Minera-XploreConsultancy

A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED MINERAL EXPLORATION, AND SMALL-SCALE MINING ON MINING CLAIMS (MCs: 74090 to 74098), DAURES CONSTITUENCY, UIS, ERONGO REGION.

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DOCUMENT DATA SHEET

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EXECUTIVE SUMMARY

Ringmen Investment (Pty) Ltd (hereinafter referred to as the proponent), provisionally acquired mineral rights over the project area, Mining Claims (MCs 74090 to 74098). These Mining Claims (MCs 74090 to 74098) are located 43 km south west of Uis settlement accessible via C35 and D2342 gravel roads in Dâures Constituency, Erongo Region, western central Namibia. The project area is a state land, gazetted as the Tsiseb Conservancy by the Ministry of Environment, Forestry and Tourism in 2001. On these mining claims, the proponent plans to conduct exploration and mining operations for base and rare metals, industrial minerals and precious metals. The proposed exploration activities, which include desk research, geophysical surveys, geochemical surveys, geological mapping, trenching, drilling, geochemical sampling, and laboratory analysis with a goal of identifying mineral resources of economic interest, will take place during the first six (6) months of operation. Once determined to be commercially viable, the deposit will be developed into a conventional small-scale open pit mine with a beneficiation facility that uses standard crushing, grinding, and concentration methods.

The proposed exploration and mining activities falls under the activities that are listed in the Environmental Management Act, 2007 (Act No. 7 of 2007) and Environmental Regulations procedure (GN 30 of 2012). These activities cannot be undertaken without an Environmental Clearance Certificate (ECC). In order to obtain an Environmental Clearance Certificate for the proposed activities, the proponent is required to have undertaken an Environmental Impact Assessment (EIA) study and Environmental Management Plan (EMP). As such, an environmental clearance certificate must be applied for in accordance with regulation 6 of the 2012 environmental regulations. Therefore, the proponent has appointed Minera-Xplore Consultancy CC to conduct the Environmental Impact Assessment for the proposed mineral prospecting, exploration and small-scale mining on Mining Claims (MCs 74090 to 74098).

Mining Claims (MCs 74090 to 74098) falls within the northern Namibian tin belt, also known as the Cape Cross Uis pegmatite belt. The Cape-Cross-Uis pegmatite belt is approximately 120 km long and up to 24 km wide and it is thought to represent a half-graben with the prominent Uitseb Thrust fault juxtaposing the stratigraphically higher Amis River Formation. This belt hosts

numerous post-tectonic pegmatite bodies that intruded into meta-sedimentary and granitic rocks of the Zerrissene Group and Salem-type granites. The Cape Cross-Uis pegmatite belt has been divided into three separate pegmatite swarms: Strathmore, Karlowa and Uis and based on classification of Cerny and Ercit (2005). The mining claims are covering mineralized rocks of the Karlowa pegmatite swarm; these post-tectonic pegmatites contain noteworthy, but mostly sub-economic concentrations of Sn, Nb, Ta and Li (Tin-Niobium-Tantalum-Lithium).

Based on the findings of this report, the proposed project benefits outweigh project negative impacts. Potential positive and negative impacts of the proposed project were identified assessed, and mitigation measures are provided in the EMP. These mitigation measures and recommendations provided are deemed sufficient to minimize the identified impacts to acceptable levels.

The project area is not pristine, it already hosts other authorized mining activities such as Uis tin mining in Uis settlement, therefore the natural setting of the area is accustomed to similar operations and that potential negative impact of the proposed project on the natural environment of the surrounding area will be negligible. This project has the potential to contribute to Namibia's economy both directly and indirectly through taxes and royalties, employment creation and socio-economic development, hence the need for this project. It is hereby recommended that proposed mineral exploration and small-scale mining activities on Mining Claims (MCs 74090 to 74098), be granted an Environmental Clearance Certificate, provided that: All mitigations provided in this report are implemented as stipulated and where required and emphasized, improvement should be effectively put in place.

Table of Contents

Cover page……i
Document data sheet ii
Executive Summary iii
Table of Contents ix
List of Figures viii
List of Tables ix
Acronyms and abbreviations..... ..x
1. Introduction..... 1
1.1Project overview 1
1.2 Project location 2
1.3 Terms of reference 7
1.4 Approach to impact assessment 8
1.5 Environmental legal requirements 9
1.6 Purpose of the assessment report 11
1.7 Synopsis of the EIA process 13
1.8 Environmental assessment approach methodology 13
1.9 List of specialist studies undertaken 17
1.10Assumptions and limitations..... 17
2. National Regulatory framework 18
2.1. National Legislation..... 18
2.2.National Policies and plans..... 25
2.3.Applicable International legislation and Principles 27
3. Project description 28
3.1.Project need and desirability..... 28
3.2.Project alternatives..... 28
3.3.No Go alternatives 29
3.4.Infrastructure and services 31
3.5. Potential land use conflicts 40
4. Description of the proposed project..... 41
4.1.Non-invasive exploration methods 46
4.2. Invasive exploration methods 46
5. Description of the receiving environment..... 51

5.1.Socio-Economic Environment 51
5.2.Climatic physiography 53
5.3.Geology 62
5.4.Surface water 66
5.5.Groundwater/hydroeology 67
5.6.Topography 68
5.7. Terrestrial ecology: fauna and flora 69
5.8.Archaeology and Heritage Sites 74
6. Assessment of Impacts 75
6.1. Impact analysis and evaluation 77
6.2.Identified impacts on bio physical environment 80
6.2.1. Air quality impacts 80
6.2.2. Noise and vibration impacts 82
6.2.3. Impact on terrestrial bioderversity(fauna and flora) 84
6.2.4. Land and soil disturbance 89
6.2.5. Groundwater and surface water management 91
6.2.6. Fire and explosive hazards 93
6.2.7. Hazardous waste amd material management 95
6.2.8. Solid waste management 96
6.2.9. Heritage and archaeological impacts 96
6.2.10. Visual impacts 99
6.2.11. Occupational health, safety and security 101
6.2.12. Impacts on vehicular traffic use and safety 102
6.3. Socio-economic Impacts 105
6.3.1. Positive socio-economic impacts 105
6.3.2. Negative socio-economic impacts 106
7.Environmental management plan (EMP) 109
7.1.Purpose of Environmental management plan (EMP) 109
7.2.Organization plan : roles and responsibilities 113
7.3.Monitoring, reporting and corrective action 126
7.4. Environment code of conduct 130
7.5.Site closure and rehabilitation 130

8.Public Consultation 133
8.1.Legal framework 133
9.Conclusion 137
10.Recommendations 138
11.References 140
Appendix A: Registered IAPs 142
Appendix B: Proof of public consultations ..... as attachments
Appendix C: CV of EP ..... as attachments
Appendix D: BID ..... as attachments

List of Figures

Fig.1. Locality of Mining Claims (MCs 74090 to 74098) in Erongo Region, western central Namibia ……..…..…**5**
Fig. 2. Google map showing the location of Mining Claims (MCs 74090 to 74098)..……...…….……..**6**
Fig. 3. Mining Claims (MCs: 74090 to 74098), on Namibia mining cadastre map portal (https://maps.landfolio.com/Namibia.....**7**
Fig.4. General schematic presentation of the Environmental Impact Assessment process in Namibia (SELH, 2012)…….....**12**
Fig.5. . Location of Mining Claims (MCs: 74090 to 74098), accessible via gravel roads C35 and D2342, 43 km south west of Uis settlement……..**31**
Fig.6. Water tankers and bowsers to be used for transporting water from Uis ……..…...**32**
Fig. 7. Toilet facilities similar to these to be made available on site……..**35**
Fig. 8. . Shows a schematic representation of pitting sites that were discovered on one EPL near the mining claims…….……..**47**
Fig.9. RC and diamond drilling rigs at work also shown is drill core (activities are very localized with limited footprint……...……..**49**
Fig.10. Monthly average rainfall graph for Uis and the surrounding areas(Weather Atlas/Uis-climate, 2023)…….**54**
Fig.11. Average annual rainfall in Namibia (ACACIA, 2002)……..…**55**
Fig.12. Monthly average minimum and maximum temperatures of Uis that have been extrapolated to Mining Claims (MCs: 74090 to 74098), (Weather Atlas/Uis-climate, 2023)..**56**
Fig.13. Annual average minimum and maximum temperatures of Uis that have been extrapolated to Mining Claims (MCs: 74090 to 74098), (Weather Atlas/Okombahe-climate, 2023)…….....**57**
Fig. 14. Average annual temperature in Namibia (ACACIA, 2002)……...**57**
Fig. 15. Average annual evaporation in Namibia (ACACIA,2002).…….**58**
Fig. 16. Average wind speed per month in Uis (Weather Atlas/Uis-climate, 2023)…….**60**
Fig.17. Wind rose for Uis Settlement, showing how many hours per year the wind blows from the indicated direction (Meteoblue 2023)……..……..…**60**
Fig.18. Uis Settlement average humidity (Weather Atlas/Uis-Climate,2023)....…….…….....**61**
Fig.19. Tectonic zones of the Damara orogenic belt. (Shape files are from the Geological Survey of Namibia). TheMining Claims (MCs: 74090 to 74098), are located in the northern zone (NZ) of the Damara belt.....**63**
Fig. 20. Geology map of the project area……..……**64**
Fig. 21 Detailed local geology of Mining Claims (MCs: 74090 to 74098)…….……..**68**
Fig.22.Hydrogeological Map of the project area. The project area is underlain by a region with little or no groundwater……..**71**

List of Tables

Table 1: Coordinate demarcation boundary for Mining Claims (MCs 74090 to 74098)……...**2**
Table 2: Listed activities potentially triggered by the proposed project……...**10**
Table 3: Details of the regulatory framework applicable to the proposed project……**19**
Table 4: National polices and plans applicable to the proposed Project……...**25**
Table 5: Specific permits and licence requirements for the proposed Project under the various applicable Acts……...**26**
Table 6: Statistics of Dâures Constituency……...…**52**
Table 7: Average climate in Uis and the surrounding areas (weather-atlas, 2023)……..**59**
Table 8: Plant species found in the study area……..**70**
Table 9: Mammal species likely to occur within the project area……...**72**
Table 10: Reptile species likely to occur within the project area……**73**
Table 11: Impact assessment criteria……**77**
Table 12: Qualitative assessment for air quality impacts……**81**
Table 13: Shows the qualitative impact assessment for noise and vibration impact……**83**
Table 14: Shows the qualitative impact assessment for terrestrial biodiversity……...**87**
Table 15: Shows the qualitative impact assessment for alien invasive plants……..**88**
Table 16: Shows the qualitative impact assessment for land and soil disturbance…….…..**89**
Table 17: Shows the qualitative impact assessment for surface and groundwater……...**92**
Table 18: Shows the qualitative impact assessment for fire and explosion hazards……**94**
Table 19: Shows the qualitative impacts assessment for hazardous waste and materials....…....**95**
Table 20: Shows qualitative impacts assessment for solid waste management …….……..**98**
Table 21: Shows heritage impact assessment……..**98**
Table 22: Shows visual impacts impact assessment……..……**100**
Table 23: Shows qualitative impacts assessment for occupational health, safety and security.**103**
Table 24: Shows qualitative impacts assessment for road use (vehicular traffic)…….…**103**
Table 25: Shows qualitative impacts assessment for grazing area……....**106**
Table 26: Shows the qualitative impacts assessment for socio economic……..……**107**
Table 27: Roles and responsibilities of various stakeholders to the EMP……..……**114**
Table 28: Roles and responsibilities of various stakeholders, environmental indicators and objectives……**115**
Table 29: Implementation of the objectives should be adhered to as indicated in the table.….**115**
Table 30: Summary of environmental impacts, mitigation measures and monitoring plan for all project phases……...……**117**
Table 31 (a): Register of Organs of State as per section 22(c) of the EIA regulations of 2012
(b)Registered stakeholders (register was made available from January 2023)……...…….**142**

Acronyms and abbreviations

Below a list of acronyms and abbreviations used in this report.

Acronyms / Abbreviations	Definition
dBA	decibels
DEA	Directorate of Environmental Affairs
DWA	Department of Water Affairs
ECC	Environmental Clearance Certificate
EHS	Environmental Health and Safety
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
GDP	Gross Domestic Products
GPS	Geographical Positioning System
HIV/AIDS	Human Immunodeficiency Virus/Acquire Immunodeficiency Syndrome
I&AP	Interested and Affected parties
LTC	lithium-cesium-tantalum
MCs	Mining Claims
MEFT	Ministry of Environment, Forestry and Tourism
MEFT: DEA	Ministry of Environment, Forestry and Tourism: Department of Environmental Affairs
MME	Ministry of Mines and Energy
NDP5	Fifth National Developmental Plan
REE	Rare Earth Elements
Sn-Nb-Ta-Li	Tin-Niobium-Tantalum-Lithium
Target area	The area covered by the mining claims

1. Introduction

1.1. Project Overview

Ringmen Investment (Pty) Ltd (hereinafter referred to as the proponent), provisionally acquired mineral rights over the project area on Mining Claims (MCs 74090 to 74098) for base and rare metals, industrial minerals and precious metals, from the Ministry of Mines and Energy (MME). The Ministry of Mines and Energy (MME), through the department of Mines undertakes to exploit the country's mineral resources through issuance of mineral rights and it is through this process that Mining Claims (MCs 74090 to 74098) were provisionary issued, pending approval subject to an Environmental Clearance Certificate (ECC). The issuance of an Environmental Clearance Certificate by Ministry of Environment, Forestry and Tourism (MEFT) will pave way for the envisaged exploration activities.

The proposed exploration activities will take place in the first six (6) months of operation and this include: desktop studies, geophysical surveys, geochemical survey, geological mapping, trenching, drilling and geochemical sampling as well as laboratory analysis aimed discovering mineral resources of economic interest. Once the mineral deposit has been identified and proven to be economically feasible the next step is to open a small scale mine. Conventional open pit mining method will be utilized. The project calls for building and running an open pit mine with a beneficiation facility that uses standard crushing, grinding, and concentration methods. As soon as the clearance certificate is received, the proponent intends to carry out these activities.

Mining Claims (MCs 74090 to 74098) falls within the northern Namibian tin belt, also known as the Cape Cross Uis pegmatite belt. The Cape-Cross-Uis pegmatite belt is approximately 120 km long and up to 24 km wide and it is thought to represent a half-graben with the prominent Uitseb Thrust fault juxtaposing the stratigraphically higher Amis River Formation. This belt hosts numerous post-tectonic pegmatite bodies that intruded into meta-sedimentary and granitic rocks of the Zerrissene Group and Salem-type granites. The Cape Cross-Uis pegmatite belt has been divided into three separate pegmatite swarms: Strathmore, Karlowa and Uis and based on classification of Cerny and Ercit (2005). The mining claims are covering mineralized rocks of the

Karlowa pegmatite swarm; these post-tectonic pegmatites contain noteworthy, but mostly sub-economic concentrations of Sn, Nb, Ta and Li (Tin-Niobium-Tantalum-Lithium).

1.2 Project location

The Mining Claims (MCs 74090 to 74098) are situated 43 km south west of Uis settlement accessible via C35 and D2342 gravel roads in Dâures Constituency, Erongo Region, western central Namibia. The project area is on state territory that was designated as the Tsiseb (Hada-Huigu) conservancy by the Ministry of Environment, Forestry, and Tourism in 2001, sandwiched by the Dorob national park on the left and #Gaingu Conservancy on the right. Two gravel roads C35 and D2342 are the primary access points to the Project from Uis settlement, the roads are in reasonably good condition because local road authorities maintain them frequently. The area under exploration is accessible by 4x4 /2x2 pick-up vehicle by the existing tracks. To guarantee minimal effects on the receiving environment, the sensitive sector of the project area will only be accessible by foot.

GPS coordinates for Mining Claims (MCs 74090 to 74098) are given in Table 1 and the entire area covers a total of 157.5316 Hectares.

