CULTURAL AND HERITAGE IMPACTS ASSESSMENT REPORT – PHASE 1

IN RESPECT TO KDN GEO CONSULTING CC APPLICATION FOR ENVIRONMENTAL CLEARANCE, FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPL-9852, LOCATED NEAR TSUMEB, OSHIKOTO-OTJOZONDJUPA REGION, NAMIBIA

MARCH 17

Compiled For: KDN Geo Consulting

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DOCUMENT INFORMATION AND APPROVAL

Title of Proposed Development	KDN Geo Consulting (The Proponent) proposed mineral exploration for base & rare metals, industrial minerals, precious stones and, precious metals	
Report Title	Cultural and Heritage Impact Assessment for the Proposed EPL-9852 located near Tsumeb, Oshikoto-Otjozondjupa region – Phase One (1)	
Land Area	The EPL area covers a surface area of 78906 hectares (ha).	
Location	On EPL-9852 Oshikoto Region, Namibia.	
Proponent	KDN Geo Consulting	
Heritage Consulting Firm	Enviro-Leap Consulting cc	
Author:	**Signature**	**Date**
Mr. Romanus Shiremo (Historian)		**23 February 2025**
Approval – Proponent		
	pp 	**24 February 2025**

Author disclaimer:

I hereby declare that:

a. I act as an independent specialist in this application.
b. I will 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. We have the knowledge of and experience in conducting Heritage Impact Assessments (HIA), including knowledge of the Acts, Regulations, and Guidelines that are relevant to Namibian legislation, specifically the National Heritage Act (27 of 2004), as well as regulations and guidelines that have relevance to the proposed activity.
d. We have performed the work relating to the application objectively, even if this results in views and findings that are not favourable to the proponent.
e. Although all efforts are made to identify all sites of heritage significance during an assessment of study areas, the nature of heritage resources are as such that it is always possible that hidden or subsurface sites, features or objects could be overlooked during the study.
f. Clients & Developers should not continue with any development actions until the National Heritage Council of Namibia has provided final comments on this report.
g. I will comply with the Act, Regulations and all other applicable legislation.

executive summary

Project Overview

In view of the declared EPL-9852, a Cultural/Heritage Impact Assessment (C/HIA) was requested as part of the overall Environmental Impact Assessment (EIA) in February 2025. This C/HIA focused on identifying and describing the potential impacts that the proposed exploration activities would have on heritage sites. While there were known sites of heritage significance such as the historical mine at farm Anabeb, the assessment also aimed at identifying any other heritage resources within the EPL area. Further, should any new discoveries be made of objects of heritage interest during exploration phase, the required procedures for assessing of such discoveries shall be followed. This applies to potential heritage resources which might not have been established at the time assessment.

The EPL area encompasses of historic sites and graves. Although there are no protected sites within the EPL area, exploration- mining related disturbance has the potential to permanently remove unique heritage features protected by Namibia law. The EPL falls within the commercial farm demarcated by definite boundaries and clear access to natural resources. The surveyed areas consist 95 % of the EPL and only about 5 % was not accessible. The is high concentration of mixed heritage resources at farm Aden ranging from crafted geological marvellous to multiple graves and collection of buildings.

Previous work in the larger geographical area was utilized in the background study. This report discusses the results of both the background research and field assessment and provides recommendations on the way forward at the end.

From a Heritage Point of View, it is recommended that the proposed development be allowed to continue, taking into consideration the recommendations put forward at the end of the report.

The proponent seeks to undertake exploration operations on the proposed EPL-9852 near Tsumeb, Oshikoto-Otjozondjupa region. Principally, the project intends to explore for rare metals (desktop geological study, collection of samples and identification of previous activity in the area where previous mining activities were conducted) by use of hand-held equipment and to small degree sampling and develop the EPL into mining license should they discover viable ore deposit.

The proposed exploration activities mainly consist of the following prospecting activities: Geological mapping: this mainly entails a desktop review of geological area maps and ground observations.

- Lithology geochemical surveys: rock samples shall be collected and taken for trace element analysis. Also, trenches or pits may be dug (in a controlled environment e.g. fencing off and labelling activity sites) adopting manual or excavator to investigate the mineral potential. At all times, the landowner and other relevant stakeholder will be engaged to obtain authorization where necessary.
- Geophysical surveys: entails data collection of the substrata, by air or ground, through sensors such as radar, magnetic and electromagnetic to detect any mineralization in the area.
- Bulk Sampling: Should analyses by an analytical laboratory be positive, holes are drilled and drill samples collected for further analysis. This will determine the depth of the potential mineralization. If necessary new access tracks to the drill sites will be created and drill pads will be cleared in which to set the rig. However, at this stage the proponent does not intent to conduct any sampling activities.

Need for a Heritage Impact Assessment

While increased economic activities can stimulate demographic changes and alter social, economic and environmental practices in many ways. Adverse environmental and socio-economic impacts have become a major area of concern for the business community, their customers, and other key stakeholders. As a result, companies seek to manage these impacts as part of their ethical and sustainable business conduct. Similarly, identifying,

avoiding, mitigating and managing impacts, is a necessary condition for the proponent to undertake its operation in compliance with the legislative requirements in Namibia.

Heritage Impact Assessment forms part of the wider heritage component of Environmental Impact Assessment, required in terms of the National Heritage Act (No. 27 of 2004) and the Environmental Management Act, No. 27 of 2007 and its Regulations of 2012. The process ensures that the significance of heritage resources is taken into account when proposing new developments. A HIA is thus needed to;

1. Identify any heritage resources which might be affected by the proposed development.
2. Evaluate the nature and degree of significance of such resources.
3. Understand the range of impacts arising from the proposed development or change.
4. Provide an objective evaluation of these impacts on the heritage resources.
5. Propose clear guidelines/recommendations for the appropriate management and mitigation measures of these impacts.

Therefore, proponent appointed Enviro-Leap Consulting cc to conduct the heritage impact assessments and facilitate the process of obtaining a Heritage Consent from the relevant authority.

Approach and Findings of the Heritage Impact Assessment

A detailed field survey covered almost the entire 78906 hectares (ha), and the assessment was conducted over four (5) days in February 2025. All farm owners were registered as stakeholders for the C/HIA and have been the primary parties consulted by the consultant in relation to heritage materials featuring the concerned area.

