A PHASE ONE ARCHAEOLOGICAL ASSESSMENT OF THE PROPOSED LIEBENBERGS BAY MINE, VREDENDAL

Prepared for

Rency (Pty) Ltd.

September 1999

Prepared by

Archaeology Contracts Office
Department of Archaeology
University of Cape Town
Private Bag
Rondebosch
7701

Phone (021) 650 2357
Fax (021) 650 2352
Email TJG@beattie.uct.ac.za

EXECUTIVE SUMMARY

A Phase 1 archaeological assessment of the proposed Liebenberg Bay Mine, Vredendal district, has revealed the presence of 10 pre-colonial archaeological sites in the area. Of these, only 1 site (LBM 8, an MSA site) is considered to be of conservation merit and will require mitigation if mining is to take place in its immediate vicinity. It is therefore recommended that the developers be permitted to proceed with their project provided that they conserve the effected archaeological site and apply for a permit from the National Monuments Council to destroy other archaeological material.

1. INTRODUCTION

The Archaeology Contracts Office (ACO) of the University of Cape Town was commissioned by JB vW Kotze on behalf of his client, Rency (Pty) Ltd to conduct a Phase 1 archaeological assessment of Klipvley Karoo Kop 153 Portion 3 (a portion of Portion 2) in the Vredendal District, South Western Cape. Rency (Pty) Ltd. are in the process of applying for a mining permit to establish a diamond mine on the land. The location of the proposed mine (to be known as Liebenberg Bay Mine) is indicated on Figure 1. The area in question is a strip of land set back from the coast incorporating the coastal escarpment between 10 and 40 m above sea level. The diamond mining concession on the immediate shoreline to 30 m east of the high water mark is held by another mining company and is not part of the study area.

1.2 Terms of reference

The ACO was requested by the client to:

- Investigate the impact that mining will have on the archaeology of the area
- Supply a report indicating the findings of the investigation and any mitigation that may be required.

The following pages provide background information, then describe the findings of the study along with recommendations in terms of mitigation and procedure.