Table 1: Coordinate demarcation boundary for Mining Claims (MCs 74090 to 74098).

Mining Claim 74090		
Point No.	**Latitude**	**Longitude**
1	21° 22' 34.48" S	14° 33' 23.04" E
2	21° 22' 44.82" S	14° 33' 04.13" E
3	21° 22' 52.62" S	14° 33' 08.75" E
4	21° 22' 42.50" S	14° 33' 28.11" E
Total Mining Claim Area: 17.7882 Hectares		
Mining Claim 74091		
Point No.	**Latitude**	**Longitude**
1	21° 22' 44.82" S	14° 33' 04.13" E
2	21° 22' 54.52" S	14° 32' 44.66" E
3	21° 23' 02.82" S	14° 32' 49.51" E
4	21° 22' 52.62" S	14° 33' 08.75" E
Total Mining Claim Area: 17.9654 Hectares		

Mining Claim 74092		
Point No.	**Latitude**	**Longitude**
1	21° 22' 24.67" S	14° 33' 41.16" E
2	21° 22' 34.48" S	14° 33' 23.04" E
3	21° 22' 42.50" S	14° 33' 28.11" E
4	21° 22' 32.88" S	14° 33' 46.36" E
Total Mining Claim Area: 17.4822 Hectares		
Mining Claim 74093		
Point No.	**Latitude**	**Longitude**
1	21° 23' 02.38" S	14° 32' 48.93" E
2	21° 22' 52.62" S	14° 33' 08.75" E
3	21° 23' 00.14" S	14° 33' 13.57" E
4	21° 23' 10.20" S	14° 32' 53.09" E
Total Mining Claim Area: 17.6219 Hectares		
Mining Claim 74094		
Point No.	**Latitude**	**Longitude**
1	21° 22' 52.62" S	14° 33' 08.75" E
2	21° 22' 42.50" S	14° 33' 28.11" E
3	21° 22' 50.14" S	14° 33' 33.17" E
4	21° 23' 00.14" S	14° 33' 13.57" E
Total Mining Claim Area: 17.4721 Hectares		

Mining Claim 74095		
Point No.	**Latitude**	**Longitude**
1	21° 22' 42.50" S	14° 33' 28.11" E
2	21° 22' 32.88" S	14° 33' 46.36" E
3	21° 22' 40.99" S	14° 33' 51.49" E
4	21° 22' 50.14" S	14° 33' 33.17" E
Total Mining Claim Area: 16.9818 Hectares		
Mining Claim 74096		
Point No.	**Latitude**	**Longitude**
1	21° 22' 46.36" S	14° 32' 40.20" E
2	21° 22' 36.77" S	14° 32' 59.72" E
3	21° 22' 44.82" S	14° 33' 04.13" E
4	21° 22' 54.52" S	14° 32' 44.66" E
Total Mining Claim Area: 17.7759 Hectares		
Mining Claim 74097		
Point No.	**Latitude**	**Longitude**
1	21° 22' 36.77" S	014° 32' 59.72" E

2	21° 22' 26.60" S	014° 33' 18.20" E
3	21° 22' 34.48" S	014° 33' 23.04" E
4	21° 22' 44.82" S	014° 33' 04.13" E
Total Mining Claim Area: 17.3823 Hectares		
Mining Claim 74098		
Point No.	**Latitude**	**Longitude**
1	21° 22' 26.60" S	014° 33' 18.20" E
2	21° 22' 16.60" S	014° 33' 36.04" E
3	21° 22' 24.67" S	014° 33' 41.16" E
4	21° 22' 34.48" S	014° 33' 23.04" E
Total Mining Claim Area: 17.0618 Hectares		

Total project area, Mining Claims (MCs 74090 to 74098)

	Latitude	**Longitude**
Centre point	21°22'44.14"S	14°33'15.94"E
	-21.378928°	14.554428°
Mining Claims total area (MCs 74090 to 74098): 157.5316 Hectares		

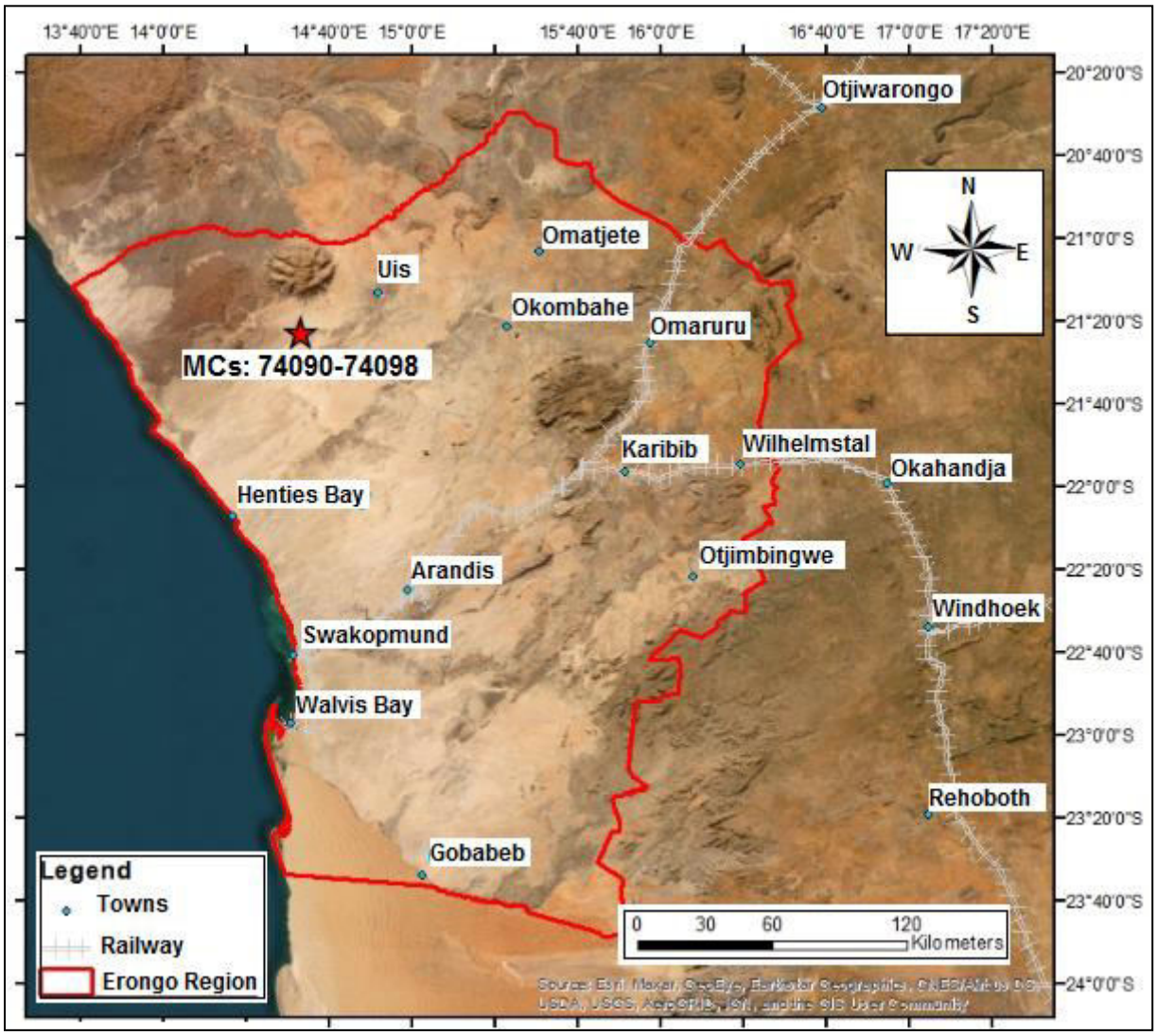

Fig. 1. Locality of Mining Claims (MCs 74090 to 74098) in Erongo Region, western central Namibia.

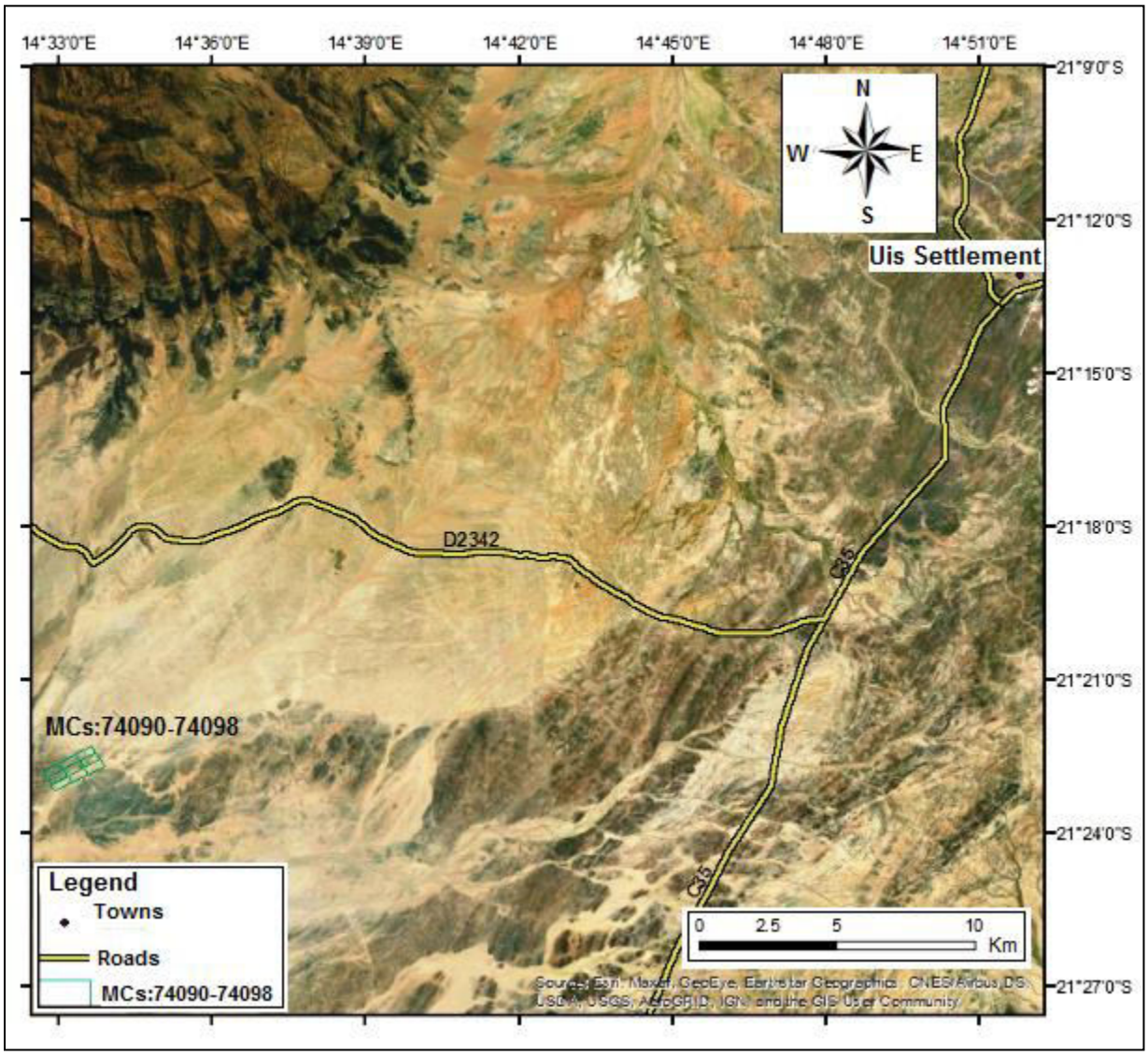

Fig. 2. Google map showing the location of Mining Claims (MCs 74090 to 74098), accessible via D2342 gravel road branching from C35 (connecting Henties Bay to Uis Settlement). The Mining Claims boundary is demarcated by green polygon.

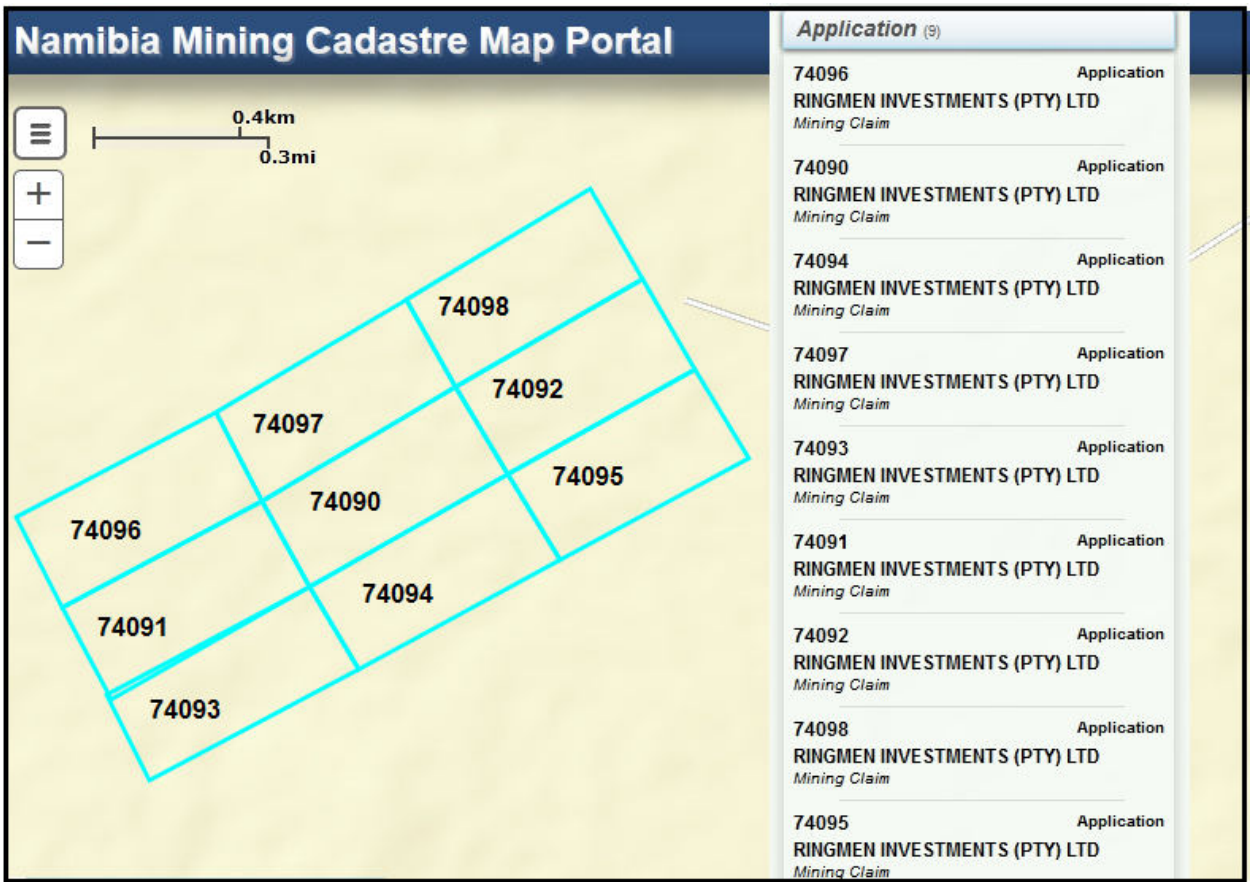

Fig. 3. Mining Claims (MCs: 74090 to 74098), on Namibia mining cadastre map portal (https://maps.landfolio.com/Namibia.

1.3 Terms of Reference

Minera-Xplore Consultancy was appointed by the proponent to undertake a scoping, conduct an Environmental Impact Assessment (EIA) and to prepare an Environmental Management Plan (EMP) for the mineral prospecting and exploration on Mining Claims (MCs: 74090 to 74098). A site visit to the area took place on the January 2023. This assessment study was carried out in accordance with the Environmental Management Act (No. 7 of 2007) and Environmental Regulations of 2012, as well as the Terms of Reference (ToR) which were provided by the proponent). It is a guiding document which indicates the description of the environment that may be affected by the activity and the manner in which the activity may affect the environment.

