

ARCHAEOLOGICAL INSPECTION OF A SPOIL HEAP LOCATION FOR THE KAKAMAS HYDRO ELECTRIC FACILITY, NORTHERN CAPE

(Assessment conducted under Section 38 (18) of the
National Heritage Resources Act (No. 25 of 1999) as part of an EIA)

Prepared for

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EXECUTIVE SUMMARY

The Kakamas Hydro Electric Facility has already received Environmental Authorisation but it was found after commencement that insufficient space was available for storage of excavated material. A spoil site was thus chosen and an archaeological inspection of this site was requested by SAHRA.

The site was examined on foot on 1st July 2013 and finds recorded by means of photography and GPS. The study area was generally mantled in gravel but in places ridges of bedrock protruded. Vegetation was sparse and visibility excellent.

One light scatter of Middle Stone Age artefacts was recorded, while a few isolated artefacts were also noted. Quartz artefacts appear to occur among the natural quartz gravel in places as well. A few small historical excavations, perhaps stone quarries, were noted. These are likely 20th century.

None of the finds has any heritage significance and, although the intensity and duration of impacts will be high, there is no reason why the study area should not be used as intended. No further archaeological work is required.

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1. INTRODUCTION

The Kakamas Hydro Electric Facility has already received Environmental Authorisation but it was found after commencement that insufficient space was available for storage of excavated material. A spoil site was thus chosen and an archaeological inspection of this site was requested by SAHRA. Figure 1 shows the location of the site.

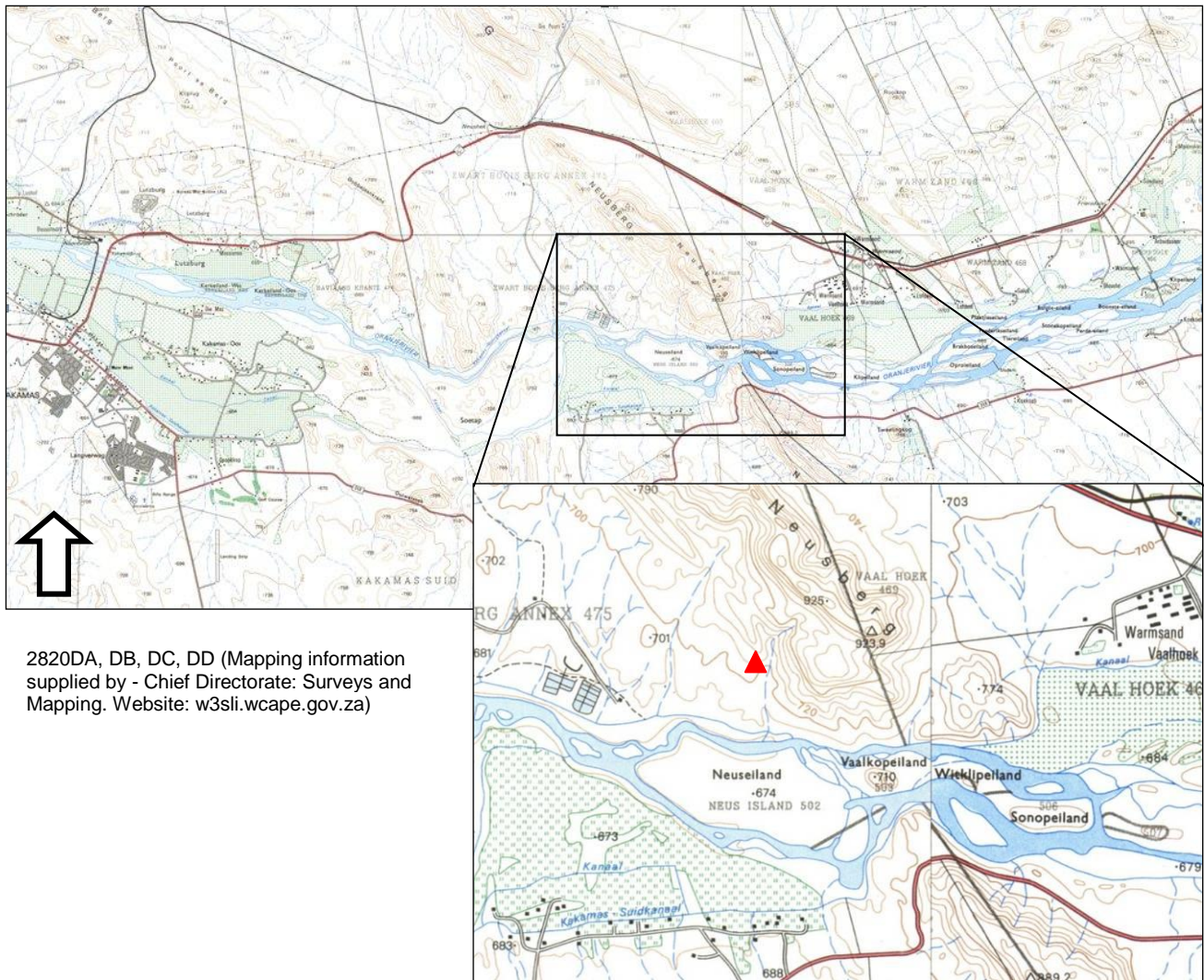


Figure 1: Map showing the location of the study area on the north bank of the Orange River and to the east of Kakamas.