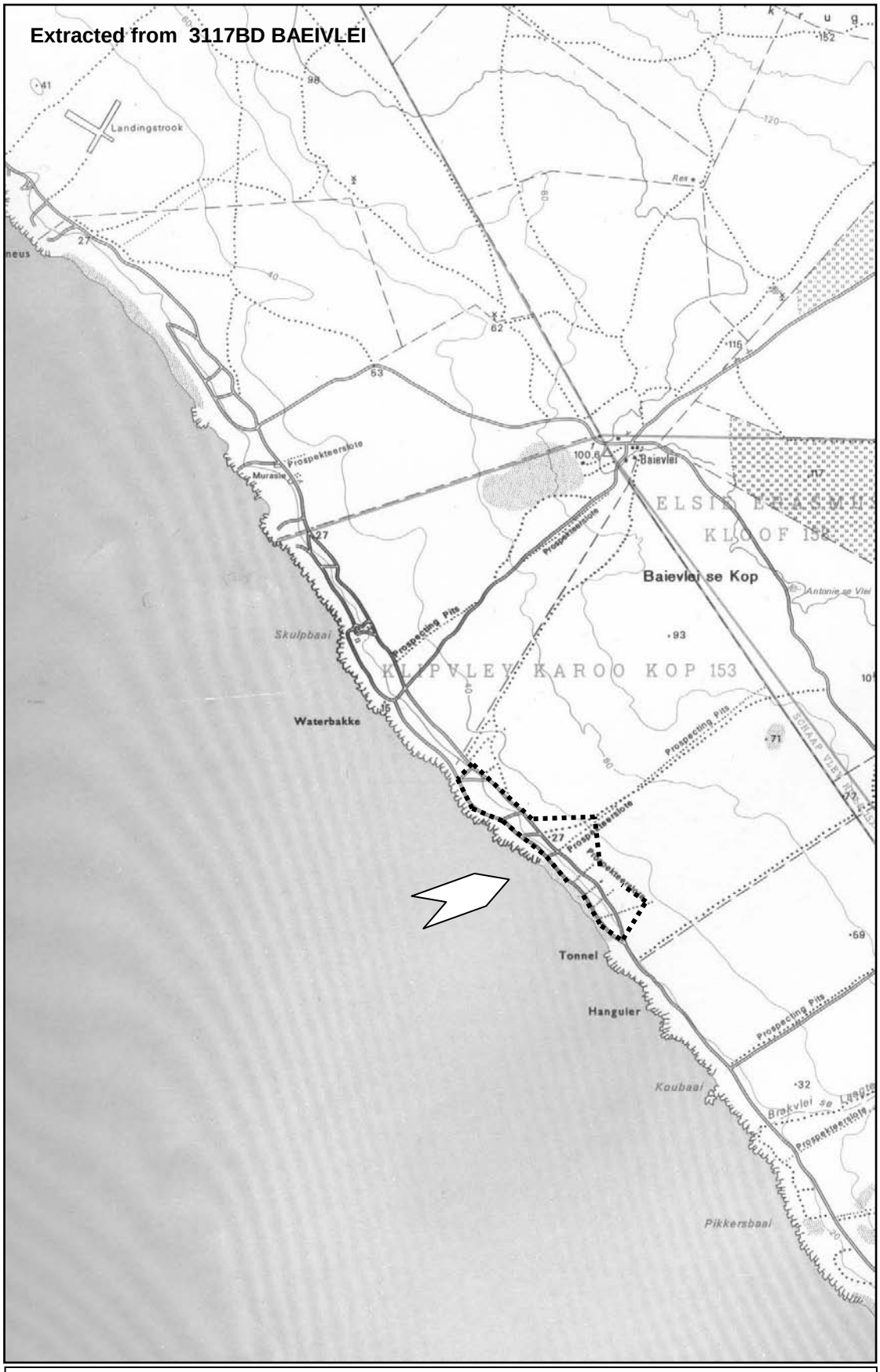
2. BACKGROUND HISTORY OF THE NORTHERN AND WESTERN CAPE

The history of the Western and Northern Cape is long and complex spanning many thousands of years. Our current understanding of the history is based on archaeological observations as well as the surviving written texts from the colonial period. Broadly, four distinct periods of this history may be defined. These are summarised below to contextualise the findings made during this study.

2.1 The Early Stone Age (ESA)

Archaeological research has demonstrated that the earliest stone artefacts in South Africa, dating to about 1,7 million years ago, are found at the Sterkfontein caves in Gauteng where they are associated with the remains of *Homo habilis*, a primitive human creature. These tools are crude by later standards and have been assigned to the Oldowan industry. At approximately 1,5 million years, distinctive stone tools called handaxes appear and are believed to coincide with the emergence of the more evolved *Homo erectus/ergaster* . These tools appear to have been made according to much the same pattern until about
200 000 years ago.

Literally millions of handaxes have been found throughout South Africa, usually in places associated with rivers, pans or springs and, on rare occasions, in caves. They were recorded at a number of locations in South Africa as early as 1881, and even then the similarities with the oldest stage of the European Palaeolithic was noted. In the western Cape, handaxes were first described from the Stellenbosch vineyards in 1899 (Peringuey 1911), and because of their abundance in that area, from about 1926, sites with these



1 LOCATION OF THE SURVEY

0 1.5km

tools were described as being part of the Stellenbosch culture. Today, handaxes are described as Acheulian, to emphasise the similarity with stone tools found particularly at St Acheul in France, and with those in the rest of Africa and parts of Europe and the Far East (Sampson 1974).

The favoured raw material for the production of Early Stone Age tools was quartzite. It is no coincidence therefore, that ESA sites are often found next to river beds where large quantities of water worn quartzite cobbles can be found. Since few stratified instances of these artefacts are found in association with organic remains, study of other aspects of life at that time remains difficult.