Information relating to the receiving environment and its social surroundings has been sourced through the following methods:

- Legal and policy review; Identify all legislation and guidelines that have reference to the proposed project.
- Identify existing environmental (both bio-physical and socio-economic) conditions of the area.
- Inform Interested and Affected Parties (I&APs) and relevant authorities of the details of the proposed development and provide them with a reasonable opportunity to participate during the process.
- Consider the potential (both bio-physical and socio-economic) impacts of the development and assess the significance of the identified impacts.
- Document opinions and concerns raised by I&AP's and stakeholders.
- Describe the need and desirability of the activity, propose alternative measures where it is noticed that adverse effects may occur.
- Provide a high level of environmental and social impact assessment on feasible alternatives that were considered.
- Outline management and mitigation measures in an Environmental Management Plan (EMP) to minimize and/or mitigate potentially negative impacts.
- Submit the final assessment report to the competent authority and the Environmental Commissioner.

1.4 Approach to the impact assessment

1.4.1 Objectives of the Environmental Assessment Process

The main objective of this environmental assessment is to determine and assess the potential environmental impacts that are likely to result from the proposed mineral prospecting and exploration on Mining Claims (MCs: 74090 to 74098). In a nutshell, an environmental assessment process is carried to achieve better developmental interventions through protecting human, physical, and biotic environments. This is one component in the environmental planning and

management of projects, that focuses upon the consent stage of the project. The study entails assessments of likely short and long term positive and negative environmental impacts of the activities related to the proposed exploration project.

This Scoping Report (including an assessment of impacts), together with the EMP, will provide sufficient information for the Ministry of Mines and Energy (MME) as the Competent Authority and the Ministry of Environment, Forestry and Tourism (MEFT) to make an informed decision regarding the proposed project, and whether an environmental clearance certificate can be issued or not.

The assessment covered the proposed study for the following developmental stages:

- Planning, Prospecting and Exploration phase
- Operation (mining stage) and ongoing monitoring
- Decommissioning, site closure and rehabilitation

1.5 Environmental legal requirements

Mineral prospecting, exploration, and all mining related activities are among the listed activities that may not be undertaken without an Environmental Clearance Certificate (ECC) according to Section 27 (1) of the Environmental Management Act (EMA) (No. 7 of 2007) and its 2012 Environmental Impact Assessment (EIA) Regulations. As such, individuals or organizations may not carry out exploration activities among those listed, without an EIA Study undertaken and an ECC awarded. The listed activities as per EIA regulations that are relevant to the proposed prospecting and exploration activities are as follows:

Table 2: Listed activities potentially triggered by the proposed project

Listed activity	As defined by the regulations of the act	Relevance to the project
Mining and quarrying activities	3.1 The construction of facilities for any process or activities which requires a licence, right or other form of authorization, and the renewal of a licence, right or other form of authorization, in terms of the Minerals (Prospecting and Mining Act),1992. 3.2 Other forms of mining or extraction of any natural resources whether regulated by law or not. 3.3 Resource extraction, manipulation, conservation, and related activities.	-The proponent was conditionally granted Mining Claims (MCs) by MME, pending clearance certificate (ECC). Therefore, the proponent now requires an ECC from DEA/MEFT for mineral exploration/prospecting. - Soil and rocks will be sampled within selected target areas of the project area - Soil and rocks will be sampled within selected target areas of the project area.
Water resource developments	8.1 The abstraction of ground or surface water for industrial or commercial purposes	-The proponent intends to use groundwater and/or surface water for dust suppression, ore crushing and domestic purpose.
Hazardous substance treatment, handling, and storage	9.1 The manufacturing, **storage**, **handling**, or processing of hazardous substance defined in the Hazardous Substances Ordinance, 1974. 9.2 Any process or activity that requires a permit, licence, or other form of authorization, or the modification of, or changes to, existing facilities for any process or activity that requires amendment of an existing permit, licence or authorization, or which requires a new permit, licence or authorization in terms of governing the generation or release of emissions, pollution, effluent, or waste	**-** Explosives will be stored safely on site for use in the mine. **-** Licences will be obtained for hazardous substances and their storage and use on site. **-** Petrol, diesel, liquid petroleum gas or paraffin will be stored for use in vehicles and equipment.

1.6 Purpose of the Assessment Report

The assessment report is prepared for the Environmental Impact Assessment for Mineral prospecting, exploration. The main purpose of this report is to provide information relating to the proposed exploration and mining activities and to indicate which environmental aspects and potential impacts that have been identified during the screening and assessment phases. Environmental assessment is a critical step in the preparation of an EIA for the proposed exploration activities. The assessment process shall be concluded with the establishment of terms of reference for the preparation of an EIA, as set out by the Ministry of Environment, Forestry and tourism. The purpose of this assessment report is to:

- Identify any important environmental issues to be considered before the commencement of the proposed exploration and consequently mining activities on Mining Claims (MCs: 74090 to 74098).
- To identify appropriate time and space boundaries of the EIA study.
- To identify information required for decision-making.

As such, the key objectives of this assessment study are to:

- Inform the public about the proposed exploration and mining activities.
- Identify the main stakeholders and incorporate their comments and concerns.
- Define reasonable and practical alternatives to the proposal.
- To establish the terms of reference for an EIA study.

The assessment study provides a clear description of the environment that may be affected by the activity and the manner in which the activity may affect the environment. Information relating to the receiving environment and its social surroundings has been sourced through the following methods;

- Site visits to collect primary data;
- Legal and policy review;
- Gathering existing information relating to similar developments and issues;
- Discussions, meetings and site visits with authorities;
- Opinions and concerns raised by I&AP's and stakeholders; and

- ❖ Qualified opinions from professional studies.

This report is the Assessment Report. Taking the above mentioned into consideration, this report, together with the attached EMP, will provide sufficient information for MEFT to make an informed decision regarding the proposed exploration activities, and whether an environmental clearance certificate can certificate can be issued or not. A schematic representation of the EIA process in Namibia is given in Fig. 4.

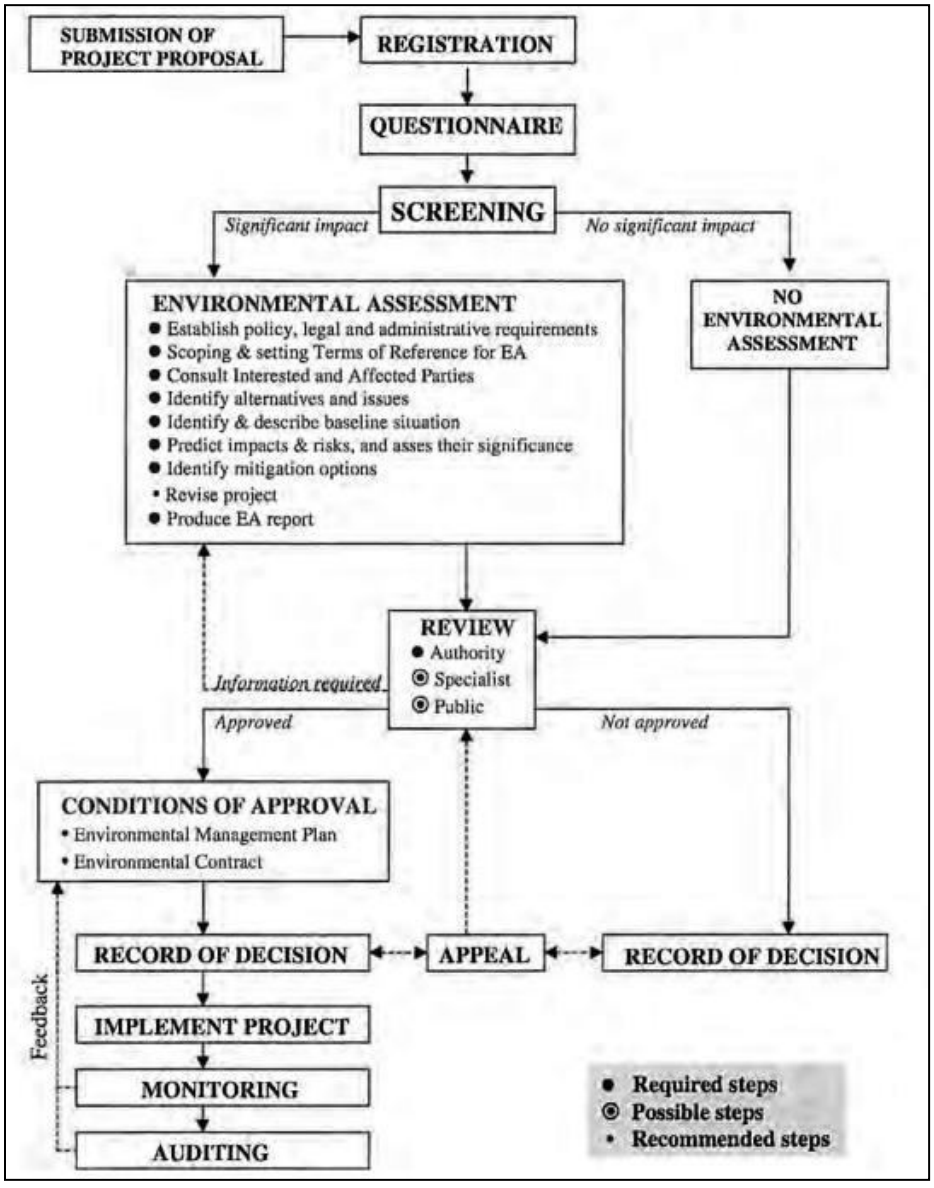

Fig. 4. General schematic presentation of the Environmental Impact Assessment process in Namibia (SELH, 2012).

1.6.1 Environmental Consultant

Minera-Xplore Consultancy (Reg. No. CC/2021/10286) is a wholly Namibian owned close corporation, established in 2021 to provide consulting services to various public and private sectors in areas such as Strategic Environmental Assessments (SEA), Environmental Impact Assessments (EIA) and development of Environmental Management Systems. The Environmental Assessment Practitioner (EAP) for this study is Ms. N Ndakunda. Her main area of expertise includes Mineral exploration, Environmental Management as well as Groundwater exploration and resource management. She holds a B.Sc (Honours) in Geology (University of Namibia), B.Sc (Honours) in Geohydrology (University of Free State) and is currently doing a Master's Degree in Integrated Environmental Management & Sustainable Development (International University of Management). CV is attached for further information on her educational qualifications and experience.

1.7 Synopsis of the EIA process

Environmental Impact Assessment (EIA) Regulations, 2012 and the Environmental Management Act (EMA), 2007, (Act No. 7 of 2007) served as the guiding tools for the environmental assessment process. The process followed in undertaking this environmental assessment can be summarized as follows:

- Preparation of the Background Information Document (BID) (*Carried out in January 2023*).
- Preparation of the Public Notice published in the local newspapers, for two consecutive weeks, as part of required public consultation process *(Carried out in January 18 to 2 February2023).* Published public notices in the Confidénte Newspaper (*21-26 January and 27 January – 2February 2023*) and Windhoek Observer (*18 -30 January 2023)* daily.
- Invitation / notices to identified and registered interested and affected parties (I&Aps) and the general public to participate in the environmental assessment process for the project, through via direct email, and telephonic call communications to key stakeholders and authoritative institutions such as Line Ministries (MME, MEFT, Ministry of Water,

Agriculture and Land Reform), Regional (Erongo) and Local Governments (Daures Constituency and Uis Town/ Settlement Council), and affected Traditional authority (Dâure Daman Traditional Authority, Tsiseb Conservancy).

- Online registration of the project with MEFT through an online Portal (www.eia.met.gov.na) Application number **APP-001054**
- Site notices were placed around the Dâure Daman Traditional Authority Community Hall in Okombahe. Some posters were placed around Uis settlement and Omaruru town (Community library and Municipality Office). Erecting site notices around the Project area was not going to serve its purpose as the area is isolated from people.
- Stakeholder register made available to I&APs to register their comments and inputs via email for inclusion in the Scoping and EMP Reports (*January 2023*).
- Compilation of the Draft Environmental Scoping Assessment (ESA) and Environmental Management Pan (EMP) reports (consolidating all findings from the I&APs/public consultations. Additional 14 days to be afforded to the interested and affected parties to submit comments / inputs on the proposed project activities directly to the Environmental Commissioner after submission of the application for ECC to the Environmental Commissioner, on the MEFT digital Portal: www.eia.met.gov.na, (*to be carried out in March 2023*).
- Final reports (hard copies) to be submitted to the Environmental Commissioner in MEFT through the MME (Competent Authority) and submission of digital copies with MEFT (to be carried out end of *April 2023*). All issues raised were incorporated into the assessment report.
- Notification of all registered Interested and Affected Parties (I&Aps) confirming that the ESA and EMP reports have been submitted to the MEFT's EIA online portal for final public review and evaluation by MEFT.
- If the ECC is granted, all I&APs will be made aware of the outcome. Similarly, if the ECC is not granted communication to all I&APs will be made.

1.8 Environmental assessment approach and methodology

Environmental assessment process in Namibia is governed by the Environmental Impact Assessment (EIA) Regulations No. 30 of 2012 gazetted under the Environmental Management Act, (EMA), 2007, (Act No. 7 of 2007) and in line with the provisions of the Cabinet approved Environmental Assessment Policy for Sustainable Development and Environmental Conservation of 1995. This report has taken into consideration all the requirements for preparation of all the supporting documents and application for an Environmental Clearance Certificate and lodgments of such application to the Environmental Commissioner (EC), Department of Environmental Affairs (DEA) in the Ministry of Environment, Forestry and Tourism (MEFT). The steps undertaken during the Assessment Phase are summarized below.

1.8.1 Project initiation and screening

The project was registered on the online ECC portal (eia.met.gov.na) in order to provide notification of the commencement of the EIA process and to obtain clarity on the process to be followed.

1.8.2Initial assessment public participation process

The objective of the public assessment process was to ensure that interested and affected parties (I&APs) were notified about the proposed project, given a reasonable opportunity to register on the project database and to provide initial comments. Steps that were undertaken during this phase are summarized below:

I&AP identification:

A project specific I&AP stakeholder database was developed, this database has been maintained and updated as and when required. A copy of the I&AP database is attached in Appendix A. the farmer's contact details were obtained during site visit, contact details of other interested and affected parties that were provided by the proponent. Furthermore, I&APs were added to the database based on responses to the advertisements and notification letters.

Notification letter and Background Information Document (BID):

A Background Information Document (BID) containing descriptive information about the proposed exploration activities was compiled in the initial stages of the environmental scoping assessment (ESA) process and sent out to all pre-identified stakeholders via email. Printed copies of this document were also couriered to stakeholders who were not reachable via email. Attached to the BID was a registration and response form, which provided I&APs with an opportunity to submit their names, contact details and comments on the project. A copy of the BID is attached in Appendix D.

1.8.3 Compilation and Review of Draft Assessment Report (DSR)

The Draft assessment report (DSR) was prepared in compliance with Section 8 of the EIA Regulations of 2012 and incorporated with comments received during the initial Public Participation Process. The DSR will be distributed for a 14-day review and comment period.

1.8.4 Final Assessment Report and Completion of the Assessment Phase

The Final Assessment Report (FSR) summarizes the following: the legal and policy framework; approach to the EIA and process methodology; the project's need and desirability; proposed project activities; key characteristics of the receiving environment; and key issues of concern that will be further investigated and assessed in the next phase of the EIA. The FSR complies with Section 8 of the EIA Regulations 2012. All written submissions received during the DSR review and comment period will be collated and responded to. The FSR will be submitted to the competent authority. In terms of Section 32 of the Environmental Management Act, 2007 (No. 7 of 2007), the competent authority is then required to make a recommendation on the acceptance or rejection of the report to Ministry of Environment, Forestry and Tourism (MEFT): Department of Environmental Affairs (DEA), who will make the final decision.

