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REPORT ON SAMPLING OF A PREHISTORIC SILCRETE QUARRY AT A PROPOSED BORROW PIT 55.3L

Ptn 8 of farm Zandvlakte No 250, Bredasdorp

Prepared for

HHO Africa Pty Ltd
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Executive summary

The Archaeology Contracts Office of the University of Cape Town was appointed by HHO Africa Pty Ltd to sample a prehistoric quarry situated at a proposed laterite mine/borrow pit that is to be opened to supply material for the upgrading of the Gansbaai-Bredasdorp Road.

Unselected collections of artefactual material were obtained from 3 localities in the study area. All of these were localized concentrations of artefactual waste material associated with small silcrete outcrops.

The analysis revealed that all 3 sample areas produced similar sorts of artefacts. These were mostly very large flakes, chunks and irregular cores attributable to Early Stone Age quarrying activities. Very few formal artefacts were located apart from modified pieces (on both flakes and chunks). It is concluded that people visited the site where they used hard hammer and block on block techniques to collect material that was transported away from the site for artefact manufacture.

Further collection of material is not warranted. It is suggested that HWC issue a permit to the proponent for destruction of the remaining material.

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1 Introduction

The Archaeology Contracts Office was appointed by HHO Africa (Pty) Ltd to sample an Early Stone Age quarry site at the proposed borrow pit 55.3l situated on Ptn 8 of farm Zandvlakte No 250, Bredasdorp (Figure 1). The site was discovered by the ACO while doing a field inspection of potential borrow pits that are to provide material for the upgrading of the road from Gansbaai to Bredasdorp. This report contains the findings a project that was set up to mitigate the destruction of the site by mining activities. Although the site is fairly ephemeral, It was felt that the densest areas should be sampled to provide a reference collection of archaeological material (permit no 2005-09-005).

1.1 The study area

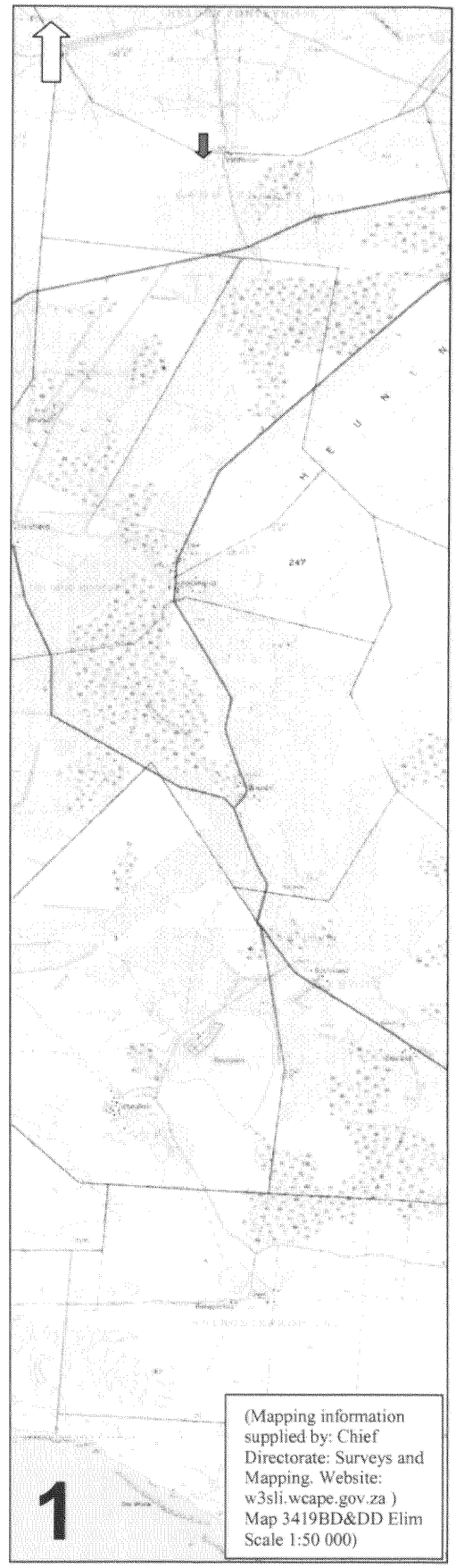
The site in question lies on a low rise in the surrounding agricultural landscape. The landowner, mr J wilson indicated to us the he had struggled to utilize the area for cultivation having left it fallow for many years. The rise consists of ferricrete nodules and rafts which will shortly become the subject of mining (Figure 2). Rafts of silcrete of variable quality cap the ferricretes in places. These outcrops show signs of having been worked by prehistoric people (large flakes removed, occasional percussion cones and missing cortex). Artefacts are widely but variably dispersed among growths of alien vegetation which cover the site.