A combination of historical sites (Isolated farmsteads and graves) is known to occur directly within the EPL area together with a concentration of potential historical built sites at farm Abenab within the EPL area. The open mine pits areas, abandoned mining tools and buildings have also been cited by the stakeholders as potential heritage places/objects in the area. The evidence identified during the survey is consistent with the occupation

model for the locality. The EPL area is in contexts that is represented by historical development that created these heritage materials that have stood time. These sites record human' presence and history in the area including the establishment of Abenab Mine in the early 1923-1958 between Grootfontein and Tsumeb. No elements of the heritage evidence located within the EPL area are rare within a regional context. Some portion of the cultural environment is greater steep gradient and possess dry vegetation. As such, rather than having experienced concentrated occupation, we argue that indigenous use of the EPL area is therefore more likely to have related to hunting and gathering activities, along with transitory movement between locations.

Previous work in the larger geographical area was utilized in the background study. This report discusses the results of both the background research and field assessment and provides recommendations on the way forward at the end.

From a Heritage Point of View, it is recommended that the proposed development be allowed to continue, taking into consideration the recommendations put forward at the end of the report.

Key Concepts and Terms

Periodization Archaeologists divide the different cultural periods according to the dominant material found for the different periods. This periodization is usually region-specific, such that the same label can have different dates for different areas. This makes it important to clarify and declare the periodization of the area one is studying. These periods are nothing a little more than convenient time brackets because their terminal and commencement are not absolute and there are several instances of overlap.
In the present study, relevant archaeological periods are given below.

- **Early Stone Age (~ 2.6 million to 250 000 years ago)**
- **Middle Stone Age (~ 250 000 to 40-25 000 years ago)**
- **Later Stone Age (~ 40-25 000, to recently, 100 years ago)**
- **Early Iron Age (~ AD 200 to 1000)**
- **Late Iron Age (~ AD1100-1840)**
- **Historic (~ AD 1840 to 1950, but a Historic building is classified as over 60 years old)**

Definitions Just like periodization, it is also critical to define key terms employed in this study. Most of these terms derive from the National Heritage Act of 2004 and its ancillary laws, as well as international regulations and norms of best practice. The following aspects have a direct bearing on the investigation and the resulting report:

Cultural (heritage) resources are all non-physical and physical human-made occurrences, and natural features that are associated with human activity. These can be singular or in groups and include significant sites, structures, features, Eco facts and artefacts of importance associated with the history, architecture or archaeology of human development.

Cultural significance is determined by means of aesthetic, historic, scientific, social or spiritual values for past, present or future generations.

Value is related to concepts such as worth, merit, attraction or appeal, concepts that are associated with the (current) usefulness and condition of a place or an object. Although significance and value are not mutually exclusive, in some cases the place may have a high

level of significance but a lower level of value. Often, the evaluation of any feature is based on a combination or balance between the two.

Isolated finds are occurrences of artefacts or other remains that are not in-situ or are located apart from archaeological sites. Although these are noted and recorded, but do not usually constitute the core of an impact assessment, unless if they have intrinsic cultural significance and value.

In-situ refers to material culture and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Archaeological site/materials are remains or traces of human activity that are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures. According to the Namibia National Heritage Act (NNHA) (Act No. 27 of 2004), no archaeological artefact, assemblage or settlement (site) and no historical building or structure older than 60 years may be altered, moved or destroyed without the necessary authorization from the National Heritage Council or a provincial heritage resources authority.
Historic material are remains resulting from human activities, which are younger than 100 years, but no longer in use, including artefacts, human remains and artificial features and structures.

Chance finds mean archaeological artefacts, features, structures or historical remains accidentally found during development.

A grave is a place of interment (variably referred to as burial) and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery (contemporary) or burial ground (historic).

A site is a distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

Heritage Impact Assessment (HIA) refers to the process of identifying, predicting and assessing the potential positive and negative cultural, social, economic and biophysical

impacts of any proposed project, which requires authorization of permission by law and which may significantly affect the cultural and natural heritage resources. Accordingly, an HIA must include recommendations for appropriate mitigation measures for minimizing or circumventing negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

Impact is the positive or negative effects on human well-being and / or on the environment.

Mitigation is the implementation of practical measures to reduce and circumvent adverse impacts or enhance beneficial impacts of an action.

Mining heritage sites refer to old, abandoned mining activities, underground or on the surface, which may date from the pre-historical, historical or the relatively recent past.

Study area or 'project area' refers to the area where the developer wants to focus its development activities (refer to plan).

Phase I studies refer to surveys using various sources of data and limited field walking in order to establish the presence of all possible types of heritage resources in any given area.

TABLE 2: ACRONYMS AND DEFINITIONS TABLE

Abbreviation	Description
A/HIA	Archaeological/Heritage Impact Assessment
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EIA, MIA, LIA	Early Iron Age, Middle Iron Age, Late Iron Age
NHA	Nation Heritage Act, Act 27 of 2004
SM	Site Manager
NHCN	National Heritage Council of Namibia
ESA, MSA, LSA	Early Stone Age, Middle Stone Age, Later Stone Age
ECC	Environmental Clearance Certificate
CFP	Chance Find Procedure
EMA	Environmental Management Act
EPL	Exclusive Prospecting Licences
NHC	National Heritage Council
NHR	National Heritage Register

contents

1. INTRODUCTION

Enviro-Leap Consulting cc were engaged by Alliance Environmental Consultancy cc (AEC) to undertake a Cultural/Heritage Impact Assessment (C/HIA) for EPL-9852. This report presents the results of the concerned (C/HIA) assessment relating to the area. The EPL area is located approximately 16 kilometres (km) east of Tsumeb and about 30km North of Grootfontein in the Oshikoto and Otjozondjupa Regions, Namibia.

This survey considers that, regardless of there being no outstanding national heritage sites registered within the EPL are, there may be potential for unmapped sites. These sites include evidence of historic land use. Copper was the first minerals to be extracted from the Tsumeb area in large quantities. The Tsumeb was mined for nearly 100 years, first by Anglo-German and then by multinational companies; however, prior to that, the cultural environment was central to the economies of the Ndonga, Hai‖om, and Herero, who mined, smelted, crafted, and traded the copper (Hearth, 2021). Following the discovery of copper, the area experienced its first copper rush centred on the town of Tsumeb. The potential sites recorded within the EPL area detail a collective heritage on land use such as pastoral and mining, they are common to the region and considered to have sufficient materials as potential heritage sites. The buildings and graves site are of some historical significance.

