

COPY



+264 81 669 7608

info@eccenvironmental.com

www.eccenvironmental.com



REFERENCE: ECC-105-235-LET-13-A
16 March 2021

National Heritage Council
Private Bag 12043
Windhoek
Namibia

RECEIVED BY OFFICIAL STAMP

Received by Name:

Date:

17/03/2021

Signature:

Agnieszka Shingayane

FOR ATTENTION: HEAD: HERITAGE MANAGEMENT

Dear Mrs. Erica Ndalikokule

RE: REQUEST FOR HERITAGE CONSENT ON EPL 7699, INCLUDING THE EXPLORATION AND SMALL-SCALE MINING ACTIVITIES ON MINING CLAIMS 68855 – 68861 AND 67633 IN THE KHOMAS AND HARDAP REGIONS

Environmental Compliance Consultancy (ECC) has been engaged by Mertens Mining and Trading (Pty) Ltd, the Proponent, to act on their behalf for the environmental clearance certificate application for the proposed exploration activities on Exclusive Prospecting Licence (EPL) 7699, including the exploration and small-scale mining activities on mining claims 68855 – 68861 and 67633 in the Khomas and Hardap regions.

In terms of Section 32(1) of the Environmental Management Act (EMA), 2007, ECC has determined that the National Heritage Council is the Competent Authority to deal with the heritage aspect of the development and to which we submit our request as initiated by the Ministry of Environment, Forestry and Tourism.

ECC has commissioned the services of Dr. John Kinahan to conduct an archaeological field survey and assessment of the heritage sensitivity of the EPL within a dedicated focus area.

From the findings of Dr. Kinahan it is clear that the area of focus within which exploration activities are proposed has a low heritage sensitivity with no areas of interest that could be identified. The assessment conducted includes a chance find procedure which is based on the National Heritage Act of 2004. The assessment is hereto attached for your attention.

ENVIRONMENTAL COMPLIANCE CONSULTANCY CC
PO BOX 91193 WINDHOEK, NAMIBIA
MEMBERS: J L MOONEY & JS BEZUIDENHOUT
REGISTRATION NUMBER: CC/2013/11404

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Therefore, based on the evidence submitted we hereby request for council to provide us with heritage consent on the project. Should we not receive a response from your esteemed office after 7 days we assume the NHC deems the submission made sufficient and that consent is subsequently applied.

Should you or your office require our assistance with the details contained within this letter or any project specific details, please do not hesitate to contact us and we will gladly assist.

Yours sincerely,


Stephan Bezuidenhout
Environmental Compliance Consultancy
Office: +264 81 669 7608
Email: stephan@eccenvironmental.com


Jessica Bezuidenhout (Mooney)
Environmental Compliance Consultancy
Office: +264 81 669 7608
Email: jessica@eccenvironmental.com



**ARCHAEOLOGICAL ASSESSMENT ON EPL 7699 (INCLUDING
EXPLORATION AND SMALL-SCALE MINING TARGETS ON MINING
CLAIMS 68855-68861 AND 67633), LOCATED NEAR REHOBOTH,
NAMIBIA**

PREPARED BY

J.KINAHAN, Archaeologist
P.O. Box 22407, Windhoek, Namibia
Email jkinahan@iafrica.com.na

PREPARED FOR:



22 February 2021

22 February 2021

ECC Environmental
Windhoek
Namibia

For attention: Jessica Bezuidenhout

ARCHAEOLOGICAL ASSESSMENT OF EPL7699 IN KHOMAS AND HARDAP REGIONS, NAMIBIA

DECLARATION

I hereby declare that I do:

- (a) have knowledge of and experience in conducting 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.



John Kinahan, Archaeologist

EXECUTIVE SUMMARY

An archaeological field survey was carried out on EPL7699 (including exploration and small-scale mining targets on Mining Claims 68855-68861 and 67633), located near Rehoboth, Namibia. The field survey did not locate any archaeological sites considered to be significant or to require special mitigation measures. It is however recommended that the project adopt the attached Chance Finds Procedure devised for mining projects.