1.2 The future impact of the mine

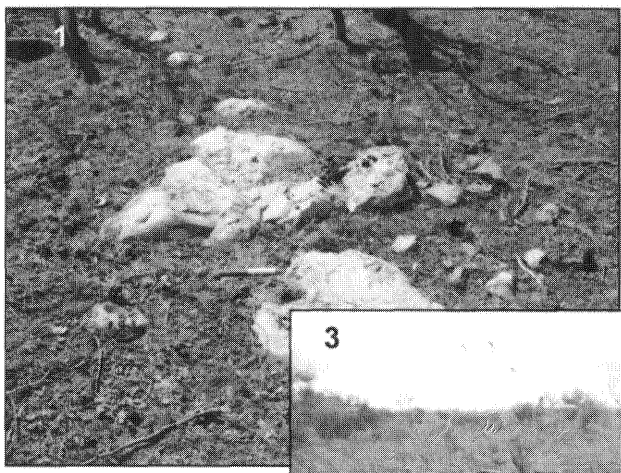
Mining operations will destroy much of the area of the site. The silcrete rafts will be excavated to expose the rich underlying laterite deposits.

2 Significance

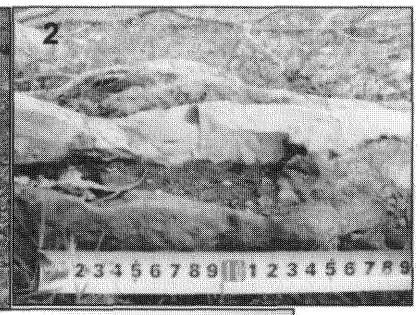
Although quite widely dispersed, the denser concentrations of material were limited to a few specific localities close to silcrete rafts. It was at these locations that the ACO sampled the material. While it is possible that some material lies buried, the laterite deposits are very hard and difficult to excavate, the material that was visible being exposed



by years of sheet erosion. The original grading of the site as having only local significance is justified on account of the thin dispersed qualities of the material, the lack of variability in the artefactual material and the almost complete absence of formal artefacts (one hand axe found outside sample areas). The importance of the sample that has been collected lies in the fact that early stone quarries are not a strongly researched or well understood area of archaeology in the Province. The material which is to be housed at Iziko Museum will stand as a reference collection for future comparative purposes.

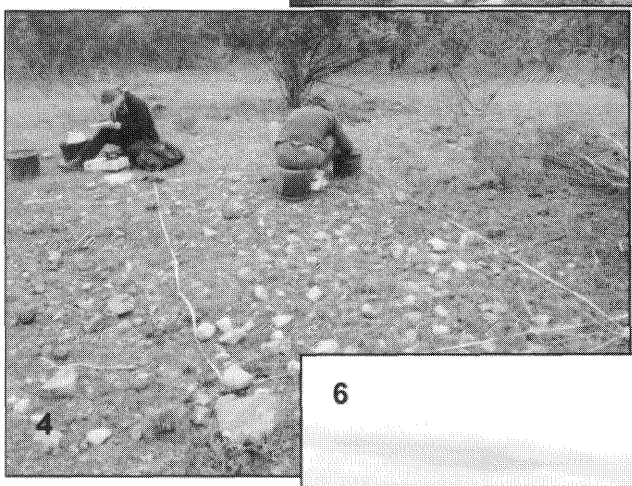


1, Silcrete raft at sample area A&B.