1.9 List of Specialist Studies Undertaken

Section 9(a) of the Environmental Regulations of 2012 requires a disclosure of all the tasks to be undertaken as part of the assessment process, including any specialist to be included if necessary. Specialist studies on archaeology and biodiversity assessment will be undertaken by qualified experts. As part of the study, a foot survey was undertaken to identify any potential artefacts or human remains which may occur in the area. Archaeological specialist study, together with the consent letter from the Heritage Council of Namibia, is annexed to this report.

1.10 Assumptions and limitations of the assessment study

This EIA report is based on currently available information and, as a result, the following assumptions and limitations apply:

- The report is based on project information provided by the proponent.
- The proposed activities as well as all the plans, maps, line boundary / coordinates, and appropriate data sets received from the proponent, project partners, regulators and competent authorities are assumed to be current and valid at the time of conducting the studies and preparation of this report.
- The impact assessment outcomes, mitigation measures and recommendations to be provided in the EIA/ Scoping and EMP reports are valid for the lifecycle of the proposed project.
- Descriptions of the natural and social environments are based on fieldwork, relevant specialist studies and available literature, where baseline information and impact assessment guidelines were insufficient or unavailable, a precautionary principle approach has been implemented

2. National Regulatory framework

2.1 National Legislation

This chapter outlines the regulatory framework applicable to the proposed project. All mineral rights in Namibia are regulated by the Ministry of Mines and Energy (MME) whereas environmental regulations are regulated by the Ministry of Environment, Forestry and Tourism (MEFT). The Minerals Prospecting and Mining Act (Act No. 33) of 1992 is the principal act governing exploration and mining of mineral resources in the Republic of Namibia. Conversely, MEFT is the overseeing custodian agency for the administration and enforcement of the EMA, with the enforcement of the Environmental Impact Assessment Regulations of 2012 specifically being entrusted with the Department of Environmental and Forestry Affairs within MEFT.

Below is a list of applicable and relevant Namibian legislation, policies and guidelines to the proposed development is given in this chapter. This review serves to inform the project Proponent, Interested and Affected Parties and the decision makers at the DEA of the requirements and expectations, as laid out in terms of these instruments, to be fulfilled for them to carry out the proposed activities.

Table 3: Details of the regulatory framework applicable to the proposed project

National Regulatory Framework	Summary	Relevance to the Project
Constitution of the Republic of Namibia (1990).	**2.1 Constitution of the Republic of Namibia, 1990** The Constitution is the supreme law in Namibia, providing for the establishment of the main organs of state as well as guaranteeing various fundamental rights and freedoms. Provisions relating to the environment are contained in Chapter 11, article 95, which is entitled "promotion of the Welfare of the People". This article states that the Republic of Namibia shall – "actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for all Namibians, both present and future.	The project will enable the full execution of right to practice any profession, or carry on any occupation, trade, or business by availing necessary provisions such as practicing any profession, or carry on any occupation, trade or business in the country. Through implementation of the environmental management plan, the proposed exploration and small-scale mining activities will ensure conformity to the constitution in terms of environmental management and sustainability
Environmental Management Act of 2007	The regulations that accompany this act lists several activities that may not be undertaken without an environmental clearance certificate issued in terms of the Act. This Act and its regulations should inform and guide this EIA process. The project proponent will ensure that	This environmental scoping report documents the findings of the scoping phase of the environmental assessment undertaken for the proposed Project. The process has been undertaken in line with the requirements under the Act and its regulations.

Line Ministry: Ministry of Environment, Forestry and Tourism: Department of Environmental Affairs	all provisions of the mineral exploration EMP are implemented and regular environmental compliance auditing conducted by independent consultants. The act further states that clearance certificate be issued before the commencement of such activities and remains in force for three (3) years. If a person wishes to continue with activities covered by the act, he or she must apply for a new certificate in terms of the Environmental Management Act.	
The Minerals Prospecting and Mining Act of 1992 **Line Ministry:** Ministry of Mines and Energy	The Minerals Prospecting and Mining Act No.33 of 1992 approves and regulates mineral rights in relation to exploration, reconnaissance, prospecting, small scale mining, mineral exploration, large-scale mining and transfers of mineral licences. The proponent has to acquire an Exclusive Prospecting Licence from MME prior to mineral prospecting.	The proposed mining activity requires an EIA to be carried out, as it triggers listed activities in the Environmental Management Act's regulations. The Project shall be compliant with Section 76 of the Act with regards to records, maps, plans and financial statements, information, reports, and returns submitted.
Water Act, 1956 (Act No. 54 of 1956)	This Act provides for the control, conservation, and use of water for domestic, agricultural, urban, and industrial purposes; and to make provision for the control of certain activities on or in water. Furthermore, the act provides for	The Act stipulates obligations to protect water resources (both quality and quantity/abstraction). Measures to minimize potential surface and groundwater pollution are contained in the EMP. The Project is obliged to have all permits relevant

Line Ministry: Ministry of Agriculture, Water and Land Reform: Department of Water Affairs	the regulation and monitoring of water resources and to provide for incidental matters.	to its operations under this Act. These permits include Borehole Drilling Permits, Groundwater Abstraction & Use Permits, and when required, the Wastewater / Effluent Discharge Permits to be obtained from the Ministry of Agriculture, Water and Land Reform (MAWLR).
Nature conservation ordinance, ordinance No. 4 of 1975 **Line Ministry:** Ministry of Environment, Forestry and Tourism	The Nature Ordinance 4 of 1975 covers game parks and nature reserves, the hunting and protection of wild animals (including reptiles and wild birds), problem animals, fish, and the protection of indigenous plants.	The project area is located in Tsiseb Conservancy
National Heritage Act, 2004 (Act No. 27 of 2004) **Line Ministry:** National Heritage Council	National Heritage Act No. 27 of 2004 is responsible for the registration of such places and objects, to establish a National Heritage Council, to establish a National Heritage Register, and to provide for incidental matters. Section 55 compels exploration companies to report any archaeological findings to the National Heritage Council after which a permit needs to be issued before the find can be disturbed. In cases where heritage sites are discovered the "chance find procedure" will be used.	The National Heritage Act provides for the protection and conservation of places and objectives of significance, as all archaeological and paleontological objects belong to the state. There might be potential for heritage objects to be found on site, therefore the stipulations in the Act have been taken into consideration and are incorporated into the EMP.

The National Monuments Act (No. 28 of 1969): **Line Ministry:** Ministry of Education, Arts and Culture (MEAC).	The Act enables the proclamation of national monuments and protects archaeological sites.	
Petroleum Products and Energy Act No. 13 of 1990 **Line Ministry/Body:** Ministry of Mines and Energy	The act regulates the importation and usage of petroleum products. The act reads as "To provide measures for the saving of petroleum products and an economy in the cost of the distribution thereof, and for the maintenance of a price thereof; for control of the furnishing of certain information regarding petroleum products; and for the rendering of services of a particular kind, or services of a particular standard; in connection with motor vehicles; for the establishment of the National Energy Fund and for the utilization thereof; for the establishment of the National Energy Council and the functions thereof; for the imposition of levies on fuel; and to provide for matters incidental thereof".	The Proponent should obtain the necessary authorization from the MME for the storage of fuel on site
The Forestry Act, No. 12 of 2001 as amended by the Forest Amendment Act, No.13 of 2005 **Line Ministry/Body**: Ministry of Agriculture, Water and Land Reform	The act provides for the protection of the environment and the control and management of forest. - Section 22 deals with the protection of natural vegetation that is not part of the surveyed erven of a local authority area as defined. -Section 23 requires a permit from the Director for the clearance of vegetation on more than 15 hectares on any piece of land or several pieces of land situated in the same locality as that which has predominantly woody vegetation; or cut or	The Project activities may require limited land clearing where necessary. Forestry permits maybe required for vegetation clearing. Approval required for the clearance of endemic plants. The Proponent will ensure that all required permits are in place before vegetation removal commences. Furthermore, Tree species and any vegetation within 100m from a water source may not be removed without a permit.

	remove more than 500 cubic meters of forest produce from any piece of land in a period of one year. -Proclamation of protected species of plants and the conditions under which these plants can be disturbed, conserved, or cultivated.	
Atmospheric Pollution Prevention Ordinance 11 of 1976 **Line Ministry/Body:** Ministry of Health and Social Services	This ordinance provides for the prevention of air pollution and is affected by the Health Act 21 of 1988. Under this ordinance, the entire area of Namibia, with the exception of East Caprivi, is proclaimed as a controlled area for the purposes of section 4(1) (a) of the ordinance.	The proposed project and related activities should be undertaken in such a way that they do not pollute or compromise the surrounding air quality. Mitigation measures should be put in place and implemented on site.
Hazardous Substance Ordinance, No. 14 of 1974 **Line Ministry/Body:** Ministry of Safety and Security	The ordinance provides for the control of toxic substances. It covers manufacture, sale, use, disposal and dumping as well as import and export. Although the environmental aspects are not explicitly stated, the ordinance applies to the manufacture, sale, transport, handling, use, and disposal of hazardous substances, as well as their import and export.	The planned Project will involve the handling and storage of hazardous substances such as fuels, reagents, and industrial chemicals. The Proponent shall ensure safe handling, transfer, storage, use, and disposal protocols are developed, implemented, and audited throughout its operations. The Proponent is obliged to ensure that all permits under this Ordinance are obtained prior to Project commencement
Namibian Water Corporation (Act 12 of 1997) Line Ministry/Body: Namibian Water Corporation	The act caters for water rehabilitation of prospecting and mining areas, environmental impact assessments and for minimizing or preventing pollution.	The protection of water resources from over abstraction and pollution should be prioritized throughout the whole lifetime of the project.

Public and Environmental Health Act, 2015 **Line Ministry/Body**: Ministry of Health and Social Services	The act provides a framework for a structured uniform public and environmental health system in Namibia; and to provide for incidental matters.	The project will ensure employees in charge of and working with hazardous substances needs to be aware of the specific hazardous substances in order not to compromise worker and environmental safety.
Labour Act No.11of2007 **Line Ministry/Body**: Ministry of Labour, industrial Relation and employment creation	This act details the occupational health & safety, minimum wages, fundamental rights as well as the basic conditions of employment to be followed.	The proposed project will comply with stringent health and safety policies, including the compulsory use of specific PPE in designated areas to ensure adequate protection against health and safety risks.
The Regional Councils Act (No 22 of 1992): **Line Ministry:** Ministry of Urban and Rural Development (MURD).	This Act makes provision the establishment and functioning of regional councils. In addition to the powers conferred upon a regional council by Article 108 of the Namibian Constitution it shall, among other things, undertake planning functions and establish, manage and control settlement areas. Communal assets of a settlement area shall vest in the regional council who declared the area.	The relevant Regional Councils are IAPs and must be consulted during the Environmental Assessment (EA) process. The project site falls under the Erongo Regional Council; therefore, they should be consulted.
Traditional Authority Act (Act No. 25 of 2000): **Line Ministry:** Ministry of Urban and Rural Development (MURD).	The Act also stipulates that Traditional Authorities (TAs) should ensure that natural resources are used on a sustainable basis that conserves the ecosystem. The implications of this Act are that TAs must be fully involved in the planning of land use and development for their area. It is the responsibility of the TA's customary leadership, the Chiefs, to exercise control on behalf of the state and the residents in their designated area.	The Mining Claims are located in Dâures Constituency, Tsiseb Conservancy; therefore, the relevant traditional authority should be consulted throughout the Project.

Road Traffic and Transport Act, No. 22 of 1999	This Act makes provision for the control of traffic on public roads, the licensing of drivers, the registration and licensing of vehicles, and the control and regulation of road transport users across Namibia's borders; and for matters incidental thereto. Should the Proponent wish to undertake activities involving road transportation or access onto existing roads, the relevant permits will be required.	The Project will involve transportation activities in support of exploration and mining activities. The employees and support business shall adhere to national road regulations on public roads. Mitigation measures provided in the EMP should be adhered to.
Soil Conservation Act (No 76 of 1969)	The Act makes provision for the prevention and control of soil erosion and the protection, improvement and conservation of soil, vegetation and water supply sources and resources, through directives declared by the Minister.	Duty of care must be applied to soil conservation and management measures must be included in the EMP.

2.2 National policies and plans

Table 4: National polices and plans applicable to the proposed Project.

Policy or plan	Description	Relevance to the Project
Minerals Policy	The Minerals Policy was adopted in 2002 and sets guiding principles and direction for the development of the Namibian mining sector, while communicating the values of the Namibian people. The Policy strives to create an enabling environment for local and foreign investments in the mining sector and seeks to maximize the benefits for the Namibian people from the mining sector, while encouraging local participation.	The Project will comply with the general guidelines of the Policy through the adoption of various legal mechanisms to manage all aspects of the environment effectively and sustainably from the start.
Vision 2030	Namibia's Vision 2030 was developed as a long-term planning framework for the country. Vision 2030 states that the overall goal is to improve the quality of life of the Namibian people aligned with the developed world.	The proposed Project shall aim to meet the objectives of Vision 2030 and shall contribute to the overall development of the country through continued employment opportunities and ongoing contributions to the gross domestic product (GDP).
Fifth National Development Plan (NDP5)	The NDP5 is the fifth in a series of seven five-year national development plans that outline the objectives and aspiration of Namibia's long-term vision. The NDP5 pillars are economic progression, social transformation, environmental sustainability, and good governance.	The planned Project supports meeting the objectives of the NDP5 through creating opportunities for continued employment.
The Harambee Prosperity Plan ii (2021 – 2025)	Second Pillar: Economic advancement – ensuring increasing productivity of priority key sectors (including mining) and the development of additional engines of growth, such as new employment opportunities.	The Project will contribute to the continued advancement of the mining industry and provide additional employment generation within the regional and national landscape.

Table 5: Specific permits and licence requirements for the proposed Project under the various applicable Acts

Permit or Licence	Act/Regulation	Related activities requiring permits	Relevant authority
Environmental clearance certificate	Environmental Management Act, No. 7 of 2007.	Required for all listed activities shown in Table 2.	Ministry of Environment, Forestry and Tourism (MEFT).
Mining licence	Section 90 (2) (A) of the Minerals Act, No. 33 of 1992.	Written permission from the mining commissioner.	Ministry of Mines and Energy (MME)
Surface rights agreements (mine, infrastructure corridors)	Section 52(1)(A) of the Minerals Act, No. 33 of 1992.	Also required in the permit application for accessory works areas.	Ministry of Mines and Energy (MME).
Permit for boreholes (exploration and water boreholes)	A permit is issued under the Water Act, No. 54 Of 1956 (enforced).	Required before the drilling of boreholes for exploration and the abstraction of water.	Ministry of Agriculture, Water and Land Reform (MAWLR).
Tailings waste disposal permit	A permit is issued under the Water Act, No. 54 of 1956 (enforced).	Required for the disposal of tailings.	Ministry of Agriculture, Water and Land Reform (MAWLR).
Wastewater discharge permit	A permit is issued under the Water Act, No. 54 Of 1956 (enforced) but form types that fall under the Water Act, No. 24 of 2004 are used.	Required for discharge of sewage and/or excess industrial or mine wastewater.	Ministry of Agriculture, Water and Land Reform (MAWLR).
Permit for the clearing of land	The Forest Act, 2001 (Act No. 12 of 2001)	This Act governs the removal of vegetation within 100 m of a water course, or the removal of any protected plant species.	Ministry of Agriculture, Water and Land Reform (MAWLR).
Permit for the destruction, protection or relocation of heritage objects and artefacts	The Heritage Act, No. 27 of 2004.	This Act relates to interference with heritage artefacts during the Project life. Heritage sites could potentially be located within the proposed mining licence footprint.	National Heritage Council (NHC).

2.3 Applicable International Legislation and Principles

The international policies, principles, standards, treaties, and conventions applicable to the project are as listed below:

United Nations Convention to Combat Desertification

Addresses land degradation in arid regions with the purpose to contribute to the conservation and sustainable use of biodiversity and the mitigation of climate change.

