9 September 2022

ECC Environmental
Windhoek
Namibia

For attention: Lester Harker

ARCHAEOLOGICAL ASSESSMENT OF NAVACHAB TSF 3, ERONGO REGION, NAMIBIA

DECLARATION

I hereby declare that I do:

(a) have knowledge of and experience in conducting archaeological assessments, including knowledge of Namibian legislation, specifically the National Heritage Act (27 of 2004), as well as regulations and guidelines that have relevance to the proposed activity;

(b) perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;

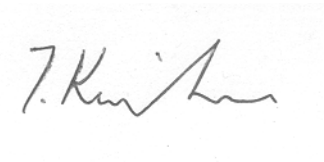
(c) comply with the aforementioned Act, relevant regulations, guidelines and other applicable laws.

I also declare that I have no interests or involvement in:

(i) the financial or other affairs of either the applicant or his consultant

(ii) the decision-making structures of the National Heritage Council of Namibia.

Note: The purpose of this report is to assist the client in gaining consent under the National Heritage Act (27 of 2004) to proceed with mineral exploration and related activities at specific locations as defined herein. The report must always be quoted in full, and not in part, summary or précis form. The report may not be distributed or used for any other purpose by the client, the National Heritage Council of Namibia or any other party and remains the copyright of the author.



John Kinahan, Archaeologist

EXECUTIVE SUMMARY

An archaeological field survey and assessment was carried out on the proposed site of a new tailings storage facility, TSF 3, at Navachab Gold Mine near Karibib in the eastern Erongo Region of Namibia. A total of 3 minor archaeological sites were located in the course of the survey. The sites will be buried as tailings accumulate in the shallow valley selected for this purpose. The sites represent ephemeral and relatively recent settlement; they contain no significant surface remains and it is therefore recommended that the development could proceed without mitigation.

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1. INTRODUCTION

1.1 Background

Environmental Compliance Consultancy (ECC) is carrying out an environmental assessment of the proposed site of a new tailings storage facility, TSF 3, at Navachab Gold Mine near Karibib in the eastern Erongo Region of Namibia. QKR Namibia Navachab Gold Mine (Pty) Ltd is an established mainly open-cast operation extracting relatively low grade ore from marbles of the prevailing Karibib Formation. A survey carried out in 2009 established that the mine lease area was of moderate to low archaeological significance[1].

Archaeological remains in Namibia are protected under the National Heritage Act (27 of 2004) and National Heritage Regulations (Government Notice 106 of 2005), and ECC appointed the undersigned, J. Kinahan, archaeologist, to carry out an assessment of the proposed TSF 3 site. A field survey was carried out on 1st September 2022. The following report sets out the results of the survey and an assessment of the of the finds against the background of previous work in the same area.

1.2 Terms of Reference

The primary task of the archaeological assessment reported here was to identify sensitive archaeological sites that could be affected by mine development activities. The archaeological assessment forms the basis of recommended management actions to avoid or reduce negative impacts, as part of the environmental assessment. The study is intended to satisfy the requirements of the relevant legislation and regulations, in which the process of review and clearance may require further, or different mitigation measures to be adopted.

Specifically, the archaeological assessment addresses the following primary elements:

1. The identification and assessment of potential impacts on archaeological resources, including historical sites arising from the proposed exploration and mining activities.
2. The identification and demarcation of possibly sensitive archaeological sites that may require special mitigation measures to eliminate, avoid or compensate for likely destructive impacts.
3. Formulation and motivation of specific mitigation measures, if required, for the project to be considered by the authorities for the issuance of clearance certificates.
4. Identify permit requirements as related to the removal and/or destruction of archaeological resources.