2.2 The Middle Stone Age (MSA)

Large cave sites discovered in the Kalk Bay mountains on the Cape Peninsula in the 1920s, contained deep deposits with large numbers of more refined stone artefacts in the lower parts of the sequences (Sampson 1974). These were recognisably different from ESA artefacts and had many similarities to artefacts found in the Palaeolithic sites of Europe. Similar kinds of artefacts have since been found on many open sites and on rare occasions, in the deposits of caves throughout South Africa. A larger selection of fine grained raw material was used for the manufacture of artefacts as new techniques of production, and secondary working into intricate tools, required more predictable flaking properties. Research has shown that these artefacts belong to a period known in South Africa as the Middle Stone Age and date to the period between 40 000 and 200 000 years. In some very rare instances where circumstances permit, fossil animal bone and marine shells have been found in association with the artefacts giving some indication of the diet and lifestyle of the makers. MSA people are thought to have been an early form of modern humans (*Homo sapiens*) who were capable of hunting large animals. Current theory is that early *Homo sapiens* evolved into fully modern form in Africa and migrated to Europe via the Middle East some 40 000 years ago (Klein 1989). It is believed that these new migrants may have been responsible for the demise of the Neanderthal populations in Europe. There has been a resurgence of interest in this period and a number of sites in the Cape are being investigated by local and international archaeological teams. Development of new dating techniques extending beyond the range of radiocarbon age determinations, is greatly enhancing this research.

2.3 The Late Stone Age (LSA)

This period has been subjected to detailed study by archaeologists. Late Stone Age people ancestral to the San (Bushmen) and the Khoekhoen (Hottentots) of early colonial times lived in southern Africa some 40 000 years ago.

During most of the Holocene (last 10 000 years) southern Africa was inhabited by small groups of San hunter-foragers who were highly mobile. They hunted with bows and arrows, snared small animals and, where groups lived close to the shore, gathered shellfish and other marine resources, a habit which resulted in the use of the term “Strandlopers” [1]. They used digging sticks, often weighted with bored stones, to find a variety of subterranean vegetable foods, particularly iridaceous bulbs. Having a

[1] It has not been proven that there were indigenous groups who lived exclusively at the coast and entirely on marine foods, although hunter-foragers may have become more dependant on them when access to traditional food sources was limited by the influx of first, Khoekhoen pastoralists, and later European settlers.

prodigious knowledge of the environment and the resources around them, their cultural repertoire included a complex belief system, aspects of which are represented in many rock painting and engraving sites in the northern and western Cape. Many paintings and engravings are understood as being closely linked with shamanistic ritual or belief (Lewis-Williams 1981)

The occurrence of sheep and pottery remains in archaeological sites dating to the last 2000 years and younger points to the appearance at that period of a new economy and way of life based on pastoralism. It seems most likely that groups of people, probably the ancestors of the Khoekhoen of colonial times adopted pastoralism, in this case with herds of fat-tailed sheep and later cattle (Smith 1987, Sealy and Yates 1994). With the advent of pastoralism, or soon afterwards, ceramic technology was introduced. While some San groups appear to have co-existed with pastoralists, it has been suggested that hunter-foragers were marginalised moving to areas where grazing opportunities were less attractive to pastoralists (Parkington et al 1986). The precise origin of early stock keeping and ceramic technology in southern Africa is still unclear but it is suggested that it was introduced from the north.

2.4 The Colonial Period

When the Dutch colonists arrived to set up a replenishment station at the Cape in 1652, they encountered several Khoekhoen groups. Some of these groups lived for part of the year on the Cape Peninsula as part of their seasonal round, while the larger groups grazed herds of sheep and cattle in the Tygerberg Hills and Cape Flats and further afield.

First contact between Europeans and indigenous southern African pastoralist groups had however occurred much earlier when Portuguese mariners sailing down the coast in the 15th and 16th centuries had bartered supplies of meat from the Khoekhoen that they encountered at places such as Saldanha Bay (Smith 1985).