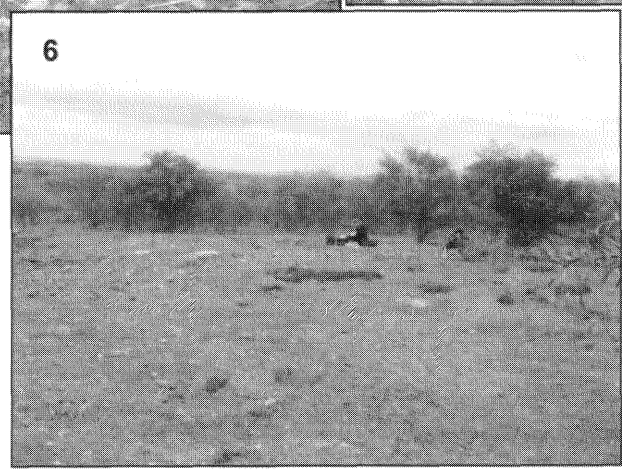
2 Fractured silcrete outcrop at A&B

3. Preparing A&B for sampling. Note the low outcrops of silcrete which form a raft over the laterite deposits.

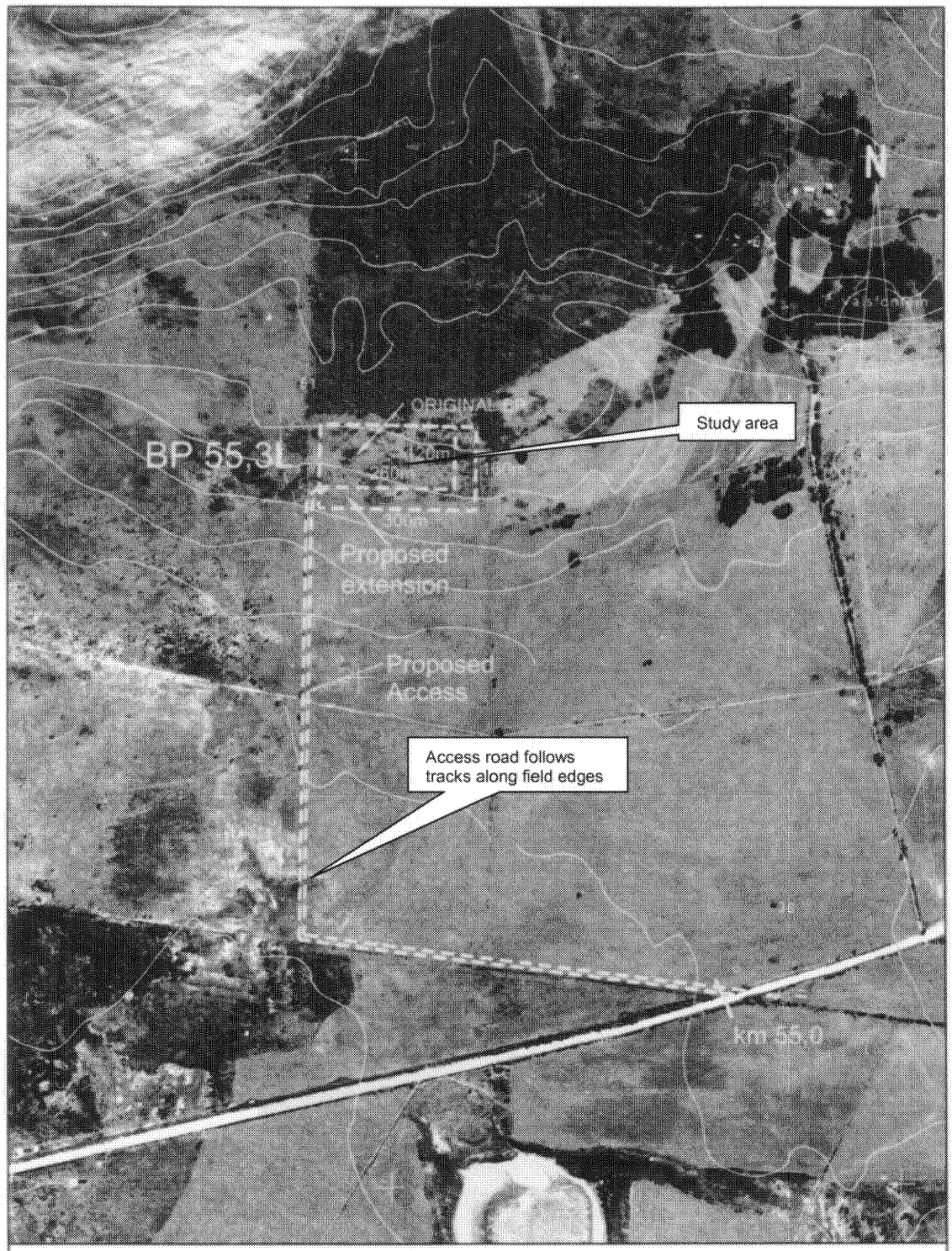


4. Sample area D being collected by Jayson Orton.

5. Sample are D showing surface artefacts and weathered rock fragments



6. Typical view of the study area with sample area D in the background.



2 GANSBAAI TO BREDASDORP
1:10 000 ORTHOPHOTO PLAN SHOWING EXTENT OF