1.3 Assumptions & Limitations

Archaeological assessment relies on the indicative value of surface finds recorded in the course of field survey. Field survey results are augmented wherever possible by inference from the results of surveys and excavations carried out in the course of previous work in the same general area as the proposed project, as well as other

[1] Kinahan, J. 2009. *Archaeological reconnaissance of Navachab Gold Mine lease area, Erongo Region*, QRS Job 114, commissioned by AngloGold Ashanti Namibia (Pty) Ltd.

sources such as historical documentation. Based on these data, it is possible to predict the likely occurrence of further archaeological sites with some accuracy, and to present a general statement (see Archaeological setting, below) of the local archaeological site distribution and its sensitivity. However, since the assessment is limited to surface observations and existing survey data, it is necessary to caution the proponent that hidden, or buried archaeological or palaeontological remains might be exposed as the project proceeds

2. LEGAL REQUIREMENTS

The principal instrument of legal protection for archaeological/heritage resources in Namibia is the National Heritage Act (27 of 2004). Part V Section 46 of the Act prohibits removal, damage, alteration or excavation of heritage sites or remains. Section 48 *ff* sets out the procedure for application and granting of permits such as might be required in the event of damage to a protected site occurring as an inevitable result of development. Section 51 (3) sets out the requirements for impact assessment. Heritage sites or remains are defined in Part 1, Definitions 1, as "any remains of human habitation or occupation that are 50 or more years old found on or beneath the surface". Also relevant are the National Heritage Regulations, Government Notice (GN) 3490 of 2005.

It is important to be aware that no specific regulations or operating guidelines have been formulated for the implementation of the National Heritage Act in respect of archaeological assessment. However, archaeological impact assessment of large projects has become accepted practice in Namibia during the last 25 years, especially where project proponents need also to consider international guidelines. In cases where such guidelines are applicable, those of the IFC, specifically Guidance Note 8: Cultural heritage, are most appropriate. Of these guidelines, those relating to project screening, baseline survey and mitigation are the most relevant.

Archaeological impact assessment in Namibia may also take place under the rubric of the Environmental Management Act (7 of 2007) which specifically includes anthropogenic elements in its definition of environment. The list of activities that may not be undertaken without Environmental Clearance Certificate: Environmental Management Act, 2007 (Govt Notice 29 of 2012), and the Environmental Impact Assessment Regulations: Environmental Management Act, 2007 (Govt Notice 30 of 2012) also apply to the management of impacts on archaeological sites and remains whether these are considered in detail by the environmental assessment or not.

3. ARCHAEOLOGICAL SETTING

The western parts of Namibia are recognized as a globally important archaeological landscape, having abundant evidence of human settlement spanning the last one million years.[2] Of particular interest and significance are archaeological sites dating to within the last 12 000 years, a period of marked climatic instability that brought

[2] Mitchell, P. 2002. *The archaeology of southern Africa.* Cambridge: Cambridge University Press.

many changes in human settlement and subsistence behaviour.[3] During the last 2 000 years, hunter-gatherer communities in this area acquired domestic sheep and pottery, establishing a highly productive semi-nomadic pastoral mode of subsistence. Field survey and analytical methods have been developed in the last few decades of research in this area, to obtain the maximum yield of high precision data from the available archaeological sites. Each new field survey and investigation, including small area investigations such as that reported here, draws from and builds upon previous work, leading to an improved understanding of the regional archaeology.[4]

The survey at Navachab in 2009[5] focussed on valley fill terraces of the Kachab River on EPL-999 in the northern part of the farm Navachab (58), and did not include the area of the proposed TSF 3. The earlier survey located a total of 17 archaeological and historical era heritage sites ranging in age from the Late Pleistocene to the colonial period. The sites were of generally low archaeological significance (ranked 2 – 3, see Table 1, below) did not merit further investigation. Following the survey a special study was carried out at the request of AngloGold Ashanti on the nearby farm Habis (71), to investigate an unusual find comprising a large number of late precolonial clay pots that were hidden in a system of caves located in a prominent diorite hill.[6] The Habis assemblage raised the possibility of further significant finds in the Karibib area.

4. OBSERVATIONS

A field survey was carried out over the proposed TSF 3 site to locate and document its archaeological features. The terrain is typical of the Namibian central and western area, with subdued outcrops of Damara schist and syn- to post-Tectonic granite and pegmatite features, on a landscape otherwise characterized by extensive aeolian sand sheets and alluvial deposits marking the courses of ephemeral streambeds. Rainfall averages about 250mm/$y^{-1}$and vegetation is consequently limited to sparse thorn scrub, except along drainage lines.