2. HERITAGE LEGISLATION

The National Heritage Resources Act (NHRA) No. 25 of 1999 protects a variety of heritage resources including palaeontological, prehistoric and historical material (including ruins) more than 100 years old (Section 35), human remains older than 60 years and located outside of a formal cemetery administered by a local authority (Section 36) and non-ruined structures older than 60 years (Section 34). Landscapes with cultural significance are also protected under the definition of the National Estate (Section 3 (3.2d)). Section 38 (2a) states that if

there is reason to believe that heritage resources will be affected then an impact assessment report must be submitted. This report fulfils that requirement.

3. METHODS

3.1. Literature survey

A brief survey of available commercial reports related to the project was carried out to assess the general heritage context into which each development was to be set. This literature included published material, unpublished commercial reports and online material.

3.2. Field survey

The site was subjected to a detailed foot survey on 1st July 2013. During the survey the positions of finds were recorded on a hand-held GPS receiver set to the WGS84 datum (Figure 2). Photographs were taken at times in order to capture representative samples of both the affected heritage and the landscape settings of the proposed spoil heap.

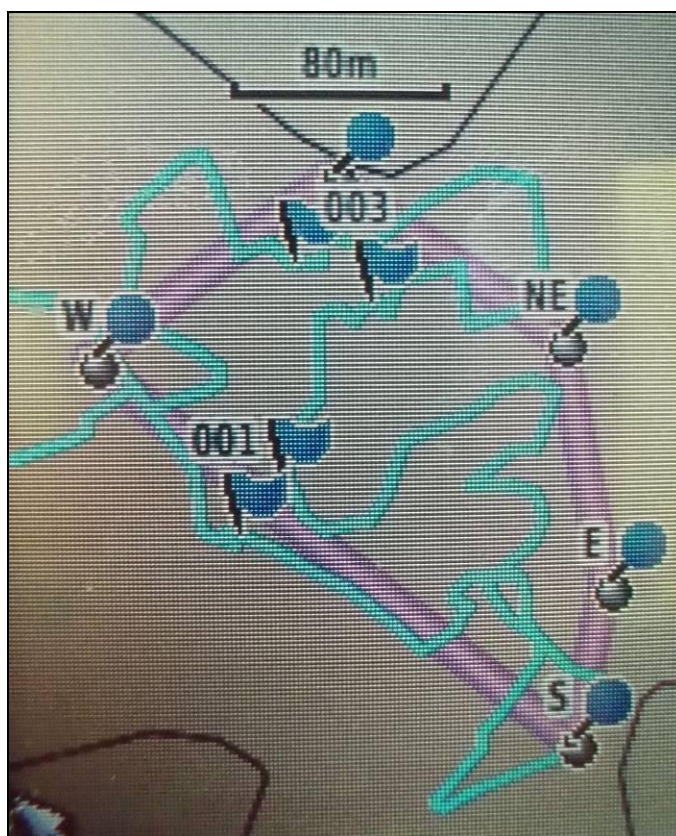


Figure 2: Plan of the study area boundary (pink polygon) and walk paths (blue lines).

3.3. Impact assessment

Since the study was not forming part of a full impact assessment process, no standardised rating scale was used to assess significance. Instead this was assessed purely on the basis of the research potential of the archaeological material.

3.4. Limitations

No limitations were experienced.

4. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The site lies at the foot of Neusberg, immediately upslope and north of the canal currently under excavation for the hydro electric facility. The site is bounded to the east by a fairly deep drainage line and to the west by a low rocky ridge. Further west the land is lower lying such that the site appears to be on a spur extending down from the hill (Figure 3).

The surface is mantled in gravel, mostly of quartz but also of the local bedrock. Pebbles of banded ironstone, the rock type commonly used for artefact manufacture in this area, were noted in one part of the study area but were rare elsewhere. Several low and eroding ridges of bedrock occur and these run parallel to the mountain and down towards the Orange River. Vegetation across the site is sparse and covers a low percentage of the ground (Figure 4). Ground visibility was thus excellent.



Figure 3: View eastwards towards the study area which lies in the pale vegetation behind the rocky ridge in the middle ground.



Figure 4: View south-eastwards across the study area showing substrate and vegetation.

5. HERITAGE CONTEXT

An earlier survey of the area for the project revealed the presence of scatters of Middle Stone Age (MSA) artefacts along the foot of Neusberg (Morris 2010). Once such scatter was mitigated prior to construction (Orton *et al.* 2013). Levallois cores in the absence of typical Early Stone Age (ESA) artefacts suggested an ascription to the MSA. The material was generally quite well weathered suggesting that it has been lying on the surface for a very long time. Artefacts like this are commonly encountered across much of the Northern Cape and have been documented in many areas where gravel coats the land surface. However, meaningful concentrations are less common.