Therefore, this EPL area should be considered as a highly sensitive archaeological landscape. The common heritage finds, featuring the EPL area includes historical farmsteads and graves, which are treated as part of the built heritage resources of this region.

Background research indicates that there are heritage resources featuring in the area within which the EPL falls. Additionally, the areas surrounding the proposed EPL area is described as a culturally sensitive landscape. Previous work in the larger geographical area was utilized in the background study.

The proponent indicated the location and boundaries of the EPL area and the assessment concentrated on this portion.

1.1. PROJECT MOTIVATION (INCLUDING NEED AND DESIRABILITY)

Mining activities in Namibia are the biggest contributor to the country's revenue and mining is one of the largest economic sectors in the country. Although for exploration activities there are limited social benefits associated with the project, the following are the possible benefits of the proposed project activities:

- Contributions to annual license fees to the government through the MME.
- Payments of lease agreements and services rendered.
- Value adding to Namibian raw materials.
- Provision of contractual employment opportunities.
- Increase in knowledge on the subsurface which then contributes to development, and geoscience research.
- Contribute to the socio-economic development of the local area and region,
- Direct capital investment into Oshikoto and Otjozondjupa Regions

Should a feasible resource be located, it could provide social and economic development within the region and the country, subject to a Mining Licence (ML) being issued by MME and a separate, comprehensive (full) Environmental Impact Assessment (EIA) process.

1.2. LEGAL REQUIREMENTS FOR A HERITAGE IMPACT ASSESSMENT

The National Heritage Act (No.7 of 2007) provides for the assessment of heritage objects and the National Heritage Council is the chief administrative centre for Namibia's heritage material. In addition, it is also responsible for the nomination of sites to the National Heritage Register. The National Environmental Management Act (No.7 of 2007) and its regulation 2012 is the key national environmental legislation. This Act provides controls for biodiversity resources in the face of development.

1.3. OBJECTIVES OF THE HERITAGE IMPACT ASSESSMENT

A Heritage Impact Assessment (including Archaeological, Cultural heritage, Built Heritage and Paleontological Assessment) to determine the impacts on heritage resources within the study area.

The following are the required to perform the assessment:

- A desk-top investigation of the area.
- A site visit to the proposed development site.
- Identify possible archaeological, cultural, historic, built and paleontological sites within the proposed development area.
- Evaluate the potential impacts of construction and operation of the proposed development on archaeological, cultural, historical resources; built and paleontological resources; and
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural, historical, built and paleontological importance.

2. PROJECT DESCRIPTION

The proponent seeks to undertake a phase 1 cultural and heritage Impact Assessment on the proposed EPL-9852 near Tsumeb, Oshikoto-Otjozondjupa Region. Principally, the proponent intends to explore (desktop geological study, collection of samples and identification of previous activity in the area where previous mining activities were conducted) by use of hand-held equipment and to small degree sampling and develop the EPL into a mining license should they discover viable ore deposit.

2.2. DESRCIPTION OF PROJECT LOCATION

The project area is located approximately 16 km East of Tsumeb and about 30 km North of Grootfontein in the Oshikoto and Otjozondjupa Regions. The site is accessible via the D3039 or D3021district roads from the M75 main road north and east of Tsumeb respectively. The EPL covers approximately an area of 78906 hectares in total. The licence covers listed farmlands as indicated on the map below:

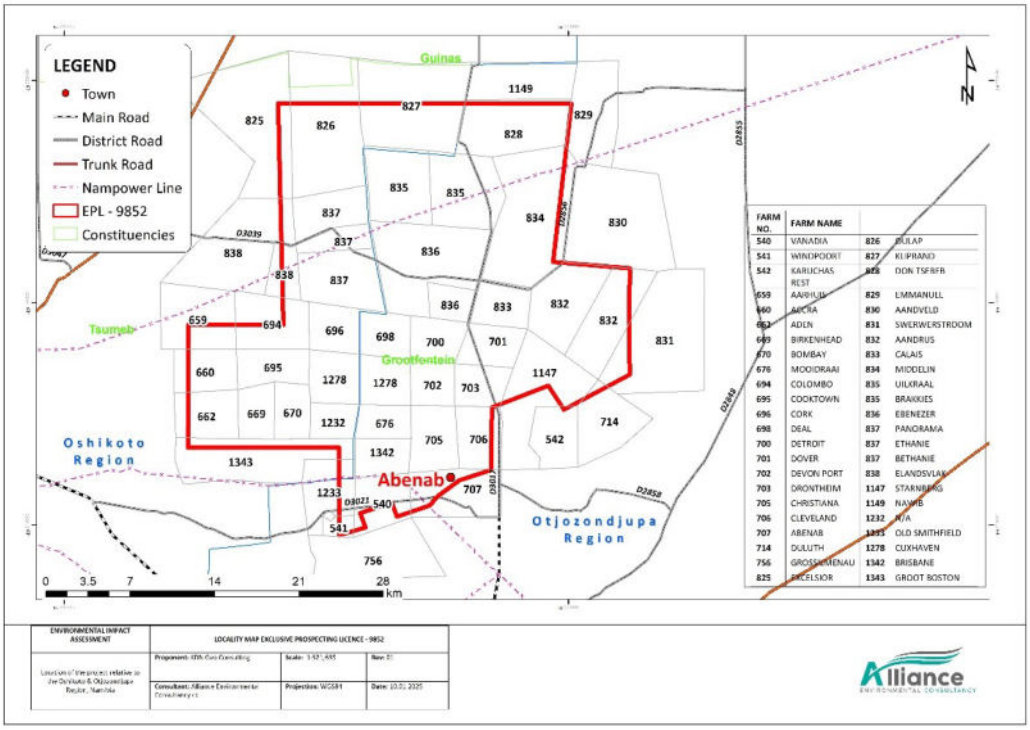


Figure 1: Locality map and area extent (78906 Ha) of the proposed EPL-9852, Oshikoto and Otjozondjupa (Map credits: Alliance Environmental Consultancy cc, 2025).

Table 3: EPL's Centre coordinates of the proposed development site.