Figure 1 indicates the regional archaeological setting of the Navachab Gold Mine with inset maps showing the extent of the mine leases and the location of the proposed TSF 3 site, respectively. In the field, archaeological sites were located by hand-held GPS, and recorded as to size, estimated age and affinity and then assessed as to their archaeological significance and vulnerability (S/V) using the standard parallel scales set out in Table 1. The sites are listed within the report with their location and S/V ranking.

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[3] Deacon, J. & Lancaster, N. 1988. *Late Quaternary palaeoenvironments of southern Africa.* Oxford: Oxford University Press.

[4] Kinahan, J. 2020. *Namib: the archaeology of an African desert*. Windhoek, University of Namibia Press

[5] Kinahan, J. 2009. *Archaeological reconnaissance of Navachab Gold Mine lease area, Erongo Region*, QRS Job 114, commissioned by AngloGold Ashanti Namibia (Pty) Ltd.

[6] Kinahan, J. & Kinahan, J. 2011. *An unusual assemblage of early 18th century Khoe pottery from the Karibib District in central western Namibia.* QRS Job 120, Commissioned by AngloGold Ashanti Namibia (Pty) Ltd.

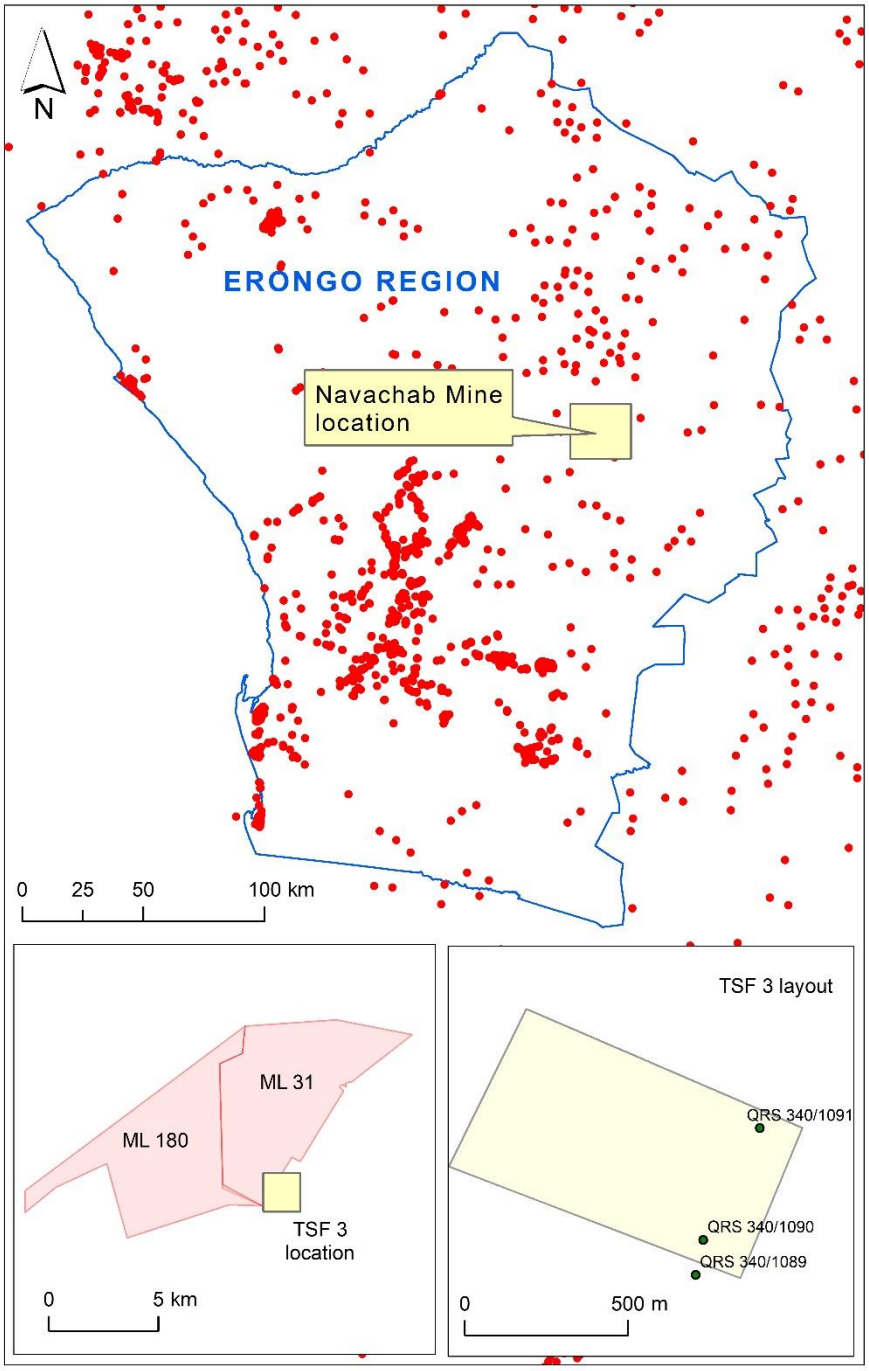

Figure 1: The regional archaeological setting (distribution of sites shown as red dots) with the position of the Navachab Mine indicated. The first inset map shows the extent of the mine leases and the location of the proposed TSF 3 while the second inset map shown the location of the three archaeological sites found during the TSF 3 field survey.

QRS 340/1089

Site coordinates: Lat. -22,0031 Long. 15,76875
Setting: On southern side of small granitic outcrop
Description: Dispersed stone feature, possible burial site
Records: Field notes, locality data and site photograph.
Significance rating: 2
Vulnerability rating: 2

Figure 2: Site QRS 340/1089 showing dispersed stone features viewed from southeast.

QRS 340/1090

Site coordinates: Lat. -22,0021 Long. 15,76896
Setting: Embayment on southern side of small granitic outcrop