6. FINDINGS

Several archaeological occurrences were noted in the study area – three Stone Age and one historical. These are listed in Table 1.

Table 1: List of archaeological occurrences found in the study area.

Point	GPS co-ordinate	Description	Significance
001	S 28 45 55.5 E 20 44 02.3	Scatter of about twelve stone artefacts on banded ironstone. These included a few cores and one blade. The artefacts occurred on a rocky ridge coated in quartz gravel.	Very low.
002	S 28 45 54.9 E 20 44 02.9	Occasional quartz artefacts within a dense scatter of natural quartz. It is very hard to identify artefactual stone among the natural gravel.	Very low
003	S 28 45 52.8 E 20 44 04.1	Small-scale quarry into bedrock of unknown (but almost certainly 20 th century) age. One part has an informal drystone wall to hold up the sediments and several piles of river pebbles occur around the excavations. An MSA core and blade, both on banded ironstone, were also found on one of the spoil heaps.	Very low
004	S 28 45 52.3 E 20 44 03.1	Isolated possible/probable upper grindstone fragment.	Very low

The first (point 001) was a very light and dispersed scatter of Middle Stone Age artefacts that included cores and flakes, some of the latter retouched (Figure 5 to 8). The second (point 002) was an area of dense quartz gravel that seemed to include some flakes in it. However, it was very difficult to identify artefacts amongst the natural gravel. Quartz was widely used as a material for flaking and it seems sensible that people would have collected nodules from the ground here and flaked them in an expedient manner on the spot. Point 004 was at a single isolated artefact that seems very likely to have been an upper grindstone. It was difficult to be certain since such flat slabs of rock are quite often found and this one was broken. However, the edge of what seemed like a ground depression was just preserved on the fragment found here (Figure 9). The slab was only about 3 cm thick. Other isolated artefacts were present but scarce. However, these included a core and an MSA blade with a faceted platform on one of the small spoil heaps at point 003 (Figures 10 & 11).



Figure 5: A bipolarly flaked pebble. Scale in cm. **Figure 6:** Opposite sides of a bifacial core. Scale in cm.

At point 003 there were several small excavations into the underlying bedrock. Soil and rock had been piled up in various places and an informal drystone wall built inside one of the excavations to keep the spoils out (Figures 12 & 13). Other far smaller excavations were also noted in other places in the study area, also with small spoil heaps. Scattered over the spoil heaps were large numbers of small pebbles that presumably were brought up from the Orange River gravels for some purpose – such pebbles were not present anywhere else in the study area in the sizes and numbers noted in association with these small excavations. The age of these quarries is unknown but they are unlikely to be very old – they must certainly be 20th century and they may have simply been to test the bedrock for potential larger scale quarrying for construction of farm buildings.



Figure 7: Selection of artefacts from point 001 including that in Figure 5. Scale in cm.



Figure 8: Selection of artefacts from point 001. Scale in cm.



Figure 9: View of the isolated probable upper grindstone fragment at point 004. It is angled so as to allow the sun to emphasize the hollow on the lower margin. Scale in cm.



Figure 10: The core and blade found at point 003. Scale in cm. **Figure 11:** The faceted platform on the blade.



Figure 12: One of the excavations at point 003. The informal drystone wall is visible on the right.



Figure 13: A second excavation into harder bedrock.

7. ASSESSMENT OF IMPACTS

The finds described above have very low significance and impacts to them would be of no consequence. The MSA artefacts are similar to those sampled further down slope but are present in a far lower density than they were in that location. All these finds have very little potential to inform on the past. Although they would likely be destroyed (high intensity impact) and the impacts are permanent, the very low archaeological significance of the finds suggests that no mitigation should be required (Table 2).

Table 2: Assessment of archaeological impacts for the proposed spoil area.

	Before mitigation	After mitigation
Extent	Site	-
Intensity	High	-
Duration	Permanent	-
Probability	Probable	-
Significance	Very low	-
Status	Negative	-
Reversible	No	
Cumulative impacts	The archaeological material present in the immediate vicinity is of very low significance and the loss of larger areas containing such material is not significant.	

8. CONCLUSIONS & RECOMMENDATIONS

Since no significant impacts to archaeological material will occur it is recommended that the proposed spoil area may be used as intended with no further archaeological input required.

9. REFERENCES

- Morris, D. 2010. Heritage Impact Assessment of the proposed Hydropower station on the Orange River at Neus Island on the farm Zwartbooisberg, east of Kakamas, Northern Cape. Unpublished report prepared for Aurecon South Africa (Pty) Ltd. Kimberly: McGregor Museum.
- Orton, J. Flear, W. & Webley, L. 2013. Archaeological mitigation of artefact scatters on Zwart Boois Berg Annex 475, Kakamas, Northern Cape. Unpublished report prepared for Aurecon South Africa (Pty) Ltd. St James: ACO Associates cc.