ID	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE		LATITUDE	LONGITUDE
1	-18.999317	17.957203	10	-19.280379	18.0926100	19	-19.256063	17.889912
2	-18.999608	18.176300	11	-19.292246	18.0764460	20	-19.164218	17.890282
3	-19.117619	18.162620	12	-19.299281	18.0703590	21	-19.164617	17.961144
4	-19.122401	18.220082	13	-19.307541	18.0459310			
5	-19.201562	18.219816	14	-19.297030	18.0422500			
6	-19.227700	18.170696	15	-19.304863	18.0184910			
7	-19.209812	18.159018	16	-19.315642	18.0224300			
8	-19.226063	18.116775	17	-19.321305	18.0028860			
9	-19.272577	18.1163400	18	-19.256065	18.002716			

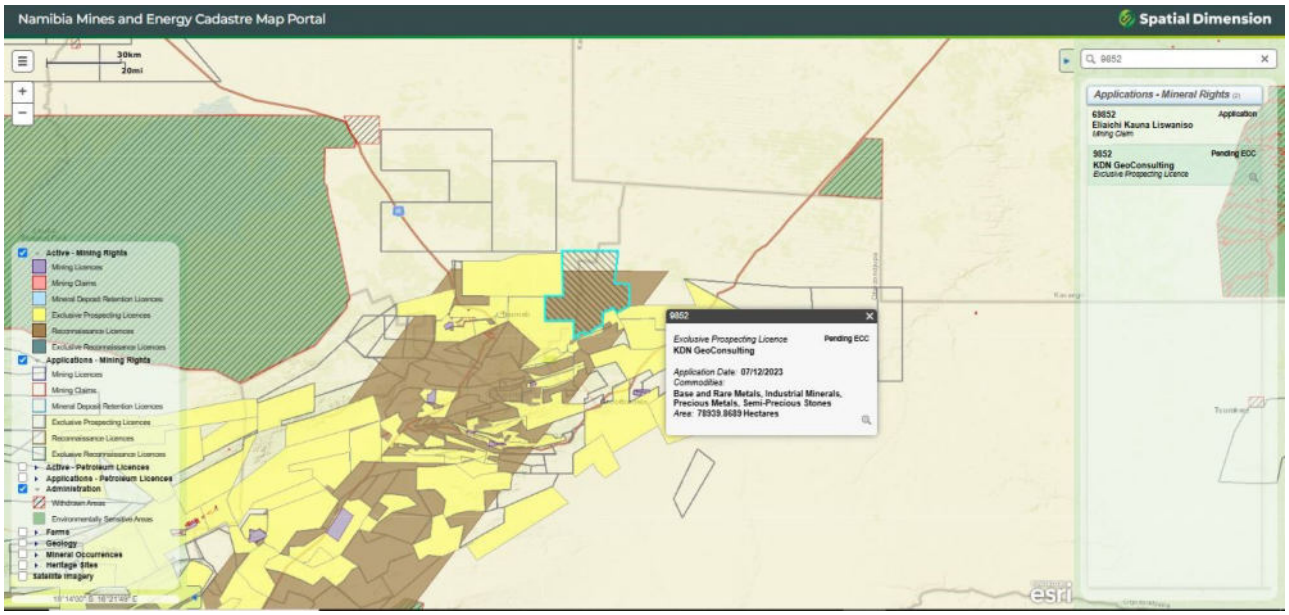


Figure 2: Evidence of the proposed EPL application on the Ministry of Mine's cadastre (MME, 2025)

3. HERITAGE SETTING OF THE AFFECTED ENVIRONMENT

3.1 HERITAGE CULTURAL ENVIRONMENT

3.1.1 Heritage Conditions

The encroachment of settlers in Tsumeb and surrounding cultural environment caused significant change in land use. Oral records noted many forced removals of the indigenous groups in the area. Reports of European confrontation and subjections of the San is well documented in the region. Much of the area around Tsumeb is dedicated to mining and farming activity over the past decades. Although there is optimism about farming in the area, drought in recent years has proved agriculture as difficult enterprises to establish. The town of Tsumeb was purpose built as a mining town with a mining focus and renowned for the quality and variety of fine mineral specimens that it has produced. Mined for a century, the town has produced over 240 minerals, and many of the minerals discovered there have never been found in other localities(https://www.irocks.com/galleries/tsumeb-fine-mineral-specimens-mixed?srsltid=AfmBOorSTRJ3DdFqa-hW6RxIKGs4mlnNna7xUL-j914ZWsVhfuCxvxTm).

During the early Iron Age, San and Aandonga people traded copper in the Tsumeb region. During this epoch, the movement of people from the north and from further Herero territory, as well as San, forced different cultures to interact and exploit the same spaces. This resulted in most of the land captured by the Bantu-speakers, but hunter-gatherer San were generally forced to flee from their land. This period has been categorical studied as follows in Namibia:

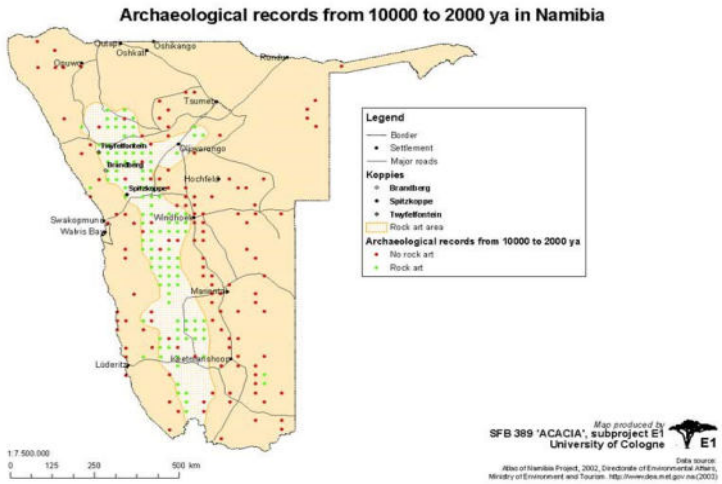


Figure 3: Overview of heritage sites in Namibia: (Credit: Project E1 - Atlas of Namibia)

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

Early Iron Age (~ AD 200 to 1000)