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1. INTRODUCTION

1.1 Background

Environmental Compliance Consultancy (ECC) is carrying out an environmental assessment of EPL7699 (including exploration and small-scale mining targets on Mining Claims 68855-68861 and 67633). Mining is listed in the Environmental Management Act (2007) as an activity requiring environmental assessment and the issuance of an Environmental Clearance Certificate.

ECC has prepared a non-technical summary entitled Proposed Exploration Activities on EPL7699 for Mertens Mining & Trading (Pty) Ltd. which forms the background source for project data cited here.

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 has accordingly appointed the undersigned, J. Kinahan, archaeologist, to carry out an assessment of EPL7699. A field visit to the site was carried out on 15th February 2021.

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 the proposed exploration and mining 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/heritage resources, including historical sites arising from the proposed exploration and mining activities.
2. The identification and demarcation of highly sensitive archaeological/heritage sites requiring special mitigation measures to eliminate, avoid or compensate for possible destructive impacts.
3. Formulation and motivation of specific mitigation measures 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 heritage 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 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 Receiving Environment, 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. Part VI Section 55 Paragraphs 3 and 4 require that any person who discovers an archaeological site should notify the National Heritage Council. 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”.

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 such cases the appropriate international guidelines are those of the World Bank OP/ BP 4.11 in respect of “Physical Cultural Resources” (R2006-0049, revised April 2013). 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) both apply to the management of impacts on archaeological sites and remains whether these are considered in detail by the environmental assessment or not.

3. RECEIVING ENVIRONMENT

The proposed mining activities are to be carried out on EPL7699, where Mining Claims 68855-68861 and 67633 have already been the focus of limited trenching and some exploration drilling. A part of the lease area estimated to cover about 8ha is fenced off to secure a number of sheds and some earthmoving equipment and to prevent

access to open trenches. The remainder of the lease which is located on the farm Mertens (63) and Gravenstein (65) located approximately 40km east of Rehoboth¹.

EPL7699 is characterized by open valley terrain surrounded on three sides by prominent rocky ridges mainly representing the Mokolian age Marienhof Fmn. with minor outcropping quartzites and conglomerates of the Doornpoort Fmn. The valley floor is filled with shallow Kalahari sands overlying pedogenic calcretes with recemented cobbles derived from the minor outcrops. The conglomerates show local fracturing associated with superficial mineralization represented by visible azurite, chrysocolla and other copper minerals at surface. These showings appear to have attracted exploration attention and have been targeted with small scale trenches. The mineralization does not appear to develop with depth and it may be for this reason that trenching seems to have been abandoned.

The surrounding environment in the vicinity of EPL7699 includes elements of two overlapping vegetation zones of Acacia Tree and Scrub Savanna, namely Southern Kalahari and Highland Shrubland, as well as Dwarf Shrub Savanna of the Nama Karoo². Drainage is well developed and deeply incised, supporting narrow belts of riparian bush. Some outcrops of Doornpoort conglomerate have small potholes which serve as natural water catchments in an environment which is otherwise without permanent surface water. The flanks of the surrounding Marienhof Fmn ridges have patchy deposits of Tertiary Kalahari dune sand which probably represent the increased aeolian sand transport of the Last Glacial Maximum when the valley floor would have been without vegetation cover³.

Earlier surveys provide an indication of the archaeological importance of this general area, although the intensity of survey varies considerably and large parts of the area are archaeologically unknown, including that of EPL7699. The general sequence and archaeological characteristics of the area under consideration, based on current knowledge, are as follows:

- a. **Early to mid-Pleistocene (ca. 2my to 0.128my; OIS⁴ 6, 7, 19 &c):** represented by surface scatters of stone tools and artefact debris, usually transported from original context by fluvial action, and seldom occurring in sealed stratigraphic context.
- b. **Mid- to upper Pleistocene (ca. 0.128my to 0.040my; OIS 3, 4 & 5a-e):** represented by dense surface scatters and rare occupation evidence in sealed stratigraphic context, with occasional associated evidence of food remains.
- c. **Late Pleistocene to late Holocene (ca. 0.040my to recent; OIS 1 & 2):** represented by increasingly dense

¹ EPL7699 lies mainly within the Khomas Region but extends into the Hardap Region.