The project activities should not be such that they contribute to desertification.

Convention on Biological Diversity 1992

- Regulates biological resources for the conservation of biological diversity within and outside protected areas, with a view to ensuring their conservation and sustainable use.
- Promote the protection of ecosystems, natural habitats, and the maintenance of viable populations of species in natural surroundings.
- Removal of vegetation cover and destruction of natural habitats should be avoided and where not possible minimized.

Stockholm Declaration on the Human Environment, Stockholm (1972)

- Recognizes the need for: “a common outlook and common principles to inspire and guide the people of the world in the preservation and enhancement of the human environment.
- Protection of natural resources and prevention of any form of pollution.

The polluter pays principle

The polluter Pays Principle ensures that the proponent takes responsibility of their actions. Hence, in case of pollution, the proponent takes responsibility of their actions and clean-up costs.

Precautionary principle

The Precautionary Principle is worldwide accepted when there is a lack of sufficient knowledge and information about proposed development possible threats to the environment. Hence if the anticipated impacts are greater, and then precautionary approach is applied.

3. Project Description

3.1 Project need and desirability

Exploration forms part of the backbone of the mining industry as it is the only process through which the mineral potential of a given area can be realized and it's through exploration activities that the much sought-after ore deposits of economic potential can be discovered. In the event that the exploration project is successful, and mineral resource with commercially viable mineral concentrations can be defined, exploration operations can contribute greatly to socio-economic development of the Region. A mining project which is the end result of the proposed exploration project may assist in helping Namibia attain some of the goals set out in National Development Plans such as the Fifth National Development Plan (NDP5) and the Harambee Prosperity Plan (HPP).

Namibia's mining sector has been an important contributor to the country's GDP for many years. According to the Namibia Statistics agency, mining contributed about 12.5% to the Namibia's GDP in 2020. The mining, industry is the third largest contributor to the country's economy after the services and agricultural sector. Mineral exploration and mining activities can generate significant economic benefits for a country. These include revenues from royalties, taxes and fees paid by mining companies, as well as creation of jobs and the simulation of local businesses. Mining can provide social benefits such as improved access to education and healthcare facilities, as well as the development of community infrastructure and services.

3.2 Project alternatives

One of the objectives of an EIA is to investigate alternatives to the proposed project. Alternatives should include consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. The no-go alternative must also in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed

3.2.1 Project location alternatives

The purpose of mineral exploration/ prospecting is the discovery and acquisition of new mineral deposit amenable to economic extractive operations now or in future. A mineral deposit is any occurrence of a valuable commodity or mineral that is of sufficient size and grade (concentration) that has potential for economic development under past, present or future favorable conditions. Several economic deposits are known to exist in various locations of Namibia, most of which have been discovered by various exploration companies and researchers throughout the years. Prospecting/exploration location is dependent on the geological setting the economic geology and the exploration and mining history of the project area. The general principle of mineral exploration works by extracting pieces of geological information from several places, and extrapolating this over the larger area to develop a geological picture. Prospecting activities usually begin in the office, where all existing data on the bedrock and its chemical and physical properties are reviewed to determine whether the area is favorable to certain types of mineralization and ore.

Whenever a proponent is looking for a specific mineral commodity, they search for rock types that are favorable to such deposits since different rock types concentrate different mineral commodities. In this case, the proponent is interested in base & rare metals, industrial minerals and semi-precious stones. The target rock units are pegmatites of the Cape-Cross-Uis pegmatite belt well known to host minerals of economic value such as lithium, tin, tantalum, tungsten and REE. There are no alternate sites under consideration for exploration activities, and mining will only start if it is clear that the mineral deposits are both proven to be available and economically viable.

3.3 No-Go Alternatives

Comparative analysis of this option necessitates a side-by-side comparison of the alternatives of moving forward with the proposed project and not moving forward with it. The environmental benefits will include no negative environmental impact on the receiving environment. There won't be any adverse effects on the environment in the receiving area as part of the environmental advantages. It is crucial to realize that even if the planned project is not implemented, where the likelihood of adverse environmental effects is minimal and localized, current and other land uses, such as agriculture, would still have some negative impacts on the receiving environment. Even in the absence of the proposed exploration and mining activities, other present and future land uses may still have negative environmental impacts.

No-go alternative will mean that the current land activities such as farming and important vegetation species will not be disturbed, that is, there will not be disturbance of the flora and fauna. No-go alternative will result in the non-mining of minerals and bring beneficiations to the receiving environment. However, the no-go alternative is not considered since it will lead to negative socio-economic impacts.

Furthermore, proceeding with the proposed project will result in proponent being able to mine the ore body, and in so doing:

- Provide employment opportunities for Namibians;
- Contribute to Namibia's economy and GDP;
- Provide an additional tax base for government revenue, and
- Enable the proponent to generate an operating income and earn revenue.

3.4 Infrastructure and Services

3.4.1 Site access/roads

The Mining Claims (MCs 74090 to 74098) are situated 43 km south west of Uis settlement accessible via C35 and D2342 gravel roads in Dâures Constituency, Erongo Region, western central Namibia. The project area is on state territory that was designated as the Tsiseb (Hada-Huigu) conservancy by the Ministry of Environment, Forestry, and Tourism in 2001, sandwiched by the Dorob national park on the left and #Gaingu Conservancy on the right. Two gravel roads C35 and D2342 are the primary access points to the Project from Uis settlement, the roads are in reasonably good condition because local road authorities maintain them frequently. The area under exploration is accessible by 4x4 /2x2 pick-up vehicle by the existing tracks. To guarantee minimal effects on the receiving environment, the sensitive sector of the project area will only be accessible by foot. Access agreements would need to be established and signed between the project proponent and the responsible landowner(s) prior to the project's start. Prior to the start of drilling activities, the location of new access routes to the drill sites should be determined, decided and demarcated upon with the cooperation of all key stakeholders, including the Traditional Authority, Conservancy, and other Operators or support institutions, such as NGOs or CSOs.

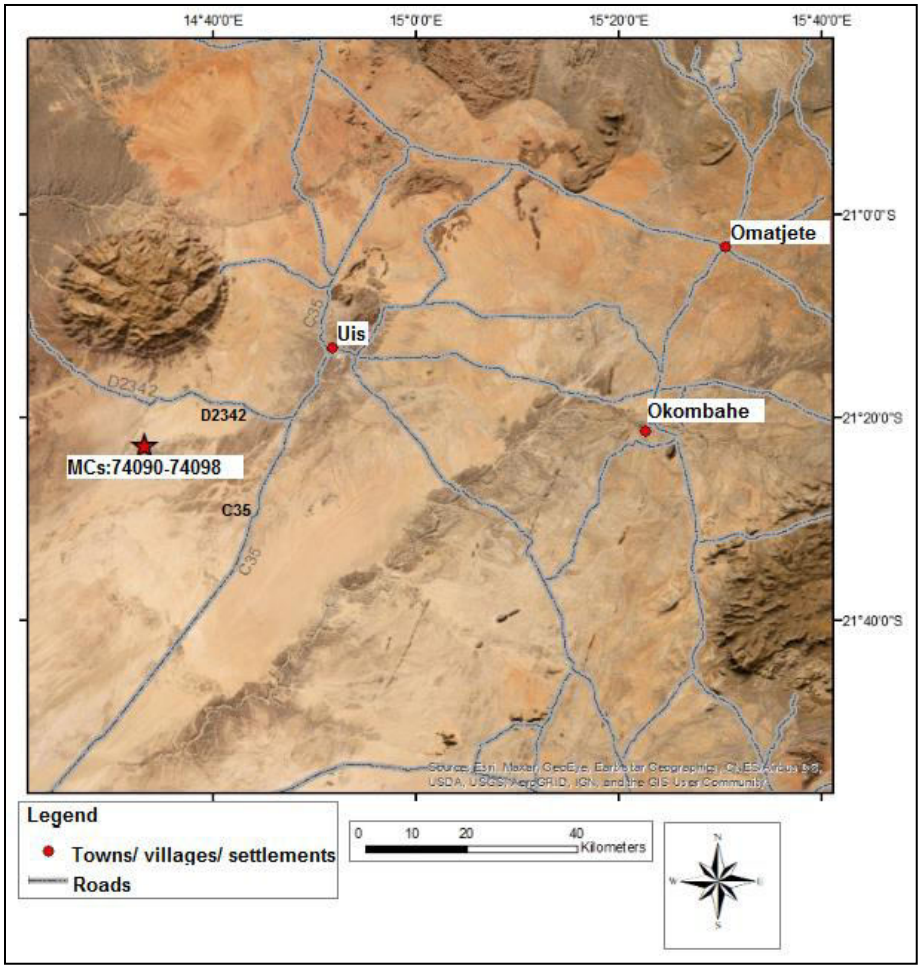

Fig. 5. Location of Mining Claims (MCs: 74090 to 74098), accessible via gravel roads C35 and D2342, 43 km south west of Uis settlement.

3.4.2 Water supply

Water will be required mainly for domestic and exploration activities. Water supply for both domestic consumption and exploration activities will be sourced from Uis using a water bowser truck which will take about 4000L to 5 000L of water to site on a weekly basis during initial exploration. Exploration purposes water is required for diamond core drilling and dust suppression. Drilling works water requirement will potentially be around 1000 to 2000 litres (L) per day. After exploration transitions to mining, the monthly water need is anticipated to increase to between 20,000 and 30, 000 liters. In order to lessen the strain on the water supply source, some of the water used during drilling and mining will be recycled and used for the same purpose. At least one

(1) 5 000L storage water tank will be erected close to the exploration camp for operation water supply, and will be re-filled as when the need arises.

Fig.6. Water tankers and bowsers to be used for transporting water from Uis.

During mining operation phase, water will be required for drilling, crushing, mineral beneficiation and for dust suppression. Given the low groundwater potential in the project area, the aquifers may not be able to sustainably supply the project. However, about 12 km South East of the project area, there is a porous aquifer of moderate production from which groundwater can be abstracted. Boreholes can be drilled with permission from the Department of Water Affairs in the Ministry of Agriculture, Water and Land Reform (MAWLR) as well as from the responsible landowner(s). Adoption measures will be adopted in order for processing water to be recycled back into the system.

3.4.2 Power and fuel supply

Basic energy supply requirement supply will be provided by generators and solar as may be required for exploration purposes as well as domestic purposes by the exploration team. All the earth moving equipment, including the drill rig will be powered by a 330kw diesel engine generator on site and will be fueled by diesel stored on site in a 1000 to 2000L trailer-mounted tank. Moreover, drill rigs will either be refueled with jerry cans or directly from the fuel bowser(s). Domestic power supply for lights will come from photovoltaic rooftop solar panels. Furthermore,

the proponent will provide fuel to be used for food preparation by the site workers and no firewood will be collected from the Conservancy. Once the power demand increases beyond generators and solar, then Erongo RED will become the main power supplier for the mining project. As of December 2013, Uis settlement was connected to the Namibia's national power transmission grid. Erongo Regional Electricity Distributer Company (Pty) Ltd (Erongo RED), a NamPower legal entity, is tasked with the supply and distribution of electricity within the Dâures constituency where the project is located.

3.4.3Accommodation, transportation and infrastructure

Project staff will be accommodated in Uis, staff transport arrangements from Uis to exploration sites will be provided by the proponent. Where practical and possible, it is strictly recommended. Another available option would be to setting up accommodation camp with ablution facility and toilets on site. The tented campsite will be set up in consultation with the Conservancy Management Committee and most preferably within an appropriately zonation area. Furthermore, project activities will only take place during the day time.

During the whole prospecting period, it is anticipated that about 10 to 15 persons will be employed; furthermore, temporary employment will potentially be available for Geologists, geo-technicians and semi/unskilled personnel for the purpose of geological mapping and geochemical surveys. Drilling will be executed by an appointed Qualified and registered Namibian drilling contractor(s), and it is expected that they will have their own workforce (drilling crew). A drilling team will consist of a drill operator and usually three to four support staff, including drivers, one or two geologists, geo-technicians and 2 technical assistants and laborers. All employees will undergo a safety induction, first aid training course and wildlife awareness program. Furthermore, the Labour Act of 2007 will always be adhered to.

3.4.4 Firefighting and safety services

Portable fire-extinguishers will be fitted on all vehicles as well as availed at the mobile containers / campsite and working sites where possible. Provision will be made for two-way radios to enable the drill rig operators and the onsite staff to communicate effectively.

3.4.5 Waste management

During the exploration activities, domestic waste (non-hazardous) will be produced in small volumes. Domestic waste will be stored in a manner that there can be no contamination to the environment and shall be disposed of correctly. Therefore, sufficient waste bins (containers) will be made available at both exploration sites and campsite for waste storage. The bins will be emptied into the main onsite container for disposal at the nearest Municipality solid waste site, it should however be noted that a waste disposal agreement between the proponent and the Municipality has to be reached before.

All vehicles, machinery and fuel consuming equipment will be provided with drip trays to capture potential fuel spills and waste oils. Potential hydrocarbon spills from vehicles, heavy equipment and drilling equipment might lead to soil contamination and needs to be treated as a hazardous waste if not bio-remediated. Hazardous waste will be carefully stored in a standardized container until such a time that it can be disposed of at the nearest approved hazardous waste management facility or removal by an external hazardous handling & management contractor.

3.4.6 Sanitation and ablution facilities

Existing ablution facilities will be used by personnel if available and with consent from the landowner. Considering the project location, it is recommended that portable chemical toilet system and associated ablution facilities will be provided for use by personnel. Due to health and safety concerns, personnel may not relieve themselves in the surrounding bush. Wastewater will be transported offsite to the nearest treatment facility either by the proponent or a designated/appointed external waste management contractor.

Fig. 7. Toilet facilities similar to these to be made available on site.

3.4.7 Materials, Equipment and Vehicles

The required input supplies required for the exploration and mining project in terms of vehicles, machines and equipment, these include:

Exploration phase

- **Geological data and maps**

Geological maps, aerial photographs and geological reports are essential for planning and conducting mineral exploration project. They provide information about geological structures, rock types and mineral potential of the area.

- **Field equipment**

Field equipment is necessary for carrying out field work, including geological mapping, sampling, and geophysical survey. Rock hammers, compasses, GPS devices, measuring instruments, and sample bags are a few examples of field tools.

- **Sampling equipment**

Sampling equipment is used to collect rock, soil and other materials for analysis. The tools used for sampling include soil samplers, hand augers, and core drills.

• **Laboratory equipment**

Samples obtained during the exploration project are analyzed using laboratory equipment such as: X-ray fluorescence (XRF) spectrometers, atomic absorption spectrometers (AAS) and scanning electron microscopes (SEM). On this particular project, portable X-ray fluorescence (XRF) spectrometers will be employed.

• **Chemicals and reagents**

Chemicals and reagents are needed for sample preparation and analysis in the laboratory. Examples include acids, bases, solvents and calibration standards.

• **Safety equipment**

Safety equipment is essential for protecting and the environment during the exploration and mining project. Personal protective equipment (PEE), first aid kits, fire extinguishers, and spill containment kits are a few examples of safety equipment that will be used.

• **Drilling equipment**

Drill rigs will be kept on site, reverse circulation drilling and diamond core drilling are two drilling techniques used in mineral exploration. Drilling is used to obtain detailed information about rock types, mineral content, rock fabric and the relationship between the rock layers close to the surface and at depth. Drilling fluids and biodegradable drilling mud additives will be stored in manufacturers approved containers.

• **Geophysical equipment**

Geophysical equipment is used to detect and map subsurface features such as, mineral deposits using physical properties of the earth. Examples of geophysical equipment include ground-penetrating radar (GPR), magnetometers and induced polarization (IP) systems.

• **Transportation**

Transportation is necessary is necessary for moving personnel to and from project site. In addition to 4X4 pickup trucks being used to move around the project site, heavy trucks will be employed to transport equipment.