With the increase of shipping rounding the Cape, it was inevitable that some ships would be wrecked. Encampments were set up by the survivors of such wrecks, and they often recount meeting and trading with the indigenous groups (Raven-Hart 1967, Smith 1985) so that by the time that Van Riebeeck arrived, a history of contact had already been established.

At first the relationship between the Dutch and the Khoekhoen was one of co-operation, with a great deal of bartering taking place primarily to secure regular supplies of fresh meat. However, as the colony grew and free burghers were granted lands further away from Cape Town, grazing lands previously available to the Khoekhoen were encroached upon. The conflict for land began a process of attrition which, when accompanied by aggressive government policies and several deadly smallpox epidemics, broke down the indigenous population and it's political structures. Those who survived were pressed into service as farm labour or settled around several large mission stations that had been established in the Cape.

According to the writings of early colonists, it appears that some San groups still existed in the Cape well into the colonial period. They pursued a largely hunting and foraging lifestyle and were often encountered in the more mountainous regions where there was less possibility of conflict with either the Khoekhoen or Dutch settlers (Parkington et al 1986). In the Roggeveld and further inland in the Karoo, the San suffered from

repeated commando raids from the 1770s, but remnant groups maintained degrees of independence for another century (Deacon and Dowson 1996). Namaqualand and the upper Karoo were amongst the least desirable parts of the subcontinent in terms of early colonial penetration, and some Khoekhoen and San continued aspects of their traditional way of life and cultural repertoire here until they were displaced in the 19th century. The accounts of early travellers through Namaqualand, most notably that of Robert Jacob Gordon in 1779, clearly attest to the presence of indigenous hunter-forager and pastoralist groups in these areas (Raper & Boucher 1988). Similarly, the invaluable Bleek and Loyd records from people living in the Karoo in the 1870s provide insights into /Xam San life and folklore on the eve of their extinction (Deacon and Dowson 1996). The Nama, originally one of the Khoekhoen groups met by Gordon, still practice a form transhumant pastoralism in reservations in Namaqualand today.

The mountainous terrains of the Cape Fold Belt provided refuge in the early colonial era for Drosters (run-away slaves), many of whom forged links with the independent Khoesan in the area (Penn 1994). Colonial settlement was extended inland into the Roggeveld and the Hantam (Calvinia) in the 18th century.

3. METHOD

Archaeologists rely on their ability to recognise stone artefacts, the most common indicator of the activities of early people on the landscape. This is a specialist skill based on experience and in-depth local knowledge of rock types and their fracturing qualities. Fragments of burnt animal bone, and middens containing specific kinds of shellfish along with ash and sometimes pottery, ostrich egg fragments, beads and other items are also indicators that archaeologists look for when searching for and assessing the significance of archaeological sites. Hence, finding archaeological sites is based on the powers of observation of the archaeologist, combined with rigorous searching of the landscape.

The area we were required to assess, was divided into conveniently sized blocks, each of which was searched by walking a zig-zag search pattern. Special attention was paid to old propecting trenches which could provide us with information about sub-surface conditions, or buried archaeological material. Defineable archaeological sites were plotted on a 1:10000 orthophoto and details were recorded on standard site record forms. The sites were graded in terms of the new guidelines presented in the South African Heritage Resources Act of 1999.

3.1 Restrictions

No restrictions were experienced during the course of the work. Ground visibility was good and surface archaeological material was clearly visible. Since there are no remote sensing methods currently available for detecting buried sub-surface archaeological deposits of the kinds that are common on the west coast, all our observations are based on surface indications.

4. FINDINGS

4.1 The shoreline area

The most potentially archaeologically sensitive zone, that which lies immediately back from the high tide mark, is outside the mine development area and therefore outside of the jurisdiction of this report. This zone has already been severely negatively impacted by other concession holders to the extent that very few archaeological sites have survived.