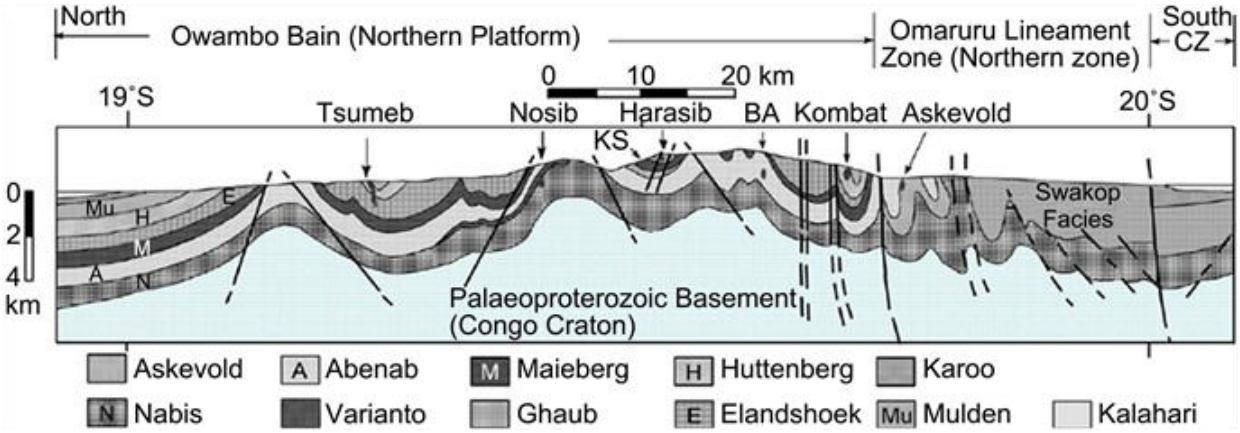
Late Iron Age (~ AD1100-1840)

Historic (~ AD 1840 to 1950, but a Historic building is classified as over 60 years old).

Several heritage surveys and historical studies have been undertaken around the Oshikoto Region. However, the extent of archaeological survey coverage on the current EPL area is very limited. Prior to the conduct of the present C/HIA, few sites are known to occur within the Tsumeb region. The EPL area vary widely in terms of topographical characteristics. Apart from several burial sites such as those at "Anabeb" complex, historical buildings of unknown status occurs relatively frequently in the whole region and tends to be of various magnitude. The numbers of historical buildings and burial site vary from isolated finds, for which details have not often been recorded in any C/HIA, to dense concentrations of potential heritage finds. An empirical conclusion is that potential heritage materials are distributed in a widespread manner across the EPL area.

3.1.2 Geology

The deposit lies stratigraphically in the upper part of the Otavi group that comprises limestone and dolomite of Neoproterozoic age (Miller, 2008). The pipe is infilled by feldspar bearing sandstone of the overlying Mulden group. It is this sandstone that is the host for the pipe mineralization and the morphology of this filling indicates that karst formation took place soon after deposition. The region was mined for nearly 100 years, first by Anglo-German and then by multinational companies; however, prior to that, the site was central to the economies of the Ndonga, Hai‖om, and Herero, who mined, smelted, crafted, and traded the copper.



(A Review on the Deposit Geology and Mineralization Mechanism of Tsumeb Polymetallic Deposit, Namibia)

4. APPROACH TO THE HERITAGE IMPACT ASSESSMENT

4.1 OVERVIEW OF APPROACH ADOPTED FOR COMPILING THE HIA REPORT

The field survey found that direct impacts to recorded potential heritage sites such as the historical built environment and burials will not occur. Measures to deal with any chance finds of heritage resources are included in the conclusion. The identified heritage sites tell the story of land use. The impact is defined in a semi-quantitative way and will be assessed according to rating scales for the assessment of archaeological significance and vulnerability as developed by the QRN.

Table 6: Rating scales for the assessment of archaeological significance and vulnerability as developed by the QRN.

Significance Rating
0 No heritage significance
1 Disturbed or secondary context, without diagnostic materials

2	Isolated minor finds in undisturbed primary context, with diagnostic materials
3	Archaeological and paleontological site (s) forming part of an identifiable local distribution or group
4	Multi-component site (s), or central site (s) with high research potential
5	Major archaeological or paleontological site (s) containing unique evidence of high regional significances

Vulnerability Rating	
0	Not vulnerable
1	No threat posed by current or proposed development activities
2	Low or indirect threat from possible consequences of development (e.g., soil erosion)
3	Probable threat from inadvertent disturbance due to proximity of development
4	High likelihood of partial disturbance or destruction due to close proximity of Development
5	Direct and certain threat of major disturbance or total destruction

The EPL area is disturbed by human activities and livestock grazing activities. The impact significance of the exploration activities on archaeological, historical buildings and burial ground is low as the many potential heritage site identified are located far away from the mountains terrains that are subject for explorations activities.

Table 7: Assessment criteria for the evaluation of cumulative impacts on archaeological sites developed by the QRN.

CRITERIA	CATEGORY	DESCRIPTION

Extent or spatial influence of impact	**National Regional Local**	Within Namibia Within the Region On site or within 200 m of the impact site impact
Magnitude of impact (at the indicated spatial scale)	**High Medium Low Very Low Zero**	Social and/or natural functions and/ or processes are severely altered Social and/or natural functions and/ or processes are notably altered Social and/or natural functions and/ or processes are slightly altered Social and/or natural functions and/ or processes are negligibly altered Social and/or natural functions and/ or processes remain unaltered
Duration of impact	**Short Term Medium Term Long Term**	Up to 3 years 4 to 10 years after construction More than 10 years after construction

Table 8: Reversibility Rating Criteria

Reversibility Ratings	**Criteria**
Irreversible	The impact will lead to an impact that is permanent.
Reversible	The impact is reversible, within a period of 10 years

The impact is going to happen and will be long-term in local; therefore, the impact risk class will be Medium. However, with the implementation of the recommended mitigation measures and management this risk class can be minimized to a low rating

5. FINDINGS AND RECOMMENDATIONS

5.1 FINDINGS OF THE ASSESSMENT

4.1.1 Desktop Literature Synopsis

Searches of the National Heritage Sites (NHS) in relation to the Oshikoto Region were undertaken to determine the impacts of exploration activities on National heritage properties within the current EPL area. Using the results of the NHR research and knowledge of the NHS distribution in the region, it was determined that no declared NHS features in the cultural environment of EPL area, therefore, no direct impact on national treasures is expected from the exploration activities. Geographically, the EPL area falls more in Oshikoto region than Otjizpndupa region, hence this list only features NHS from Oshikoto region, The results of the research are summarised below:

TABLE 4: NATIONAL MONUMENTS SITUATED NEAR TSUMEB, OSHIKOTO-OTJOZONDJUPA REGION

Sites	Characteristics
Otjikoto lake	The lake was formed by a Karst process in which the ceiling of the cave collapsed.
Nakambale House, Church and Cemetary	The church, erected in 1889, is the oldest church building in northern Namibia
Second Director's House	The first director's house of the "Otavi Minen and Eisenbahn Gesellschaft" (OMEG, Otavi Mining and Railway Company) was completed in 1907.
OMEG-Minenbüro	Regarded as the oldest building of Tsumeb
German Private School Building	First school building in the skittle alley of the Minen Hotel founded in 1912
Roman Catholic Church Building	Erected in 1913 by Rudolf Mann under the supervison of Brother Ucken, and inaugurated in 1914
Caves on Farm Ganachaams (Ghaub Caves)	First reported in 1914, in the "Deutsche Kolonialzeitung". First detailed account by F Jaeger and L Waibel before WWI

4.1.2 Fieldwork Observation and Findings

Several potential heritage sites were identified during the surveys within the EPL area. The locations of these sites are itemised in table, there is possibility for sites to be in-situ deposits. The landscape of the EPL have eroded significantly, the area has been heavily disturbed by farming activities, including the development of farmsteads and related properties. Most potential heritage sites are concentrated at farm Abenab while other farms within the EPL area have isolated potential heritage finds. The locations of all archaeological sites are also provided:

Table 1. List of the identified heritage resources/ sites inside the EPL area.

Site 1: Farm Elandsvlak-Main farmsteads and related structures.

Site coordinates: S -19.1018649° E 17.9207232°

Description: A mixture of historical and contemporary buildings, kraal related structures and maize fields.

Significance rating: 4

Vulnerability rating: 2 (the buildings are well maintained, detail of them is unknown and in close proximity to the maize field).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of the farmstead and related structures at Farm Elandsvlak.

Site 2: Farm Elandsvlak-Burial site

Site coordinates: S -19. 097658° E 17.907630°

Description: A burial site with 20+ graves, the graves are partially fenced off. All the graves are stones capped.

Significance rating: 4

Vulnerability rating: 2 (the burial site is partially demarcated although the fence is not stable, the

burial site is in close proximity of the farmstead).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of the burial site at Farm Elandsvlak, graves are stone capped.

Example of the stakeholder's engagement at Farm Elandsvlak

Site3: Farm Bethanie 01-Main farmsteads and related structures.

Site coordinates: S -19.096191° E 17.994863°

Description: A contemporary buildings and kraal related structures.

Significance rating: 4

Vulnerability rating: 2 (New multiple buildings).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of the contemporary farmstead at farm Bethanie

Site 4: Farm Bethanie 02-Main farmsteads and related structures.

Site coordinates: S -19.091642° E 17.998625°

Description: A mixture of historical and contemporary buildings, kraal related structures and garden.

Significance rating: 4

Vulnerability rating: 2 (the buildings are well maintained, detail of them is unknown and in close proximity to the maize field).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of the backyard farmsteads at farm Bethanie

Site 5: Farm Ebenerze-Main farmsteads and related structures.

Site coordinates: S -19.133039° E 17.028834°

Description: A mixture of historical and contemporary buildings, kraal related structures and maize fields.

Significance rating: 4

Vulnerability rating: 2 (the buildings are well maintained, detail of them is unknown and in close proximity to the maize field).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of historical farmsteads at farm Ebenezer

Site 6: Farm Ebenezer-Burial site

Site coordinates: S -19. 123206° E 17.028834°

Description: A burial site with 7 graves, the graves are an open space. All the graves are stones capped.

Significance rating: 4

Vulnerability rating: 2 (the burial site is partially demarcated although the fence is not stable, the

burial site is in close proximity of the farmstead).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of the burial site, stone capped at farm Ebenezer

Site 7: Farm Brakkies-Main farmsteads and related structures.

Site coordinates: S -19.070718° E 17.115654°

Description: A concentration of farmsteads.

Significance rating: 4

Vulnerability rating: 2 (the buildings are well maintained, detail of them is unknown and in close proximity to the maize field).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of the farmsteads at farm Brakkies

Site 8: Farm Brakkies-Burial site

Site coordinates: S -19. 066617° E 17.115654°

Description: A burial site with 3 graves, the graves are an open space. All the graves are stones capped.

Significance rating: 4

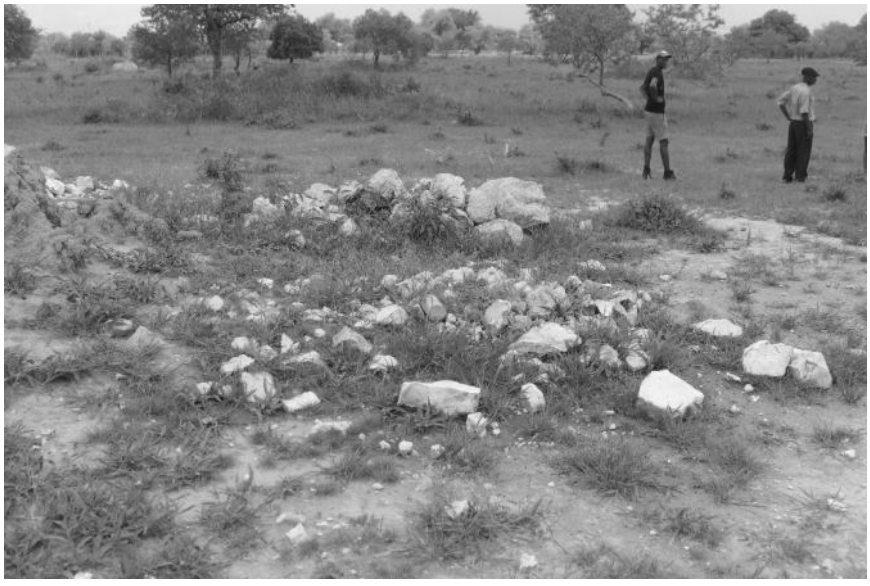
Vulnerability rating: 2 (the burial site is partially demarcated although the fence is not stable, the

burial site is in close proximity of the farmstead).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive



Example of burial site at farm Brakkies

Example of stakeholder's engagement at farm Brakkies

Site 1: Farm Don Tsabeb-Burial site

Site coordinates: S -19. 032572° E 18. 092189°

Description: A burial site with 8+ graves, the graves are on open space overgrown by vegetation. All the graves are stones capped.

Significance rating: 4

Vulnerability rating: 2 (the burial site is partially demarcated although the fence is not stable).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of the burial sites at farm Don Tsabeb

Site 11: Farm Don Tsabeb-Main farmsteads and related structures.