² Mendelsohn, J., Jarvis, A., Roberts, C. & Robertson, T. eds. 2002. *Atlas of Namibia: a portrait of the Land and its People*. Cape Town: David Philip.

³ Lancaster, N. 1984. Aridity in southern Africa: Age, origins and expression in landforms and sediments. In Vogel, J.C. ed. *Late Cainozoic palaeoclimates of the Southern Hemisphere*. Rotterdam: Balkema, pp. 433–44.

⁴ Oxygen Isotope Stages (OIS) referenced here follow Mitchell, P. 2002. *The archaeology of southern Africa*. Cambridge: Cambridge University Press.

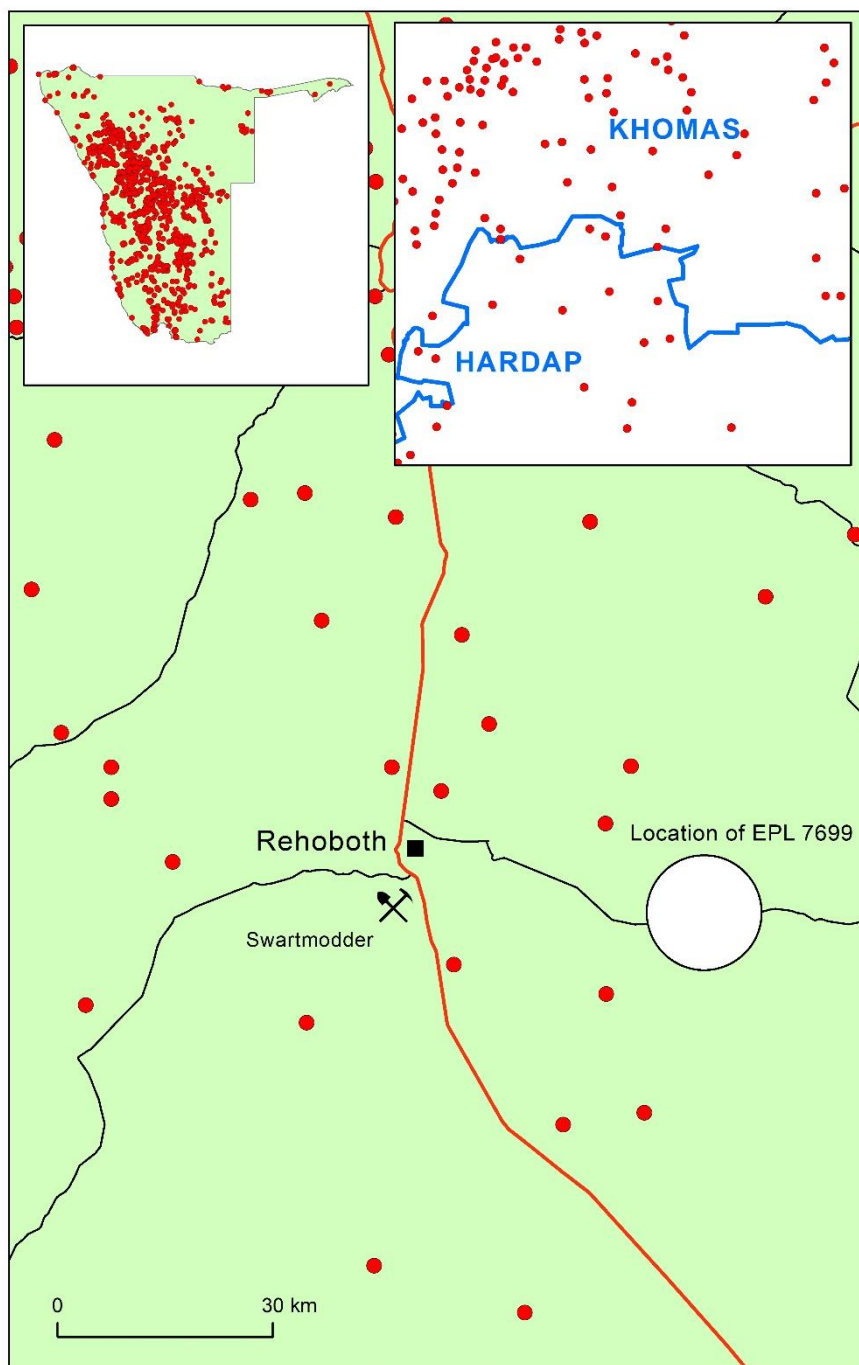


Figure 1: The location of EPL7699, showing the known distribution of archaeological sites (red dots) in the adjacent area and regions. Also indicated is the location of the historical copper mine at Swartmodder, referenced in the text.

- a. and highly diverse evidence of settlement, subsistence practices and ritual art, as well as grave sites and other remains.
- b. **Historical (the last ca. 250 years):** represented by remains of crude buildings, livestock enclosures, wagon routes and watering points, as well as graves, comprising small cemeteries near farm settlements or isolated burial sites.

In summary, early to mid-Pleistocene sites are associated with pans, outwash gravels, drainage lines and river gravels. These sites are difficult to detect and because they are easily overlooked in the course of mining or construction work they are often damaged or destroyed in the process. Mid- to upper Pleistocene sites occur in similar contexts to the earlier material, but hill foot-slopes and outcrops of rock suitable for artefact production (e.g. chert, fine-grained quartzites) are also focal points. Late Pleistocene to late Holocene sites occur in almost every terrain setting, with the exception of very steep slopes and mountain tops. These sites often exhibit locally integrated distribution patterns which allow some reconstruction of land-use and subsistence. Major Holocene sites include stratified occupation deposits, containing an array of organic and inorganic residues. Heritage sites relating to the historical period relate mainly to farming settlement in the vicinity of Rehoboth and outlying villages.