4.2 Proposed mining area

Although the proposed mining area has not been heavily impacted in the past (apart from prospecting by De Beers in 1961), it lies mainly on a gradient that is too steep and exposed to have been attractive to Late Stone Age people. For this reason very few sites from LSA time period were found. Evidence of Middle and Early stone age material was found in almost every area that had been subject to erosion or deflation. Of these, only one site is considered to be potentially conservation-worthy. Details of the archaeological sites that were found are presented below. Although we did examine the coastal strip to get an idea of the kinds of areas that were sensitive, only sites that were recorded within the mining area are commented on below. Site locations are shown in Figure 2.


Extracted from 3117BD 19&20 KOUBAAI
Waterbake
2
3
5
8
6
7
13
15
16
17
Tomtel

4.3 Archaeological sites

Site LBM 2

A scatter of MSA stone artefacts exposed in an eroded vehicle track. The material consisted predominantly of quartz waste. A single prepared platform flake with denticulation was noted. The scatter, being spread along the length of the vehicle track may be partially outside the mine boundary.

Impact: Potentially high. The site will be impacted if earthmoving activity takes place in the area.
Significance: Low (grade 3). The site is not of high research potential and has little further to contribute to local knowledge of the area.
Mitigation: None required.

Site LBM 3

A small scatter of MSA artefacts in a sheet eroded area on the coastal ridge. The material has deflated onto the underlying calcrete layer. The material consists predominantly of quartz waste. A silcrete retouched flake and a triangular MSA flake were noted**.**

Impact: Potentially high. The site will be impacted if earthmoving activity takes place in the area.
Significance: Low (grade 3). The site is not of high research potential and has little further to contribute to local knowledge of the area.
Mitigation: None required.

Site LBM 5

Old sievings from a prospecting excavation include quartz waste, and silcrete and hornfels flakes. No bone, shell or other material was seen.

Impact: Potentially high. The site will be impacted if earthmoving activity takes place in the area.
Significance: Low (grade 3). The site is not of high research potential and has little further to contribute to local knowledge of the area.
Mitigation: None required.

Site LBM 6

An ephemeral scatter of indeterminate quartz flakes brought to the surface by the burrowing activities of meerkats.

Impact: Potentially high. The site will be destroyed by earthmoving activity if this takes place in the area.
Significance: Low (grade 3). The site is not of high research potential and has little further to contribute to local knowledge of the area.
Mitigation: None required.

Site LBM 7

An ephemeral scatter of quartz flakes and limpet shells (*Patella granatina* and *Patella granularis*) in soils brought to the surface by meerkats.

Impact: Potentially high. The site will be impacted if earthmoving activity takes place in the area.

Significance: Low (grade 3). The site is not of high research potential and has little further to contribute to local knowledge of the area.
Mitigation: None required.

Site LBM 8

Large quantities of stone artefacts, ostrich eggshell shell and shell (*Patella granularis, Patella granatina* as well as *Choromytilus meridionalis*) were found in tailings from a prospecting trial trench. Bone found in the tailings appears to be mineralised. This may be an indication that a buried MSA midden with preservation of shell, ostrich egg and bone may be buried in the vicinity. If this is the case, the site is extremely rare and very important.

Impact: Potentially high as spatial integrity, context and material will be disturbed by earthmoving.
Significance: High (grade 1). The importance of the site will have to be confirmed by further exploratory excavation. Until such time this is done, it must be given a high significance rating until proved otherwise. Well preserved MSA sites are of national and international research importance.
Mitigation: This is a sensitive area and conservation measures will have to be put in place. An area of a radius of 100 m from the identified material should be conserved. When future mining operations reach this area, an archaeologist will need to be present to conduct trial excavations and divert earthmoving machinery if this is required. The client may decide to conserve the effected area, or at his expense, hire an archaeological team to excavated and remove the archaeological material to the satisfaction of the National Monuments Council or the South African Heritage Resources Agency (SAHRA) prior to continuing with mining at this location.

Site LBM 13

An ephemeral scatter of quartz and quartzite MSA artefacts exposed in a prospecting trench.

Impact: Potentially high. The site will be impacted if earthmoving activity takes place in the area.
Significance: Low (grade 3). The site is not of high research potential and has little further to contribute to local knowledge of the area.
Mitigation: None required.