Description: Two small stone hut circle features 2.2m diameter, associated with surface scatter of quartz flaking debris.
Records: Field notes and locality data.
Significance rating: 2
Vulnerability rating: 5

QRS 340/1091

Site coordinates: Lat. -21,999 Long. 15,77051
Setting: Narrow ravine between outcrops of pegmatite
Description: Two spoil heaps approximately 2m diameter and 1.5m in height comprising rubble from the possible excavation of a small well located on a fracture containing haematite and quartz conglomerate.
Records: Field notes, locality data and site photograph.
Significance rating: 2

Vulnerability rating: 5

Figure 3: Site QRS 340/1091 showing narrow ravine between outcrops of pegmatite. The rubble heaps are concealed by accumulated vegetation in front of the figure at left. Note TSF retaining berm in background.

Table 1: Significance and Vulnerability Ranking of archaeological sites

Significance Ranking		**Vulnerability Ranking**	
0	no significance	0	not vulnerable
1	disturbed or secondary context	1	no threat posed
2	isolated minor find	2	low or indirect threat
3	archaeological site	3	probable threat
4	multi-component site	4	high likelihood of disturbance
5	major archaeological site	5	direct and certain threat

5. CONCLUSIONS & RECOMMENDATIONS

The field survey reported here documented evidence of ephemeral human occupation in the area of the proposed TSF 3 site at Navachab Gold Mine. The sites are of low significance and do not merit further investigation. Of the three sites QRS 340/1089 is located just outside the margin of the proposed TSF 3 site and its vulnerability is therefore low. For this reason it is not considered necessary that the possibility of the stone features representing a burial cairn should be further investigated. The two sites located within the proposed TSF 3 site QRS 340/1090 and QRS 340/1091 will be buried under the tailings to be stored there. However, since

the sites do not merit further study no mitigation is recommended. It is recommended on the basis of this assessment that Navachab Gold Mine be granted consent to develop the proposed TSF 3.