4. OBSERVATIONS

A detailed foot survey concentrating on the area of Mining Claims Claims 68855-68861 and 67633 (Figure 1) found no significant archaeological sites and is therefore considered to have a low archaeological sensitivity. The valley floor was however found to have localized scatters of stone artefact production debris, mainly hydrothermal vein quartz as well as coarse quartzite clasts probably derived from the Doornpoort Fm conglomerates which seem to be responsible for the bulk of unconsolidated rubble on the surface. The scatters were dispersed and showed a very low artefact density (<1 object/m²), indicating either ephemeral occupation or, more likely, post-occupation disturbance in the form of sheet erosion. Although the artefact scatters contained no typologically diagnostic pieces, the material can be attributed to Late Pleistocene to recent Holocene (ca. 0.040my to recent; OIS 1 & 2) hunter-gatherer occupation. No possible human burial sites were noted although the possibility of these cannot be dismissed entirely.

In the course of the foot survey, close attention was paid to areas of visible copper mineralization, as described in the Introduction. Small-scale indigenous copper production formed an important component of the pre-colonial economy in central Namibia, especially during the last one thousand years. Indigenous copper extraction and processing was superseded in the mid-19th century by European prospectors and miners. The technology of pre-colonial copper production depended on the use of carbonate-rich ores which occur as weathering products of copper "gossan" features. These deposits are associated geologically with the Matchless amphibolite belt and the relatively high-grade ores found among these deposits had the particular advantage that they could be lightly crushed and processed in an open furnace often without the need to add a flux. Indeed,

it seems likely that pre-colonial knowledge of copper minerals and processing requirements was limited and only certain ores were useable⁵.