PROPOSED BORROWPIT 55,3L AS AMENDED AUGUST 2005

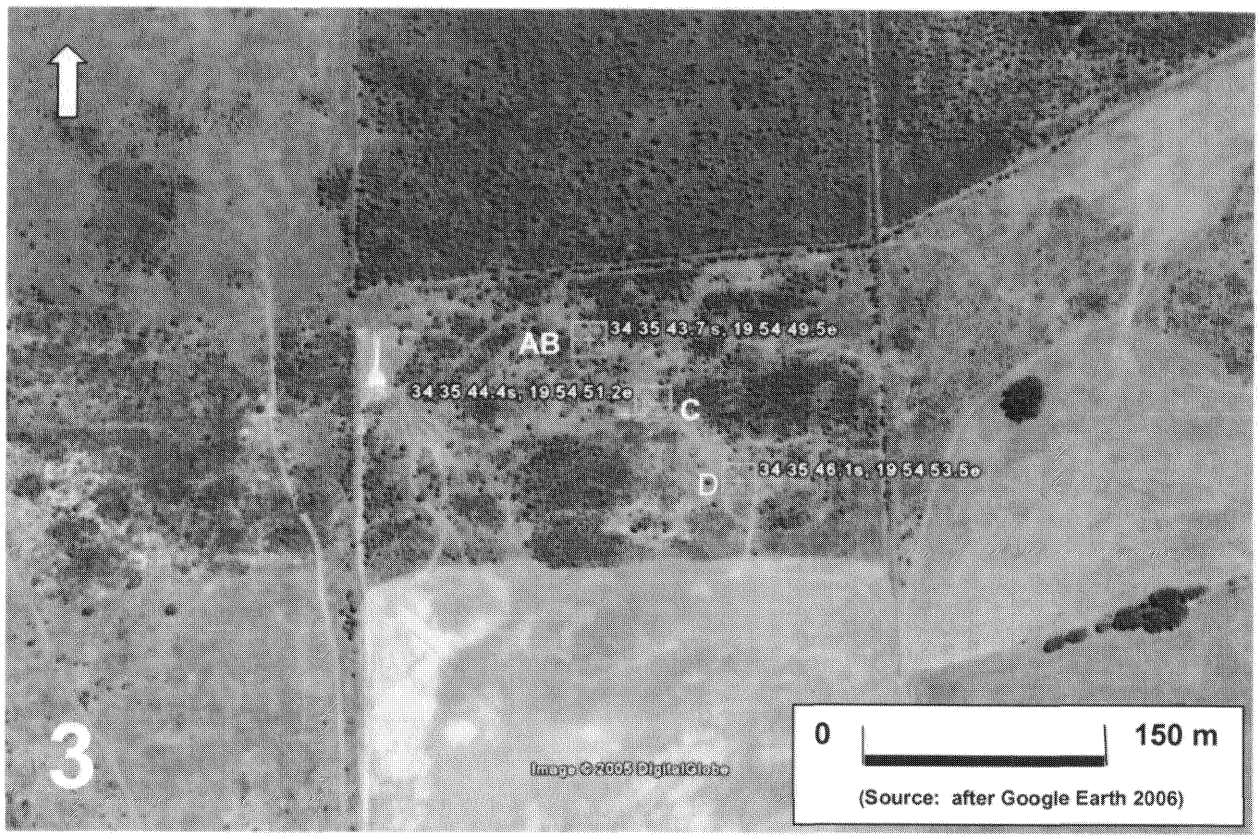
5m CONTOUR INTERVALS

3 Method

The study area was walked by 3 archaeologists to establish which concentrations would provide the best archaeological samples. Three localities (Figure 3) were identified associated with small secrete outcrops. Each of these was gridded into an area of known size as indicated below. Plates 1- 6 show the study area and the typical appearance of the site.