Resources and machinery required for the small-scale open-pit mining project

- **Excavators**

These are heavy duty machines that are used to dig and remove the overburden such as soil, rock or other material covering the mineral deposit in open pit mining. Diesel engines will be used to power the excavators.

- **Haul trucks**

Haul trucks are used to convey the ore and waste material from the pit to the processing facility or waste disposal after the overburden has been removed. Typically, haul trucks are enormous vehicles with payload capacities of up to 400 tons or more.

- **Bulldozers**

Bull dozers are used in open pit mining to push and move material around the site. They are used to build roads, level ground and clear the way for other mining equipment.

- **Wheel loaders**

Wheel loaders are used to load the ore and waste material into haul trucks. They are also used to move material around the site and perform other tasks such as stockpiling and feeding the processing plant.

- **Drills**

Drills are used to create blast holes in the rock or other material in order to facilitate blasting. In open pit mining, many drill types, such as rotary drills, hydraulic drills, and pneumatic drills, are employed.

- **Blasting equipment**

Blasting equipment is used to break up the rock or other material in order to extract the ore. Explosives are used to create controlled blasts that break up the material to make removal easier.

- **Crushing equipment**

Crushing equipment is used to crush ore into smaller pieces that can be transported more easily. Jaw, cone, and impact crushers are just a few of the various types and configurations of crushers that are available.

- **Conveyor systems**

Conveyor systems are used to stop transport the ore and waste material from the pit to the processing plant or waste dump. They are also used to transport material within the processing plant.

- **Graders**

After the overburden has been removed, graders are used to level and smooth the ground. They are also used to maintain the haul roads and other infrastructure around the site.

- **Water trucks**

In order to suppress dust and manage erosion, water trucks are employed to spray water on the haul roads and adjacent areas.

- **Supporting equipment**

Other essential project equipment includes: water storage tanks to cart water to site for exploration and mining works, diesel generators for power supply, two-way radios for communication on site, diesel bowser / tank (bunded) of about 20 000 to 30 000 liters, camping tents, prefabricated office structures, a shade structure for close-by work areas, two-way radios for communication.

These will be kept at a demarcated storage area on site that will be established within the Mining Claims. Temporary storage areas for exploration equipment, material and machines will be erected at selected Project sites. At the chosen storage location, security will be provided around-the-clock to prevent theft or vandalism of the project's vehicles, machinery, and equipment.

3.5 Potential Land Use Conflicts

The proponent provisionally acquired mineral rights on Mining Claims (MCs: 74090 to 74098), for base & rare metals, industrial minerals and semi- precious stones from the Ministry of Mines and Energy (MME). Surface rights in the Project area belong to the Government of Namibia and the proponent does not own or hold any title to the surface rights of any land in the area. Therefore, to gain full access to the project area, it is strictly recommended that the proponent negotiates and signs a Surface Use Agreement detailing aspects of conduct and benefit distribution with all key stakeholder i.e. Traditional Authority, Conservancy and other Operators or support institutions e.g. NGOs / CSOs). There are no other significant royalties, payments or agreements or risks that may affect access, title, or the right or ability to execute the proposed mining and exploration work on the project.

The Brandberg Mountain, which is recognized for its concentration of prehistoric rock art, including carvings and paintings, is about 40 kilometers from the project area. One of these, known as the White Lady, is especially famous. Tourists that visit the area frequently overnight in Uis and its surroundings, providing important support to the local economy. Considering the current land use practices (agriculture, mining and tourism) it's likely that the exploration project in the general area can still co-exist with the existing and potential future land use options of the general area. However, much more detail assessment of any likely visual and other socioeconomic impacts will need to be undertaken as part of the EIA.

4. Description of the proposed project

Description of activities to be undertaken

Mineral exploration/prospecting

Mineral exploration is a complete sequence of activities. It ranges between searching for a new mineral prospect (reconnaissance) and evaluation of the property for economic mining (feasibility study). It also includes augmentation of additional ore reserves and resources in the mine and total mining district. Mineral rights valid under Mining Claims (MCs: 74090 to 74098), for base & rare metals, industrial minerals and semi-precious stones. The proposed activity will entail both non-invasive and invasive exploration methods as described below. Non-invasive exploration methods usually include remote sensing, geological field mapping, ground geophysical survey, surface sampling, etc. whereas invasive exploration methods include more destructive methods of exploration such as reverse circulation or diamond drilling and pitting/trenching. Non-invasive exploration activities will be undertaken first in order to define the need for more invasive activities. Should the results from the non-invasive activities be positive the detailed site-specific drilling, trenching, and sampling will be undertaken. Project exploration stages are described below.

(a) Prospecting stage

The objective of prospecting is to identify a deposit for further exploration. Estimates of quantities and grades are inferred, based on interpretation of geological, geophysical and geochemical results. This stage of exploration may include geological mapping, sampling, pitting, trenching, drilling, Petrological and Mineralogical Studies, sample analysis and reserve estimation.

(b) General Exploration stage

Based on findings and recommendations of prospecting and/or preliminary socio-economic and environmental assessment, general exploration may undertake. The objective of general exploration is to establish the main geological features of a deposit, giving a reasonable indication of continuity and providing initial estimate of extent, shape, structure, and grade. The degree of accuracy should be sufficient for deciding whether a detailed exploration is warranted. Estimates of quantities and grades are indicated, based on interpretation of geological, geophysical and geochemical results.

(c) Detailed exploration stage

Detailed exploration involves clear three-dimensional delineation of a known deposit extent, shape, structure, and other characteristics of the deposit with high degree of accuracy. A decision whether to conduct a feasibility study can be made from information provided by detailed exploration. Estimates of quantities and grades are measured, based on interpretation of geological, geophysical and geochemical results. The work items and standards for detailed exploration as follows:

Exploration program

Exploration program activities will include:

- Geological mapping - Involves visual assessment of outcropping rocks: No environmental impact, no activity footprint to be left behind.
- Ground geophysical surveys–Handheld geophysical equipment or drones are utilized to collect data from subsurface rocks. This is achieved through traversing lithological units of interest: this process does not leave behind any environmental impact and activity footprint.

- Geochemical sampling –A small holes of roughly a few centimeters deep are dug from which sample/s are collected and the hole is then covered after sampling leaving no activity footprint left behind.
- Trenching–A trench is a ground excavation that generally deeper than its width and narrower than its length. Trenching is mainly for purposes of the orientation of the targeted lithology and mineralization as well as sampling. Impact is localized and the trenches are covered after sampling leaving to no activity footprint.
- Pitting - excavation or diggings of areas are done to obtain a representative bulk sample of the mineralization as well as getting a 3D view of the mineralization. Impact is also localized and the trenches are covered after sampling leaving to no activity foot print.
- RC and diamond drilling - Holes are drilled and drill samples collected will be used for geotechnical analysis and analysis of elements and minerals. Holes are capped after drilling and the drilling site for each hole is localized and rehabilitated after drilling.

Exploration activities will be performed in four phases within the first six (6) months of the validity of the Mining Claims. The initial stages of the exploration program to be implemented by the proponent as assessed in the EIA report will involve:

4.1 Non-invasive exploration methods

4.1.1 Desktop studies

- Evaluation of satellite, topographic, land tenure, accessibility, supporting infrastructures.
- Purchase and analysis of existing government high resolution magnetics and radiometric geophysical as well as government aerial hyper spectral data.
- Data interpretation and delineating of potential targets for field- based activities.
- Purchase and analysis of any geological, geochemical data as well as remote sensing mapping and data analysis.

- Thematic mapping shall be done to delineate various land use zones and patterns to help improve the multiple land use practices and promote coexistence for all the possible land use options on the farms

Initial regional field-based activities

- Regional geochemical sampling and regional geological mapping aimed at identifying possible targeted based on the results on results of the initial desktop studies.
- Laboratory analysis of the samples collected and interpretation of the results and delineating of potential targets for further detailed site-specific exploration activities.

Localized/ site specific field-based activities

- Once more information on target areas is obtained, the proponent may undertake frequent verification/ mapping/ sampling visits/ trenching/ drilling, but this will only be over specific areas of interest and not the entire project area.
- The only parts of the Mining Claims (MCs: 74090 to 74098), to be physically visited for exploration purposes in most cases are areas of interest and these tends to be a localized involving only small areas where the mineralization occurs.
- Field verifications of targets will only be done with the permission of the landowner, and they will have knowledge of the exploration activities in the area/farm.
- Local geochemical sampling with the aim of verifying the prospectively of the targets delineated during regional field-based activities.
- Local geological mapping aimed at identifying possible targeted based on the results of the desktop studies, regional geological mapping and analysis undertaken.
- Ground geophysical survey.
- Trenching, drilling, pitting, sampling.

- Laboratory analysis of the samples collected and interpretation of the results and delineation of potential targets.

Prefeasibility and feasibility Studies

The project may and can only advance in to mining if resources of economic potential are discovered. If the proposed exploration activities lead to a discovery of a mineral resource of economic potential, prefeasibility and feasibility studies will then be carried out over the local area hosting the mineralization. During the prefeasibility and feasibility studies, a detailed site-specific Environmental Impact Assessment (EIA) study will be carried out and an Environmental Management Plan (EMP) report will be prepared and these will be done in consultation with all interested and affected parties including the landowners. The process will involve the following:

- Detailed land surveys and detailed geological mapping.
- Detailed drilling and bulk sampling and testing for ore reserve calculations.
- Geotechnical studies for mine design.
- Mine planning and designs inclusive of all supporting infrastructures (water, power and access) and test mining activities.
- EIA and EMP to support the ECC for mining operations. Preparation of feasibility report and application

Field exploration activities

The proposed exploration activities will include: geophysical surveys, geochemical survey, geological mapping, trenching, drilling and geochemical sampling as well as laboratory analysis aimed discovering mineral resources of economic interest. The proponent plans to implement these activities as soon as the clearance certificate has been issued. Once the deposit proves to be economically feasible, conventional small-scale open pit mine development will proceed.

4.1 Non-invasive exploration methods

4.1.1 Geological mapping

Geological mapping involves surficial traversing of lithological units to gather information on type outcropping lithological units, their orientations, taking coordinates of their contacts as recording of any feasible mineralization for production of localized maps. This process if non-invasive environmental wise and leaves no footprint behind.

4.1.2 Geophysical surveys

Geophysical surveys are by nature non-invasive to the environment and are primarily conducted to give an overview or a geological picture of the subsurface aimed at identifying underground areas that have mineralization potential in a given area. Various sensors are normally used during the surveys that may include radar, resistivity, magnetic, electromagnetic, etc. These surveys will be conducted in search of mainly metals and some industrial minerals using UAVs, air crafts or by means of ground surveys. The ground geophysical surveys are expected to be conducted over localized areas where potential is known to exist. The following sensors are likely to be utilized:

- Radiometric
- Resistivity
- Ground magnetics are conducted using a magnetometer
- Gravity surveys are conducted with the use of a relative gravimeter
- Electro-magnetic techniques

4.2 Invasive exploration methods

4.2.1 Geo-chemical sampling

Geochemical sampling involves the analysis of geological samples at an analytical laboratory. Samples taken during drilling and surveying will be sent away for analysis, specifically to determine the mineral composition and the level of base metals, namely copper and iron, within

the samples. Samples are taken during drilling by either the geologists or geological assistants and can be in either rock, soil or drill core form.

4.2.2. Pitting, trenching and excavations

Pitting and trenching involve the mechanical or manual digging of small-scale pits and trenches in order to provide a soil profile. With regard to the activities within Mining Claims (MCs: 74090 to 74098), pitting will only occur should results come back positive for mineralization. It is anticipated that the average pit may roughly be 5m x 5m and 3m deep. Trenching is similar to pitting, except a trench will show a latitudinal profile across a longer horizontal access, it is designed to follow an ore body across the landscape. The expected average size of a trench maybe up to 500m x 1m and 2m deep. Excavations will involve opening up some parts of the mineral unit to get a closer look of the mineralization over a wide but localized area, which maybe roughly 2m by 2m.

Fig. 8. Shows a schematic representation of pitting sites that were discovered on one EPL near the mining claims.

4.2.3 Drilling

Exploration drilling is the process which involves collection of subsurface rock samples from drill holes in areas suspected to have potential for mineralization. There are various drilling methods available, for this project the following methods will be utilized: reverse circulation drilling for metal mineralization search and diamond-core drilling for geotechnical assessments of the mineral. The initial total number of meters to be drilled over the project area will depend on the results of the initial exploration activities. Once sampling results are obtained, the areas of potential are narrowed down and closer spaced holes will be drilled in order to delineate ore-body. A typical drilling area will consist of a drill-rig, an area where the drill core and geological samples can be temporarily stored and a temporary storage area for drill equipment, fuel and lubricants. This area will be cordoned off and off limits to those not partaking in the exploration program.

Reverse Circulation (RC) drilling:

The drilling mechanism is a pneumatic reciprocating piston known as a "hammer" driving a tungsten-steel drill bit. RC drilling utilizes much larger rigs and machinery and depths of up to 500m are routinely achieved. RC drilling ideally produces dry rock chips, as large air compressors dry the rock out ahead of the advancing drill bit.

Diamond-core Drilling:

Diamond core drilling uses an annular diamond-impregnated drill bit attached to the end of hollow drill rods to cut a cylindrical core of solid rock. Holes within the bit allow water to be delivered to the cutting face. This provides three essential functions — lubrication, cooling, and removal of drill cuttings from the hole. Diamond drilling is much slower than reverse circulation (RC) drilling due to the hardness of the ground being drilled. Drilling to a depth 600 meters is common and at these depths, ground is mainly hard rock.

Diamond rigs can also be part of a multi-combination rig. Multi-combination rigs are a dual setup

rig capable of operating in either a reverse circulation (RC) and diamond drilling role (though not at the same time). This is a common scenario where exploration drilling is being performed in a very isolated location. The rig is first set up to drill as an RC rig and once the desired meters are drilled, the rig is set up for diamond drilling. This way the deeper meters of the hole can be drilled without moving the rig and waiting for a diamond rig to set up on the pad.

Fig. 9. RC and diamond drilling rigs at work also shown is drill core (activities are very localized with limited footprint.

4.3 Mining process and methodology

The targeted lithium-cesium-tantalum (LTC) pegmatites extends close to the surface, therefore it is assumed that the mining method to be implemented for this project is conventional open pit mining, with 10 m bench heights for both mineralized material (pegmatite) and waste (gangue). Open pit mining is defined as the method of extracting near surface ore deposit using one or more horizontal benches to extract the ore while dumping ore and tailings at a specific disposal site outside the final pit boundary. Mining will be done by conventional trucks and excavators. Drilling and blasting will be required to break in-situ rock, then transportation of ore and waste rocks by a fleet of mobile equipments. Run of mine (ROM) mineralized, material will be will be loaded onto a dump truck using an excavator and transported to the plant for concentration. Waste material will be backfilled onto the pit footfall using excavators. The planned set-up of the mine production target is not yet planned.

4.3.1 Ripping and dozing

During the mine construction phase, earth moving equipment arrives on site to clear ground for the various infrastructure required for the mine. Early mining will include the removal of overburden to expose the ore beneath the cover. Bulldozers, wheel dozers and motor graders are the most common equipment used where common equipment used in which material transport distance is short and can be pushed by a blade. The dozer has a large blade capacity and it is designed specifically for bulk material excavation, whereas the grader is used to create flat surface during the grading process.

4.3.2 Drilling and blasting

This process starts with digging blast holes with drill machine followed by blasting with explosives. Drilling and blasting is carried in order to fracture the rock into loadable size. Staggered blast holes are the most preferred pattern as it gives the optimum distribution of explosive energy in the rock.

5. Description of the receiving environment

This chapter provides a description of the receiving environment within the study area. Three components to the environment are: Physical Environment; Biological Environment; and Socio-Economic Environment. Baseline environmental conditions of the project are described as the current conditions of the proposed site before any of the proposed activities take place. This information is necessary for the competent authority, the proponent and the interested parties so that they can make informed decisions based on the current conditions of the proposed site.