Site LBM 15

An area deflated and de-vegetated by trial prospecting revealed MSA artefacts of silcrete, quartzite and quartz lying on a calcrete surface. The artefacts included many quartz chips and chunks, some cores, and a faceted platform flake.

Impact: Potentially high. The site will be impacted if earthmoving activity takes place in the area.
Significance: Low (grade 3). The site is not of high research potential and has little further to contribute to local knowledge of the area.
Mitigation: None required.

Site LBM 16

A scatter of MSA artefacts in a bare area scraped by prospectors. Apart from waste, the assemblage included a very large quartzite blade, some retouched flakes and several faceted platform flakes.

Impact: Potentially high. The site will be impacted if earthmoving activity takes place in the area.
Significance: Low (grade 3). The site is not of high research potential and has little further to contribute to local knowledge of the area.
Mitigation: None required.

Site LBM 17

Tailings from a prospecting trench contain a weathered flaked cobble (ESA) and a small quartz bi-face.

Impact: Potentially high. The site will be impacted if earthmoving activity takes place in the area.
Significance: Low (grade 3). The site is not of high research potential and has little further to contribute to local knowledge of the area.
Mitigation: None required.

5. CONCLUSION

As a result of this, and other work conducted by the ACO in the Vredendal district, we are able to draw a number of conclusions. Middle and Early Stone Age material is very common in the region. Occurrences have been recorded at Koekenaap, along the banks of the Olifants river, at Namakwa sands as well as in virtually every borrow pit and quarry along the length of the road servicing Namakwa Sands (Hart and Lanham 1997). In any place where the ground surface has been quarried or deflated, such material is visible. For this reason we believe that the MSA and ESA stone scatters we have recorded at the Liebenbergs Bay Mine development area are all aspects of a ubiquitous archaeological background and do not warrant any further mitigation on the part of the developers. We have identified one area as being potentially important as it may contain and identifiable MSA with not only stone tools but also other organic remains (bone, shell, and eggshell).

Most of the LSA sites appear to have been confined to the immediate shore line below the coastal ridge on which the bulk of mining activities will take place. Sadly, this shoreline area has been ravaged by previous mining activities. Apart from a few remnant scatters and lenses, most of the sites have been destroyed.

The finding of this report is that the negative impact of the proposed mining on archaeological material will be minimal. It is suggested that Rency (Pty) Ltd. be permitted to commence their operation provided that they undertake to comply with the following recommendations:

6. RECOMMENDATIONS

1. Since all archaeological material is protected by the South African Heritage Resources Act of 1999 and partially by the National Monuments Act of 1969 as amended, the client must approach the National Monuments Council (NMC) for a permit to destroy archaeological material with specific reference to sites LBM 2,3,5,6,7,13,15,16,17. A copy of this report should be sent to the NMC to support the application. The NMC regional manager, Ms Laura Robinson, may be contacted at telephone (021) 4624502 and fax (021) 4624509 in this regard.

2. Site LBM 8 is potentially sensitive and will have to be conserved or mitigated if the area in which it lies is to be mined. An area with a radius of 100 m from the identified material should be conserved. When future mining operations reach this area, an archaeologist will need to be present to conduct trial excavations to delimit the precise extent of the site and explore future options. This can be quickly accomplished if the mine is prepared to assist with mechanical excavation. Depending on the outcome, the client may decide to conserve the effected area, or at his expense, hire an archaeological team to excavate and remove the archaeological from the path of mining. This will have to be done in consultation with, and to the satisfaction of the existing National Monuments Council or the South African Heritage Resources Agency (SAHRA) which will come into operation in 2000.

3. Any human skeletal material or archaeological material found during mining operations must be reported to either the National Monuments Council, the South African Museum or the ACO at the University of Cape Town. The remains should be left in place and machinery should diverted until an archaeologist is able to come and remove the find.