VFN 1 area A and B	40 square meters (area B was an extension to A)
VFN 1 area C	09 square meters
VFN 1 area D	08 square meters

An unselected collection of artefactual material was collected, labeled according to sample area and boxed then returned to the University of Cape Town for preliminary analysis.



4 Results of preliminary analysis

Appendix A contains numerical details of the artefactual analysis.

The material was not easy to classify typologically. Many of the artefacts had been heavily weathered (due to age and low quality of the silcrete). In some instances human made and natural breaks were quite difficult to distinguish, especially since the technology used on the site was crude, even by Early Stone Age standards. The methods used was what

archaeologists refer to as "block on block" – smashing of large chucks of rocks together or dropping the "hammer stone" onto the source material or by throwing it down on the surface from above the head. This method produced large jagged flakes and chunks with unclear negative flakes scars.

4.1 Cores and chucks

The category "cores" mainly consists of crude irregular cores, some of which have disc core-like qualities. The category "chunks" includes the initial cores with less than three scares. These are generally characterised by "bashed" lumps of raw material with cortex, heavily weathered surfaces, and in many cases an unclear striking-direction. Battering appears to have been a common technique to gain flakes and expose good raw material (indicated by bipolar splitting-scars and remnants of percussion cones).

Several large cores appeared to have been used as hammer stones as indicated by multiple small flake scars and abrasions on pointed or acutely angled edges.

Two artefacts (one from A and one from D) showed initial features of an invasive bifacial retouch, but being substantially undeveloped, they were classified as irregular cores (albeit with bidirectional tendencies).

4.2 Flakes and modified peices

All identified flakes were made with the hard-hammer-technique and several split flakes indicate that they were struck off the parent cores with considerable force. A surprisingly large number of flakes showed signs of modification. These are referred to as modified pieces; this category includes possible modification through natural processes such as trampling. Modification was mostly restricted to a slight retouch on the edges, just some flakes showed denticulate modification or notches. Modified edges were also observed on a number of chunks.

4.3 Manuports

The only manuport seen in the assemblage was a small oval sandstone pebble with no clear evidence for use as a hammerstone. Little damage at one point was interpreted as natural exfoliation.

4.4 Formal tools

No formal tools (other than MP's) were included in the sample. This indicates that people were visiting the sites solely for the purposes of breaking and collecting raw material that was taken elsewhere to be worked into useable artefacts.

5 Conclusion

In summary, site VFN1 with natural abundance of silcrete outcrops were visited to collect raw material for the purpose of manufacturing stone tools. The assemblages is characterised by a high number of flakes (especially with cortex), early discarded cores and unfinished, broken or failed tools. It is difficult to assign a distinct cultural affiliation to the site, however the absence of *radial* and *levallois* techniques tends to suggest predominantly Early Stone Age

(more than 300 000 years old) use of the site. The presence of denticulate and modified flakes is difficult to explain, however similar observations have been made at other ESA quarries in Namaqualand (Hart and Halkett 1994). There is some evidence (reworked cores with blades scars) that people visited the site during the Middle or even Late Stone Age, however the silcrete outcrop had lost favour as a raw material resource.

6 Recommendation

The site has now been archaeologically sampled. The lack of variation across all three of the sample areas indicate that there is little merit in returning to the site to collect more material as this will only increase the storage burden created by the material and contribute little to gaining further understanding of the place.

It is suggested that HWC consider issuing a destruction permit for the site, subject to any conditions that the Province archaeologist may require while mining is in progress.