The data source used to compile this chapter ranges from the review of existing published academic papers, old project reports and books containing the information on the area. The information sourced the desktop studies together with the site visits to the proposed project area, assessments and public engagements.

5.1 Socio-Economic Environment

According to the 2011 Namibia Population and Housing Census results, Erongo Region had a population of 150,809 people of which 70,986 were women and 79,823 were men (Namibia Statistics Agency, 2011. Erongo Region covers an area of 63,586 km^2, which comprises 7.7 per cent of Namibia's total area of about 823,680 km^2. The region's population is growing at an annual rate of 3.4 percent. Most of the population lived in urban areas (87%) compared to only 13 percent in rural areas. This is due to a large proportion of migration from rural to urban areas in search of job opportunities in towns, particularly among young adults. The main languages spoken at home in the Erongo Region are the Oshiwambo language at 39% Afrikaans language at 20%; Nama/Damara at 19% and Otjiherero language at 10%. Erongo Region comprises of (7) constituencies, namely: Arandis, Dâures, Omaruru, Karibib, Swakopmund, Walvis Bay Rural and Walvis Bay Urban. The project area falls within Dâures Constituency. The total area of Dâures Constituency covers 17 786.6 km² amounting to 28 percent of the total area of Erongo Region. Dâures Constituency is among the least densely populated area in Erongo Region with a population

density of approximately 0.6 persons per $km^{2,}$ mostly inhabited by Damara and Herero speaking inhabitants. Dâures Constituency population statistics is displayed below.

Table 6: Statistics of Dâures Constituency.

Dâures constituency statistics	
Population	11,350
Male	6, 041
Female	5, 309
Private households	2, 911
Population under 5 years	15 %
Population aged 5 to 14 years	23 %
Population aged 15 to 59	51 %
Population aged 60+ years	11 %
Female: male ratio	100: 114
Female head households	40 %
Male head households	60 %
People with disability	4 %
Employed population	56 %
Unemployed population	44 %
Retired population	63 %
Literacy rate 15 + years, %	82 %
Household income from pension	24 %
Household income from business and non-farming activities	9 %
Household income from farming	24 %
Household income from cash remittance	11 %
Household income from wages and salaries	28 %

5.1.1 Local Economy and Infrastructure

The town of Uis is located at the foot of Brandberg, Namibia's tallest mountain. A small supermarket, guesthouses, a rest camp, a bakery, a gas station, and a few other miniature stores can be found in the settlement. There are two schools in Uis, Brandberg Primary School and Petrus Ganeb Secondary School, with a combined student body of 300. Because Petrus Ganeb SS was built before Namibia gained its independence, its amenities are quite outdated old. Tin mining operations at the Uis mine are another notable feature of the Uis area. As of 2019, the constituency's unemployment rate is 33.40 percent, and youth unemployment rate is 46.10 percent. The project will support both the district's need for new jobs and the development of the Erongo

region's economy. Throughout the course of the project, numerous employment opportunities will be provided to locals.

5.1.2 Current Land Uses

The mining claims are situated in a subsistence agricultural region dominated by small stock farming and to lesser extend small scale mining. Small scale livestock farming (cattle, goat and sheep) is the only and major agricultural activities, because the landscape is unsuitable for crop farming due to its aridity and poor soils. Even livestock farming is getting increasingly precarious due to recurrent protracted draughts. Moreover, the mining of semi-precious stones by small scale miners is an important source of income to support livelihoods in rural communities.

The project area is part of the Tsiseb conservancy, approximately 30 km south of the Brandberg Mountain. Brandberg is known for its concentration of prehistoric rock art, including carvings and paintings. One of these, known as the White Lady, is especially famous for tourist attraction. Tourists that visit the area frequently overnight in Uis and its surroundings. The sale of handy crafts and employment at tourism facilities, provide important support to the local economy.
Considering the current land use practices (agriculture, mining and tourism) it's likely that the exploration project in the general area can still co-exist with the existing and potential future land use options of the general area. However, much more detail assessment of any likely visual and other socioeconomic impacts will need to be undertaken as part of the EIA.

5.2 Climatic physiography

Regionally, according to the Köppen climate classification the project site lies within the transition zone between hot desert climate (BWh) and hot semi-arid climates (BSh) of the Okombahe (/AGomeb) area of the Dâures constituency. Due to the Brandberg's close proximity to the Atlantic Ocean, plants can access local precipitation in the form of rain and mist. Another significant source of water is run-off, which gathers in fissures or sand areas beneath granite plates. Desert Hot desert climates are often characterized by low, variable rainfall, high evapotranspiration and a virtual

absence of effective precipitation. Understanding the climatic conditions helps to determine the appropriate times to conduct exploration activities.

5.2.1 Rainfall

The project area is in a dry region of the country, where there is an annual rainfall average of only 150 millimeters. The rainy season in the Uis settlement is typically from December to March, with March having an average of about 20 days with the most rain and February having an average of approximately 80 mm of precipitation. Every year, the period from April to October is predicted to have little to no rainfall.

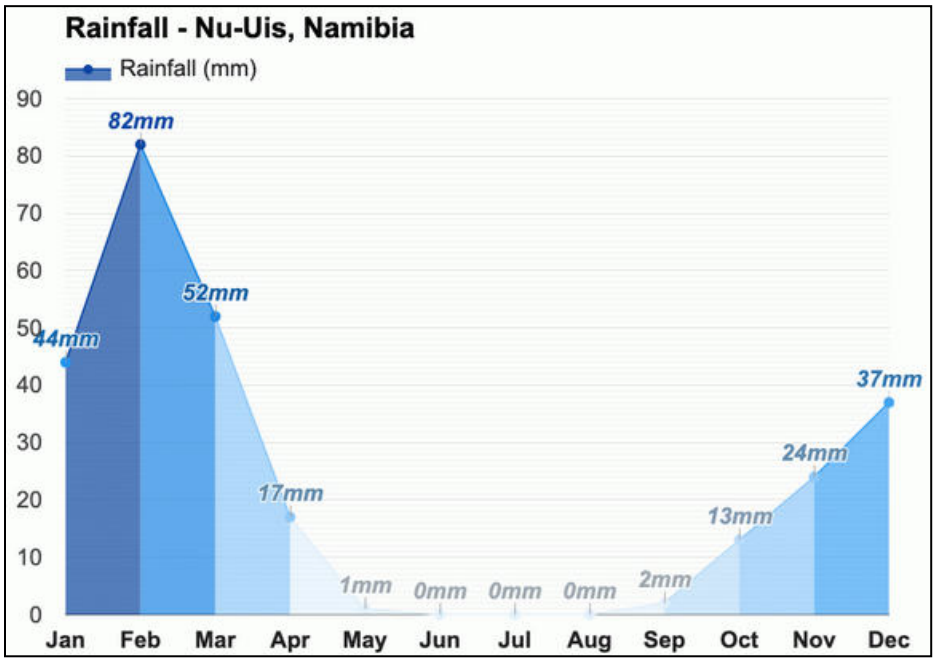

Fig. 10. Monthly average rainfall graph for Uis and the surrounding areas (Weather Atlas/Uis-climate, 2023).

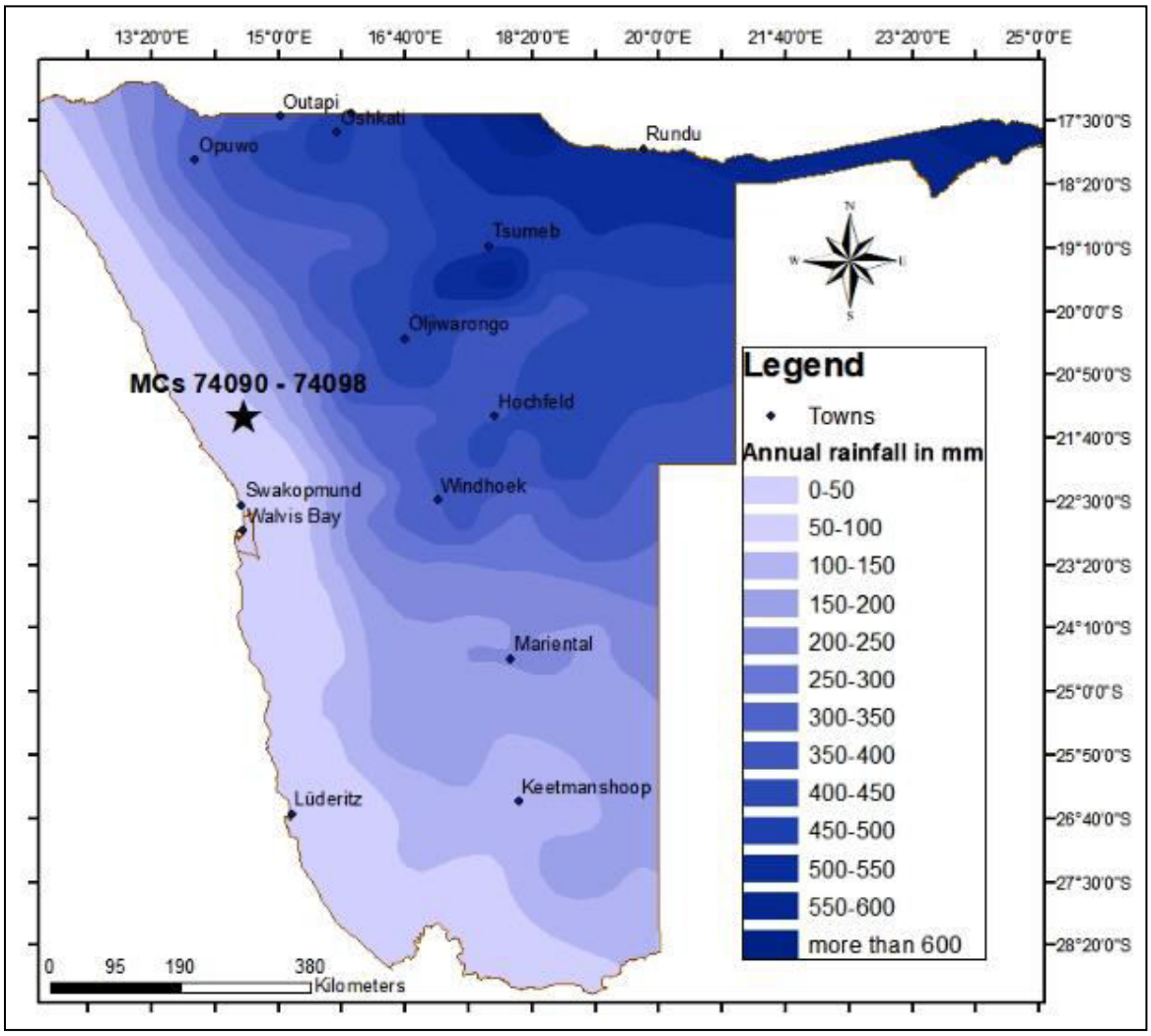

Fig. 11. Average annual rainfall in Namibia (ACACIA, 2002).

5.2.2 Temperature

Average maximum and lowest temperatures range from 24 to 32 °C and 10 to 20 °C, respectively. The hottest months of the year are October and November, with average highs of 32 °C, and the coolest months, with average lows of 10 °C, are June and July. As a result, Uis has two main seasons: a hot summer and a mild winter.

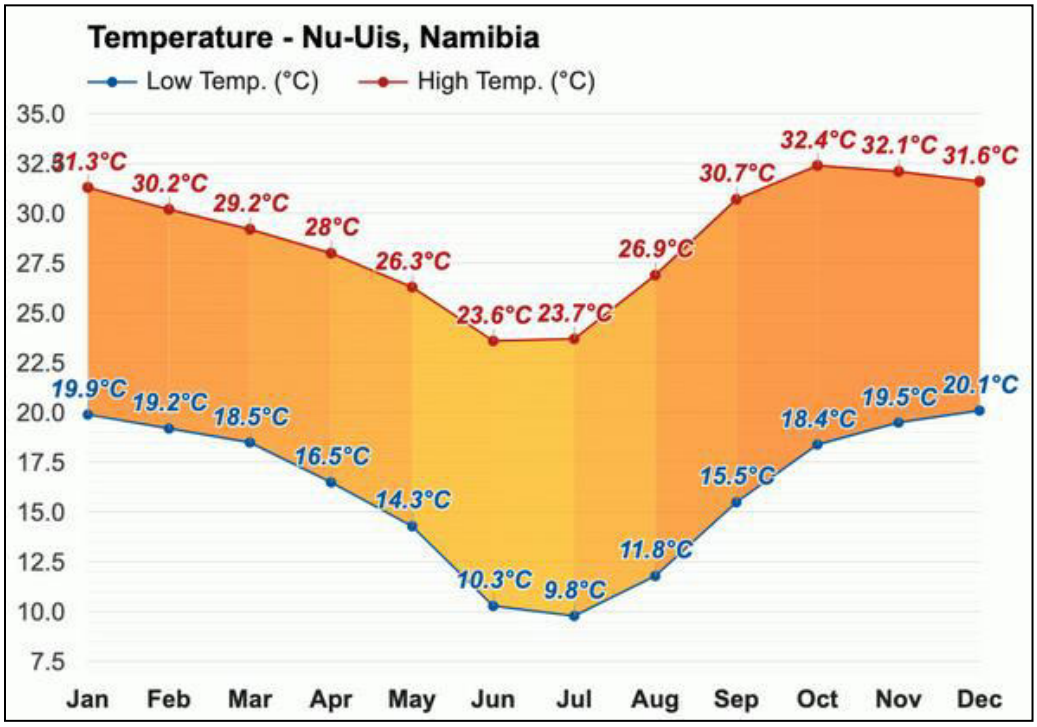

Fig. 12. Monthly average minimum and maximum temperatures of Uis that have been extrapolated to Mining Claims (MCs: 74090 to 74098), (Weather Atlas/Uis-climate, 2023).

The figure below shows minimum and maximum temperature for a 14-year period, from 2009 to 2023.

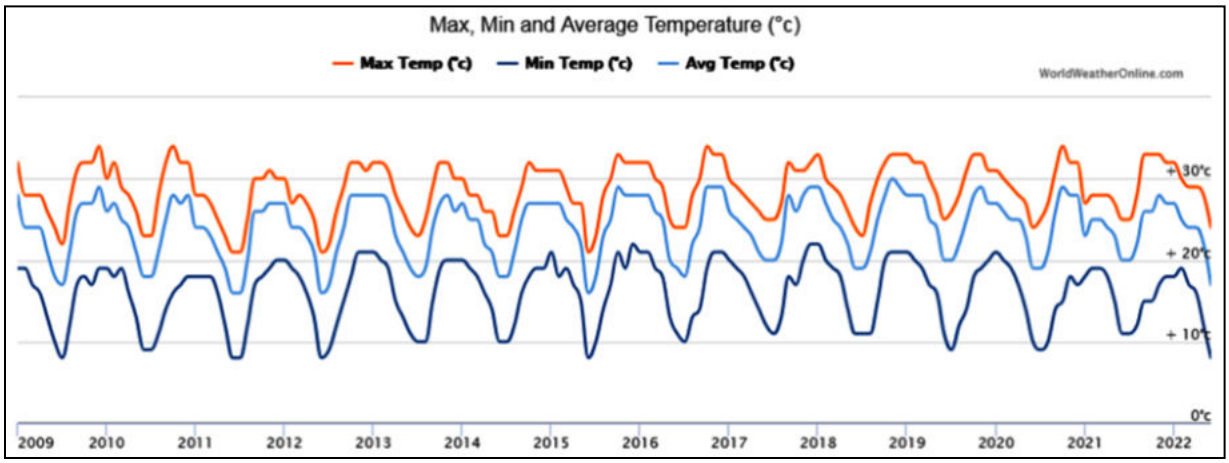

Fig. 13. Annual average minimum and maximum temperatures of Uis that have been extrapolated to Mining Claims (MCs: 74090 to 74098), (Weather Atlas/Okombahe-climate, 2023).