Site coordinates: S -19.029676° E 18.097173°

Description: A concentration of farmsteads.

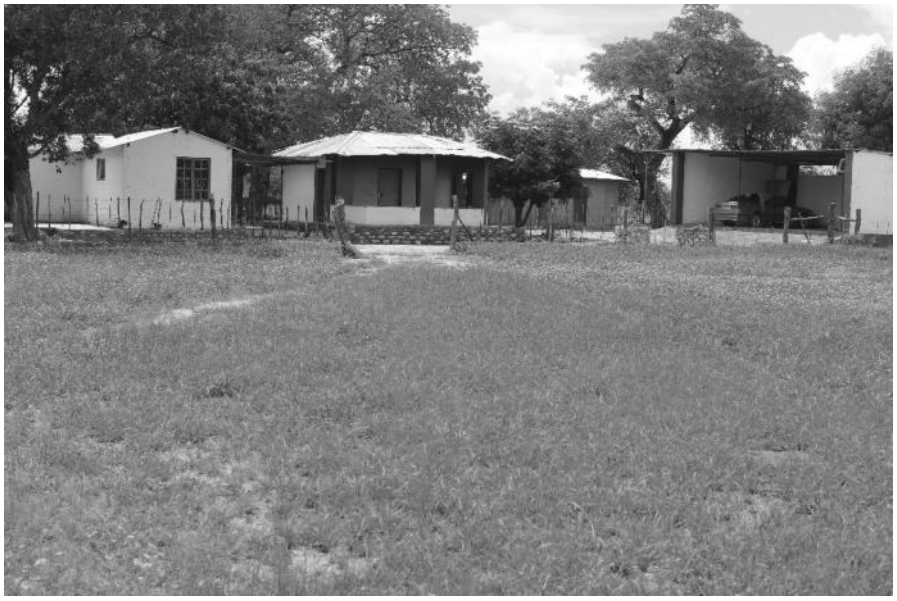
Significance rating: 4

Vulnerability rating: 2 (the buildings are well maintained, detail of them is unknown and in close proximity to the workers quarters).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive



Example of the farmsteads at farm Don Tsabeb

Site 11: Farm Kliprand- farmsteads and related structures.

Site coordinates: S -19.0196° E 18.074657°

Description: A concentration of farmsteads.

Significance rating: 4

Vulnerability rating: 2 (Contemporary building, detail of it is unknown and in close proximity to the workers quarters).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of the farmstead at farm Kliprand

Site 12: Farm Kliprand-Main farmsteads and related structures.

Site coordinates: S -19.993426° E 18.03321°

Description: A concentration of farmsteads.

Significance rating: 4

Vulnerability rating: 2 (historical building, detail of it is unknown and in close proximity to the workers quarters and maize field).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of the historical farmstead at farm Kliprand

Site 1: Farm Middelin-Main farmsteads and related structures.

Site coordinates: S -19.049283° E 18.158619°

Description: A concentration of farmsteads.

Significance rating: 4

Vulnerability rating: 2 (Contemporary building, detail of it is unknown and in close proximity to the workers quarters).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of the farmstead at farm Middelin

Site 1: Farm Windport-Main farmsteads and related structures.

Site coordinates: S -19.309257° E 18.989488°

Description: A concentration of farmsteads.

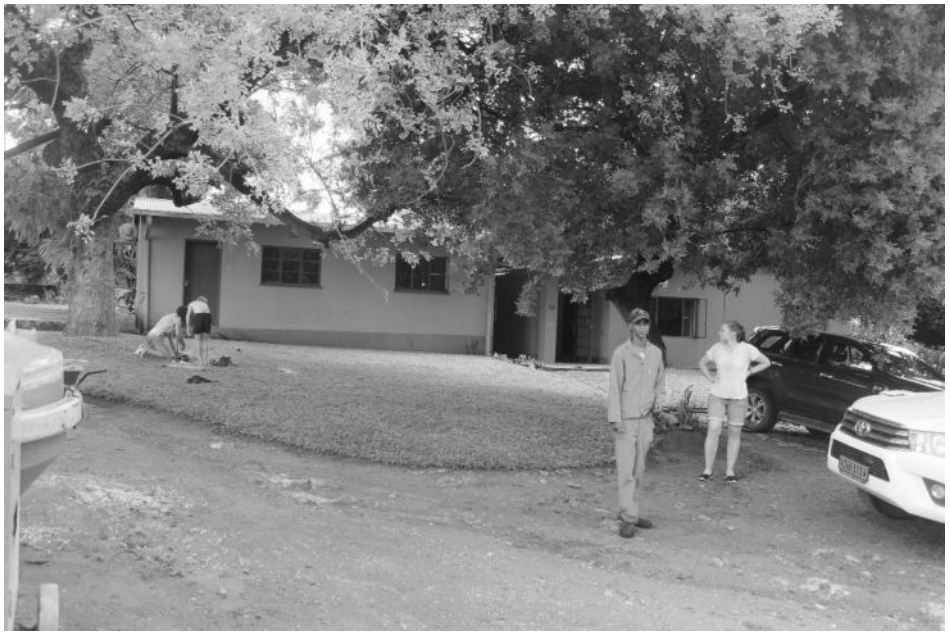
Significance rating: 4

Vulnerability rating: 2 (A mixture of buildings both historical and contemporary, detail of it is unknown and in close proximity to the workers quarters).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive



Example of farmstead at farm Windport

Site 2: Farm Windport-Burial site

Site coordinates: S -19. 309459° E 18. 989444°

Description: A burial site with 4+ graves, the graves are on open space overgrown by vegetation. All the graves are stones capped.

Significance rating: 4

Vulnerability rating: 2 (the burial site is partially demarcated although the fence is not stable).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of the burial sites at Windport

Site 1: Farm Vanadia-Main farmsteads and related structures.

Site coordinates: S -19.309257° E 18.989488°

Description: A concentration of farmsteads.

Significance rating: 4

Vulnerability rating: 2 (A group of contemporary buildings, detail of it is unknown and in close proximity to the workers quarters).

Records: Photographs not allowed and only field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Site 2: Farm Anabeb-Burial site

Site coordinates: S -19. 2867955° E 18. 0939581°

Description: A burial site with many graves, the graves are in an open space overgrown by vegetation. All the graves are stones capped and disappearing.