7 Reference

Hart, T.J.G and Halkett, DJ .1994. Report On The Phase 2 Archaeological Excavations at the Namakwa Sands Project (first Phase), Vredendal District, Namaqualand., Namakwa Sands Ltd

8 Appendix A

	Silcrete	Quartzite	Fine Silcrete	Quartz	Sandstone	total
VFN 1A +1b						
Chunks	89	0	0	0	0	89
modif. Chunks	12	0	0	0	0	12
Cores	28	0	0	1	0	29
modif. Cores	0	0	0	0	0	0
Flakes	81	0	0	0	0	81
modif. Flakes	21	0	1	0	0	22
Hammerstone	0	0	0	0	0	0
Manuport	0	0	0	0	1	1
Weathered	65	0	0	0	0	65
total	296	0	1	1	1	299
VFN 1C						
Chunks	29	0	0	0	0	29
modif. Chunks	0	0	0	0	0	0
Cores	8	2	1	0	0	11
modif. Cores	0	0	0	0	0	0
Flakes	29	0	0	0	0	29
modif. Flakes	7	0	0	0	0	7
Hammerstone	0	0	0	0	0	0
Manuport	0	0	0	0	0	0
Weathered	64	0	0	0	0	64
total	137	2	1	0	0	140
VFN 1D						
Chunks	90	0	0	0	0	90
modif. Chunks	8	0	0	0	0	8
Cores	21	1	1	0	0	23
modif. Cores	3	1	0	0	0	4
Flakes	27	1	1	0	0	29
modif. Flakes	24	0	1	0	0	25
Hammerstone	1	0	0	0	0	1
Manuport	0	0	0	0	0	0
Weathered	12	0	0	0	0	12
total	186	3	3	0	0	192

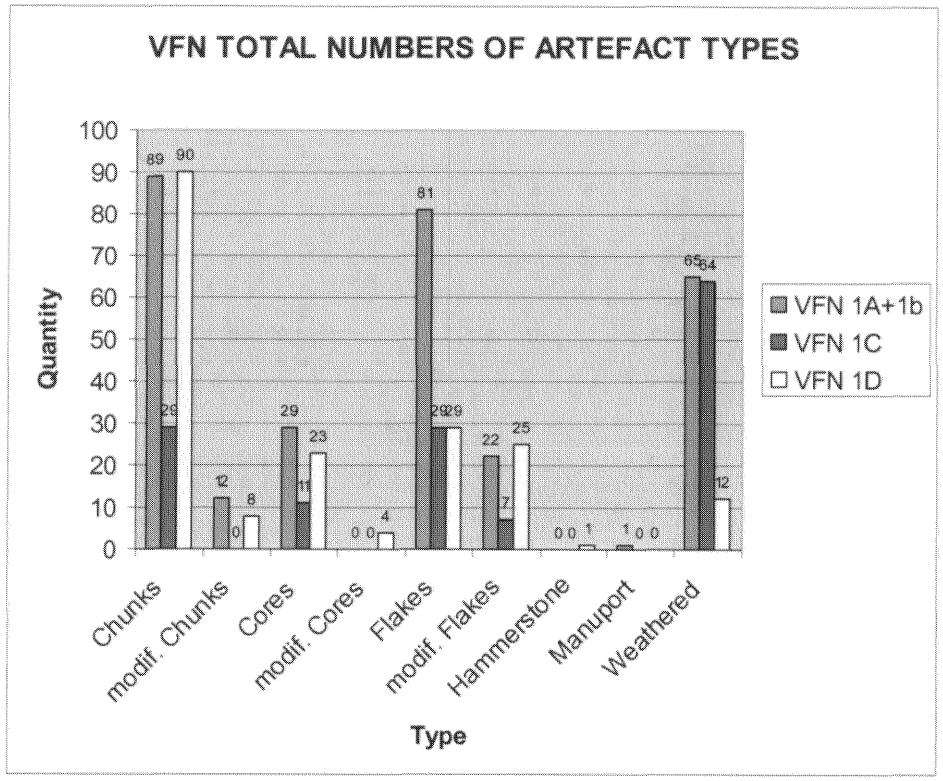

VFN TOTAL NUMBERS OF ARTEFACT TYPES
Quantity
100
90
80
70
60
50
40
30
20
10
0
89
90
29
12
0
8
29
11
23
0 0
4
81
29
29
22
7
25
0 0
1
1
0 0
65
64
12
Chunks
modif. Chunks
Cores
modif. Cores
Flakes
modif. Flakes
Hammerstone
Manuport
Weathered
Type
VFN 1A+1b
VFN 1C
VFN 1D

Plate A (top) examples of modified pieces.
Plate B (bottom) typical irregular cores