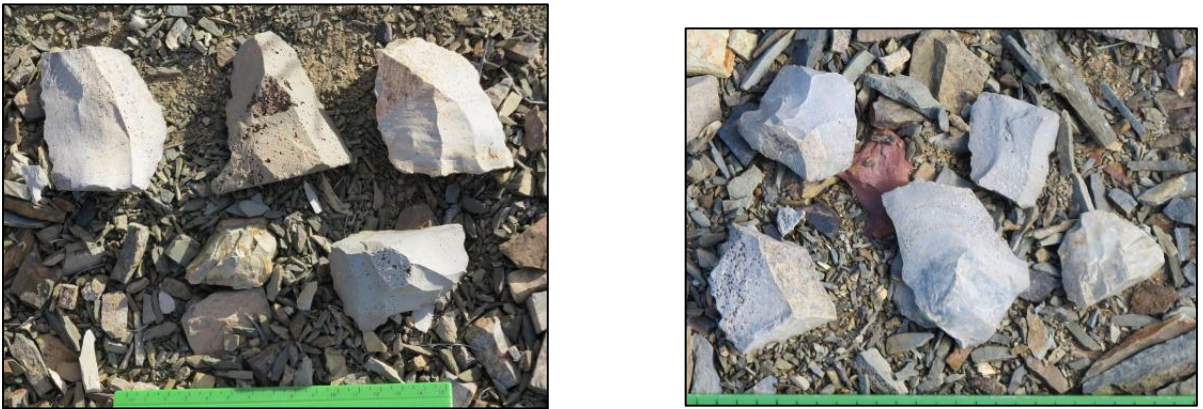
Results of the survey:

Numerous Stone Age artefacts were scattered in varying densities over most of the northern part of the affected area (Figure 2) and a few scattered artefacts were observed in the southern part, as well as beyond the western extent of the polygon. Those in the northern part (marked in red in Figure 2) are closely associated with the presence of the Matjiesfontein chert band (Figures 5 to 8). Almost all the flakes, chunks and cores observed were manufactured from chert (Figures 12 to 16, 18), although several quartzite (Figures 16, 17, 19) and occasional hornfels artefacts were noted. It is likely that many or most of the chert artefacts were flaked in the immediate area, making this a possible factory site. There are signs of flaking on portions of the chert band on the crest of the ridge (for example Figure 7) and on chert blocks of varying sizes which lie scattered over the terrain (Figure 20). Although much of the material has moved downslope from the chert outcrop and there appears to be a mixture of MSA and LSA material, with varying degrees of weathering, the northern part of the polygon can be regarded as an archaeological site. The chert band has obviously been visited and utilised over a long period of time.

With the exception of a few quartzite artefacts outside the polygon, to the west of the small stream bed, clearly diagnostic ESA material was not observed although it does occur along the chert band in the Matjiesfontein area (pers. observation). No other archaeological remains such as organic material were noted.



Figures 12 and 13: Selection of chert artefacts. The ruler is approximately 15cm in length.



Figures 14 and 15: Selection of chert artefacts, some showing diagnostic MSA features. The ruler is approximately 15cm in length.



Figures 16, 17 and 18: Pink quartzite MSA blade fragment amongst chert artefacts; grey quartzite MSA blade fragment; chert core. The scale is in cm.



Figures 19 and 20: Flaked quartzite cobbles; flaked chert block. The ruler is approximately 15cm in length.

6. SIGNIFICANCE AND RECOMMENDATIONS

It does not seem that any formal studies of archaeological material found in association with the chert band of the Matjiesfontein Member have been done, although it must be one of the most important sources of suitable raw material for the manufacture of artefacts in the south and south-western margins of the Great Karoo. Although the material in the northern part of the affected area is chronologically mixed and is not in a stratified context, it can provide information on the types and frequencies of artefacts produced by the knapping of chert in this area. Such information on local stone tool technology is of scientific value and this probable factory site is therefore considered to be of medium to high significance.

Following consultation with experienced colleagues at Archaeology Contracts Office (ACO) Associates it is recommended that a precautionary approach be taken and that the northern area should be conserved as a heritage site (T. Hart, pers.comm.). However, if development of the proposed extension is approved, it is recommended that mitigation be undertaken before any further quarrying activities be permitted. The archaeological material should be mapped, sampled and described before a permit for the destruction of the site is issued by Heritage Western Cape (HWC). The mitigation should involve targeted sampling of the area of densest artefact distribution (L. Webley, pers.comm.). As it is unlikely that there is any depth to the artefact distribution, surface collecting rather than the excavation of material should be sufficient to obtain a representative sample. Surface sampling would involve setting up a grid and collecting all the artefacts in a specific area. Any archaeological sampling would need to be undertaken by a qualified archaeologist with a permit issued by HWC.

The southern part of the site is considered to be of low archaeological significance and no further archaeological studies or mitigation are recommended in this part of the proposed extension.

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

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8. ACKNOWLEDGEMENTS

Ms Quahnita Samie of Vidamemoria Heritage Consultants is thanked for commissioning this study and providing background information. I am grateful to Mr Tim Hart and Dr Lita Webley, ACO Associates, for discussion regarding the recommendations contained in this report. Dr John Almond, Natura Viva cc, made helpful comments on the draft.