Significance rating: 4

Vulnerability rating: 2 (the burial site is partially demarcated although the fence is not stable).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of the burial site at farm Anabeb

Site 3: Farm Anabeb-Burial site

Site coordinates: S -19. 272605° E 18. 102870°

Description: A burial site with many graves, the graves are on an open space overgrown by vegetation. All the graves are stones capped.

Significance rating: 4

Vulnerability rating: 2 (the burial site is partially demarcated although the fence is not stable).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of many burial sites within farm Anabeb

Site 4: Farm Anabeb-Burial site

Site coordinates: S -19. 290203° E 18. 084702°

Description: A burial site with many graves, the graves are on open space overgrown by vegetation. All the graves are stones capped.

Significance rating: 4

Vulnerability rating: 2 (the burial site is partially demarcated although the fence is not stable).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of many burial sites within farm Anabeb

Site 5: Farm Anabeb-Mine.

Site coordinates: S -19.309257° E 18.989488°

Description: An open pit and underground mine and a water-bottomed pit surrounded by bushes and trees

Significance rating: 4

Vulnerability rating: 2 (the Abenab mine was 100-metres deep and 200-metres wide. The operation ran like a small town with its own post office, swimming pool, cricket club, school and clubhouse).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of an open pit and underground mine within farm Anabeb

Example of historical building within farm Anabeb

Site 1: Farm Limenam-Main farmsteads and related structures.

Site coordinates: S -19.288188° E 18.0824487°

Description: A concentration of farmsteads.

Significance rating: 4

Vulnerability rating: 2 (A group of historical buildings, detail of it is unknown and in close proximity to the workers quarters).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of the historical farmstead at farm Limenam

Site 2: Farm Limenam-Burial site

Site coordinates: S -19. 339762° E 18. 069134°

Description: A burial site with a few graves, the graves are in an open space overgrown by vegetation. All the graves are stones capped.

Significance rating: 4

Vulnerability rating: 2 (the burial site is partially demarcated although the fence is not stable).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of the burial site, still in use at farm at farm Limenam

Site 1: Farm Dortheim-Main farmsteads and related structures.

Site coordinates: S -19.207075° E 18.117931°

Description: A concentration of farmsteads.

Significance rating: 4

Vulnerability rating: 2 (A group of historical buildings, detail of it is unknown and in close proximity to the workers quarters).

Records: Photographs and field notes

Reversibility rating: Irreversible

Condition assessment: Sensitive

Example of the historical building within farm Dortheim.

5.2 CONCLUSION AND MANAEGEMENT RECOMMENDATONS

In conclusion, the exploration concern for this EPL area is impacts to the heritage sites. The field survey covered 95 % of the EPL area and only 5 % of the EPL area was not covered by the field survey due to access that was not granted on some farm while some farms were under flood. Stakeholders' consultation was conducted and proved to be a pivotal exercise as they supplied information on the heritage profiling of the whole EPL area and specific farms. Available literature demonstrates that heritage sites such as those identified within the concerned EPL area have received limited archaeological attention in Namibia. The wider cultural environment has been rated as of low heritage significance, but the Anabeb is of high heritage significance. There are no heritage concerns, so long as monitoring is implemented around identified potential heritage sites.

- A pre-exploration heritage/archaeological walkdown survey of the final EPL site layout must be conducted by a suitably qualified heritage practitioner in exploration target area.
- No stones may be removed from any burial sites.
- No-Go signage must be placed at all potential identified heritage sites.
- Rehabilitation of all areas needed after exploration.
- If any archaeological material or human burials are uncovered during the course of exploration, then work in the immediate area should be halted. The find would need to be reported to the NHC and may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.
- The Historical farmstead and burial sites are protected and should be avoided with at least a 30m buffer to prevent any direct impact during exploration activities.

The Chance Finds Procedure must be included in throughout the project as follow.

REFERENCE

Selby Hearth; THE "WORLD'S GREATEST MINERAL LOCALITY": HAI‖OM, NDONGA, HERERO, AND THE EARLY COLONIAL HISTORIES OF TSUMEB, NAMIBIA. *Earth Sciences History* 2021;; 40 (2): 433–460. doi: https://doi.org/10.17704/1944-6187-40.2.433

https://www.irocks.com/galleries/tsumeb-fine-mineral-specimens-mixed?srsltid=AfmBOorSTRJ3DdFqa-hW6RxIKGs4mlnNna7xUL-j914ZWsVhfuCxvxTm (accessed 11 March 2025)

Miller, R. McG. 2008. The Geology of Namibia, 3 volumes. Geological Survey of Namibia, Ministry of Mines and Energy, Windhoek.

APPENDIX A: CHANCE FIND GUIDELINES

The following management procedures (extracted from Kinahan, 2012) for Chance Finds are intended to illustrate how these issues can be handled in the exploration and mining environment but could be applied in the case of the construction of the proposed feedlots. These are not intended to be prescriptive in any way but merely to indicate a best practice approach, comprising specific actions and responsibilities that are consistent with the law.

MANAGEMENT OF CHANCE FINDS

INTRODUCTION: Areas of proposed mining and related 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 personnel and contractor heritage induction process in intended to sensitize people so that they may recognize heritage "chance finds" in the course of their 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 by a trained archaeologist or other appropriately qualified person.

INTENT: The "chance finds" procedure is intended to ensure compliance with the AMP, which is based on archaeological best practice, and the relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): "a person who discovers any archaeological … object … must 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.

RESPONSIBILITIES:

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

PROCEDURE:

1. Action by person identifying archaeological or heritage material:
    - If operating machinery or equipment, stop work
    - Identify the site with flag tape
    - Determine GPS position if possible
    - Report findings to Foreman

2. Action by Foreman:
    - Report findings, site locations and actions taken to Superintendent
    - Cease any work in immediate vicinity
    - Action by Superintendent:
    - Visit site and determine whether work can proceed without damage to findings
    - Determine and mark exclusion boundary
    - Add site location and details to AMP GIS for field confirmation by archaeologist

3. Action by Archaeologist:
    - Inspect site and confirm addition to AMP GIS
    - Advise NHC and request written permission to remove findings from work area
    - Recover, package and label finds for transfer to National Museum

4. In the event of discovering human remains:
    - Actions as above
    - Field inspection by Archaeologist to confirm that remains are human
    - Advise and liaise with NHC and Police
    - Recover remains and remove to National Museum or National forensic Laboratory, as directed