7. PROFESSIONAL TEAM

Fieldwork	Tim Hart Peter Nilssen
Report	Tim Hart Dave Halkett

8. REFERENCES

Deacon, J. ed. (1996) Monuments and Sites in South Africa. ICOMOS Central Cultural Fund Publication No. 206. National Committee of ICOMOS: Sri Lanka.

Deacon, J. & Dowson, T.A. 1996. *Voices from the past: /Xam Bushmen and the Bleek and Lloyd collection*. Johannesburg: University of the Witwatersrand Press.

Deacon, H.J. & Deacon, J. 1999. *Human beginnings in South Africa: uncovering the secrets of the stone age.* Cape Town, David Philip.

Halkett, D.J. & Hart, T.J.G. 1991. West Coast Heavy Mineral Sand Project: archaeological report. Unpublished report prepared for the Environmental Evaluation Unit and Anglo American. UCT Archaeology Contracts Office.

Halkett, D.J. & Hart, T.J.G. 1993. Namaqua Sands main access road: archaeological survey. Unpublished report prepared for the Environmental Evaluation Unit. UCT Archaeology Contracts Office.

Halkett, D.J. & Hart, T.J.G. 1993. Report on the monitoring of Borrow Pit #3: Namaqua Sands. Unpublished report prepared for Namakwa Sands Ltd. UCT Archaeology Contracts Office.

Halkett, D.J. & Hart, T.J.G. 1993. Excavations at six archaeological sites in the Near-Shore Diamond Mining Area, Brandsebaai, Namaqualand. Unpublished report prepared for De Beers Namaqualand Mines Division. UCT Archaeology Contracts Office.

Halkett, D.J., Hart , T.J.G & Parkington, J.E. 1994. Phase 2 archaeological excavations at the Namakwa Sands Project (first phase), Vredendal district, Namaqualand. Unpublished report prepared for Namakwa Sands. University of Cape Town: Archaeology Contracts Office.

Hart, T.J.G & Lanham L. 1997. Phase 2 archaeological excavations at Namakwa Sands Site MS 2. Unpublished ACO report prepared for Namakwa Sands Ltd.

Lewis-Williams, J.D. 1981. *Believing and seeing: symbols and meanings in southern San rock paintings.* London: Academic Press.

Klein, R.G. 1989. *The human career*. University of Chicago Press: Chicago & London.

Parkington, J.E., Yates, R., Manhire, A. & Halkett, D. 1986. The social impact ofpastoralism in the south western Cape. *Journal of Anthropological Archaeology* 5: 313–329.

Penn, N. 1994. Drosters of the Bokkeveld and Roggeveld, 1770-1800. In E.A. Eldredge & F. Morton, (Eds) *Slavery in South Africa: Captive Labour on the Dutch Frontier.* Pietermaritzburg: University of Natal Press.

Péringuey, L. 1911. The Stone Ages of South Africa as represented in the collection of the South African Museum. *Annals of the South African Museum* 8: 180-201.

Robertshaw, P.T. 1978. Khoi and San: Aspect of the later prehistory of the western Cape, South Africa. Unpublished Ph.D dissertation, University of Cambridge.

Raven-Hart, R. 1967. *Before Van Riebeeck*. Cape Town: Struik.

Sampson, C.G. 1974. *Stone age archaeology of southern Africa*. New York Academic Press.

Sealy, J. & Yates, R. 1994. The chronology of the introduction of pastoralism to the Cape, South Africa. *Antiquity* 68: 58-67.

Smith, A.B. 1985. Excavations at Plettenberg Bay, South Africa of the campsite of the survivors of the wreck of the *Sao Gancalo* 1630. *International Journal of NauticalArchaeology and Underwater Exploration* 15.1: 53-63

Smith, A.B. 1987. Seasonal exploitation of resources on the Vredenburg Peninsula after 2000BP. In Parkington, J.E. and Hall, M.J. (eds) Oxford: BAR International series 332 (ii).

Smith, A.B. 1995. Archaeological observations along the Orange River and its hinterland. in: Smith, A.B. ed, *Einiqualand: studies of the Orange River frontier.* Cape Town, UCT Press. 265-307.