Pre-colonial copper processing in central Namibia leaves subtle but unmistakable archaeological traces. These include the remains of stone open-hearth furnaces usually within 1-2km of outcropping copper. The furnaces are usually found in a completely dismantled state due to the fact that low smelting temperatures (barely above 1000°C) and poor fluxing resulted in incomplete separation of metallic copper and a highly viscous slag. Copper produced in this way generally took the form of small metallic prills trapped within the slag. Furnace slag had to be cooled and broken apart with stone hammers, resulting in dense surface deposits of black crushed slag. The copper prill extracted from the slag were evidently taken for processing at other sites. Furnace sites appear to have been segregated from ordinary residential sites and consequently have little associated occupation debris.

Surficial copper occurrences in central Namibia which are not associated with the Matchless amphibolite commonly include chrysocolla a hydrated copper phyllosilicate found as vein deposits in minor fractures. Lacking the carbonate and weathered iron oxide of gossan deposits the copper found as chrysocolla (including azurite and cuprite) could not be processed either by pre-colonial African mineral technologies or those available to 19th century European miners in Namibia. As a consequence, these deposits were not exploited. The geology of copper oxide deposits is however complex and the deposit at Swartmodder, a mere 20km from EPL7699, was mined by indigenous people in the early 19th century when their activities at the site were observed and described in 1835 by the explorer James Alexander⁶.

5. CONCLUSIONS & RECOMMENDATIONS

On the basis of the field survey reported here the portion of EPL7699 is not considered to be archaeologically sensitive. No archaeological sites requiring further investigation or mitigation were located in the course of the survey. It is however recommended that the proponent should adopt the Chance Finds Procedure in Appendix 1 as part of the project Environmental Management Plan.

⁵ Kettis, E. & Enflo, L. 1996. *Copper production experiment: An archaeological study in Namibia*. Stockholm: Minor Field Study, Department of Archaeology, University of Stockholm; Miller, D.E. & Kinahan, J. 1992. The metallurgical analysis of copper beads and ore from archaeological sites in central Namibia. *Communications of the Geological Survey of Namibia* 8: 67–79; Kinahan, J. 1980. Eighteenth century coppersmiths in central Namibia: Comments on some sources and syntheses. *Namibiana* 2: 17–22.

⁶ Alexander, J.E. 1967. *An Expedition of Discovery into the Interior of Africa*. Two volumes. Facsimile reprint, Cape Town: C. Struik.

Appendix 1: Chance Finds procedure

Areas of proposed development activity are subject to heritage survey and assessment at the planning stage. These surveys are based on surface indications alone, and it is therefore possible that sites or items of heritage significance will be found in the course of development work. The procedure set out here covers the reporting and management of such finds.

Scope: The “chance finds” procedure covers the actions to be taken from the discovery of a heritage site or item, to its investigation and assessment by a trained archaeologist or other appropriately qualified person.

Compliance: The “chance finds” procedure is intended to ensure compliance with relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): *“a person who discovers any archaeological ... objectmust as soon as practicable report the discovery to the Council”*. The procedure of reporting set out below must be observed so that heritage remains reported to the NHC are correctly identified in the field.

Responsibility:

Operator	To exercise due caution if archaeological remains are found
Foreman	To secure site and advise management timeously
Superintendent	To determine safe working boundary and request inspection
Archaeologist	To inspect, identify, advise management, and recover remains

Procedure:

Action by person identifying archaeological or heritage material

- a) If operating machinery or equipment stop work
- b) Identify the site with flag tape
- c) Determine GPS position if possible
- d) Report findings to foreman

Action by foreman

- a) Report findings, site location and actions taken to superintendent
- b) Cease any works in immediate vicinity

Action by superintendent

- a) Visit site and determine whether work can proceed without damage to findings
- b) Determine and mark exclusion boundary
- c) Site location and details to be added to project GIS for field confirmation by archaeologist

Action by archaeologist

- a) Inspect site and confirm addition to project GIS
- b) Advise NHC and request written permission to remove findings from work area

c) Recovery, packaging and labelling of findings for transfer to National Museum

In the event of discovering human remains

- a) Actions as above
- b) Field inspection by archaeologist to confirm that remains are human
- c) Advise and liaise with NHC and Police
- d) Recovery of remains and removal to National Museum or National Forensic Laboratory, as directed.