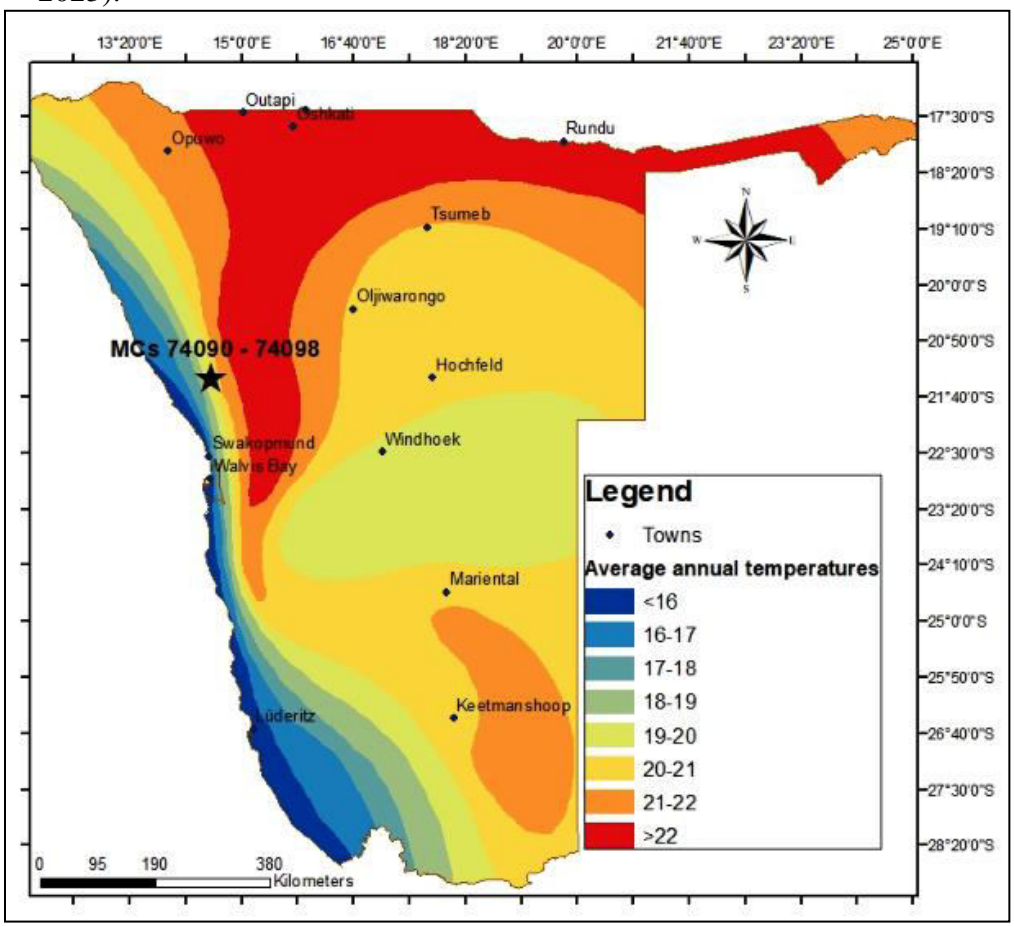

Fig. 14. Average annual temperature in Namibia (ACACIA, 2023).

High solar radiation, low humidity, and high temperature lead to very high evaporation rates, which vary between 2,800 to 3000 mm per annum around the project area. Over most part of the country, potential evaporation is at least five times greater than average rainfall.

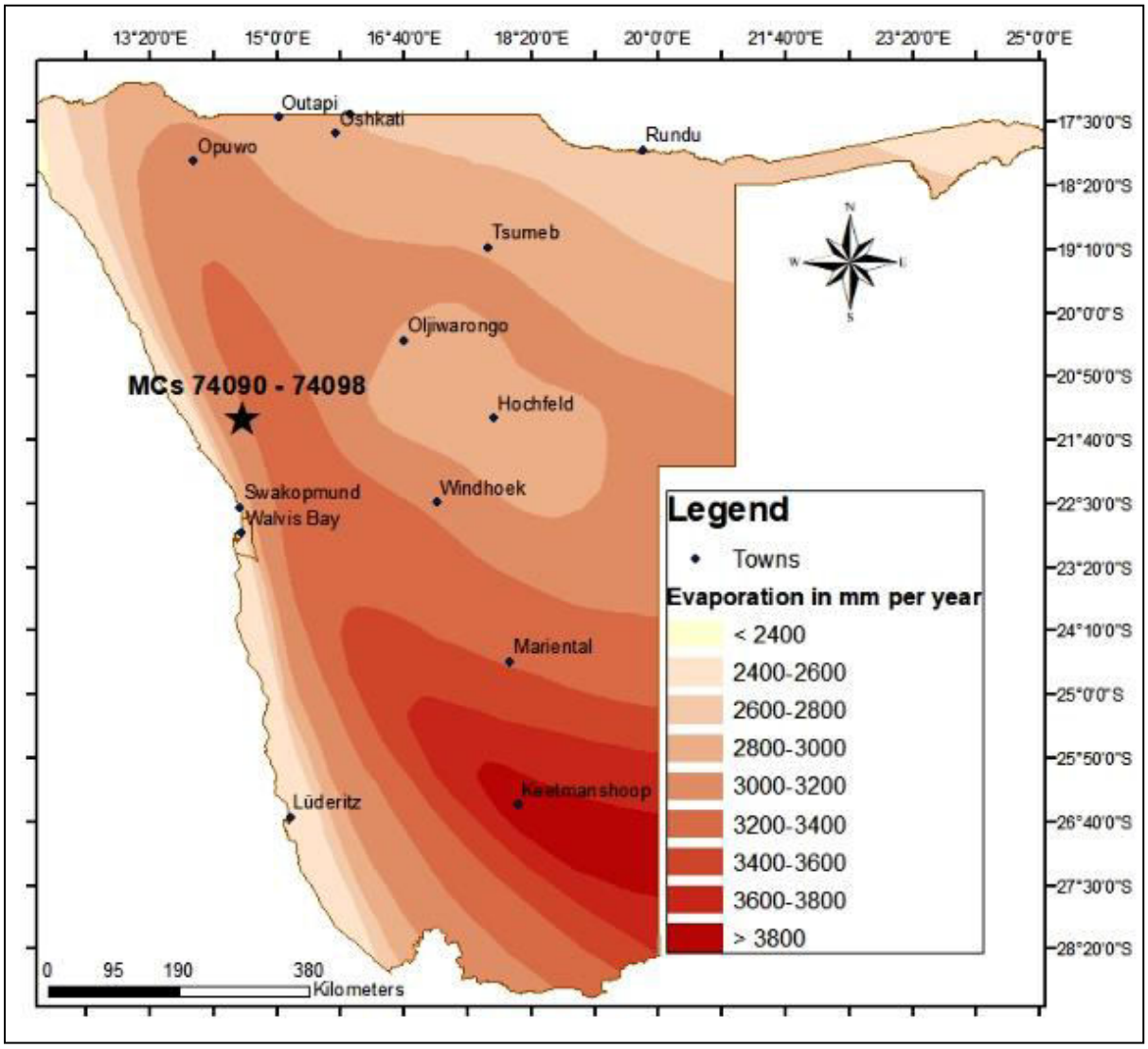

Fig. 15. Average annual evaporation in Namibia (ACACIA).

Table 7: Average climate in Uis and the surrounding areas (weather-atlas, 2023)

Month	Average max. temperature	Average min. temperature	Precipitation (mm)
January	31.4°C	19.9°C	44
February	30.2°C	19.2°C	82
March	29.2°C	18.5°C	52
April	28.0°C	16.5°C	17
May	26.3°C	14.3°C	1
June	23.6°C	10.3°C	0
July	23.7°C	9.8°C	0
August	26.9°C	11.8°C	0
September	30.7°C	15.5°C	2
October	32.4°C	18.4°C	13
November	32.1°C	19.5°C	24
December	31.6°C	20.1°C	37

5.2.3 Wind

The average wind speed in the project area ranges from 9 to 13 km/h. Two main trends can be seen in the wind patterns around the project area: high velocity and frequency south to south-westernly winds in summer and high velocity, low frequency east to north-easterly winds during winter. The east winds that are produced over the scorching Namib Desert during winter have a significant impact on temperature, causing temperatures in the upper 30 ^{o}C and tend to transport plenty of sand. It's crucial to know the wind direction and speed in order to forecast how dust impacts should be mitigated. The annual average wind speed is depicted in **Figure 21** below.

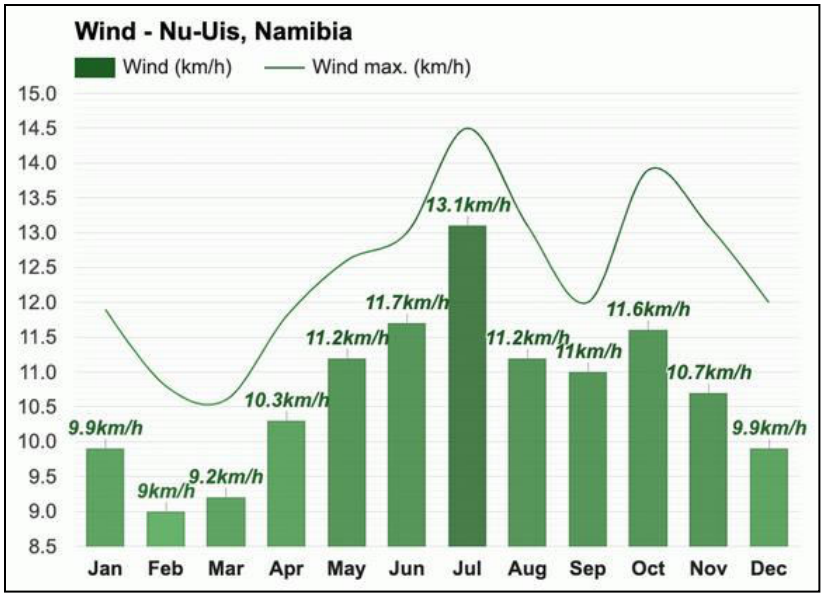

Fig 16. Average wind speed per month in Uis (Weather Atlas/Uis-climate, 2023).

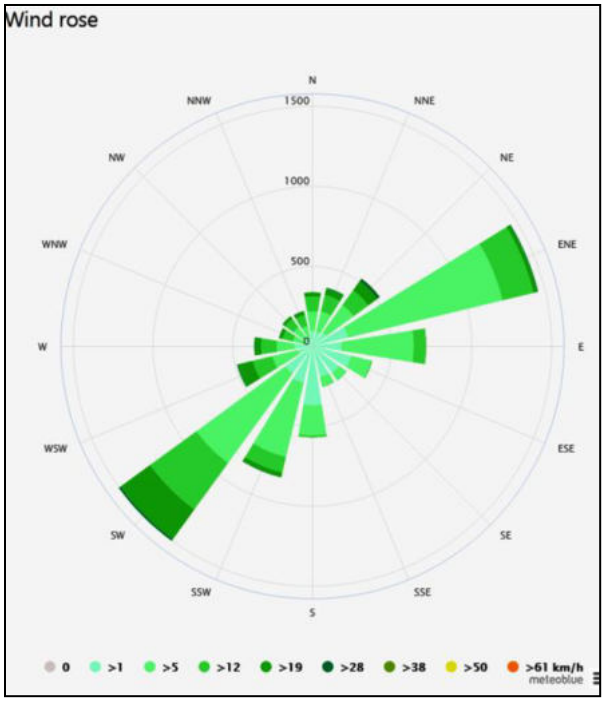

Fig 17. Wind rose for Uis Settlement, showing how many hours per year the wind blows from the indicated direction (Meteoblue 2023).

According to Meteoblue, the project area's major wind direction is from southwest (SW) to northeast (NE), as seen on the wind rose in Figure 22.

5.2.4 Humidity

Humidity is a measure of the amount of water vapor in the atmosphere. Precipitation is more likely to occur in humid environments. According to the Weather Atlas/Uis-climate (2023), relative humidity in Uis typically ranges from 20 to 30%. Nevertheless, it can reach as high as 51% in March and as low as 21% in September.

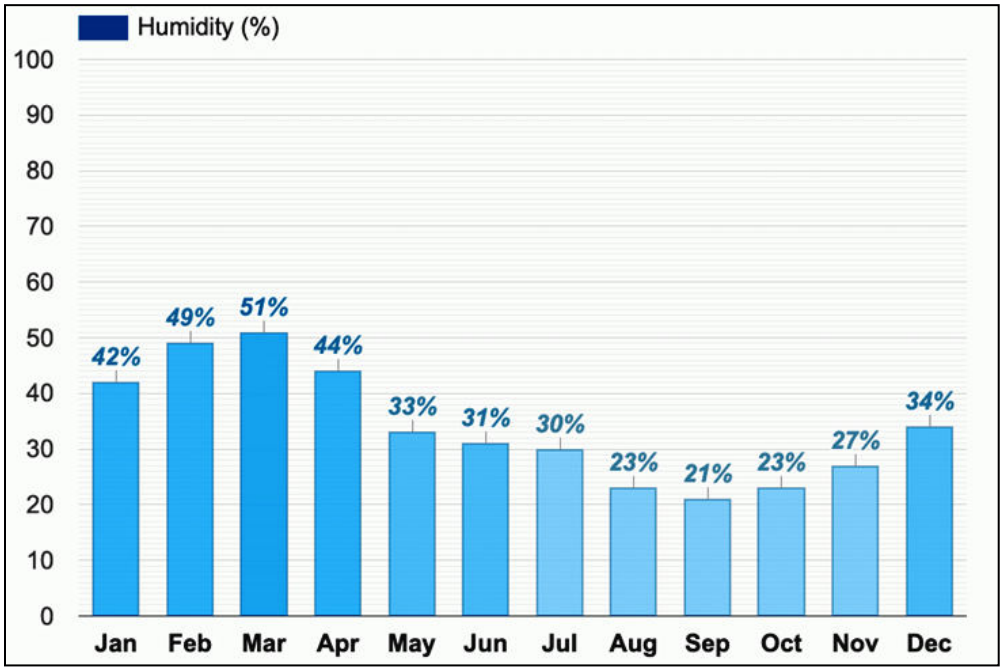

Fig.18. Uis Settlement average humidity (Weather Atlas/Uis-Climate,2023).

5.2.5 Air Quality

Tourism, small-scale animal farming, mineral exploration, and mining are the main industries in the Project area. According to data from accuweather.com, the area's air quality is generally excellent, with an AQI of 16. The ground-level ozone (O_3) is about 16 µg/m³ which is excellent. PM2.5 levels (fine particulate matter) are approximately 7 g/m^3, while PM10 levels are approximately 4 g/m^3. There are no detected amounts of sulfur dioxide (SO2), carbon monoxide (CO), or nitrogen dioxide (NO2) in the area. Dust produced by livestock grazing, emissions from moving vehicles along the C35 and D2342 gravel roads, and wind erosion from exposed locations are all likely sources of air pollution in the area.

5.3 Geology

5.3.1 Regional geology

The project area falls within the Damara belt which forms part of the Pan-African collision belts in southern Africa representing the formation of the Gondwana supercontinent (Miller, 2008). This Damara Belt formed as a result of the subduction of the the Kalahari Craton beneath the Congo/Angola Craton during continental collision dated at ~542 Ma (Miller, 2008). On the basis of stratigraphy, metamorphic grade, structure, geochronology, plutonic rocks, and aeromagnetic expression, the Damara orogenic belt has divided into several different zones (Miller, 1983, 1998). These zones are separated by tectonic lineaments and the project area is located in the Northern Zone (NZ) of the Damara Belt (Fig 24). There are several pegmatite belts that roughly trend east-northeast in these zones of the Damara belt. numerous rare-metal pegmatites are found in these belts, which appear to confined to narrow regional belts within the upper Damaran Supergroup metasediments retained in grabens that have been active since the Proterozoic. The pegmatite belt of interest for this Project is the Cape-Cross-Uis Pegmatite belt.

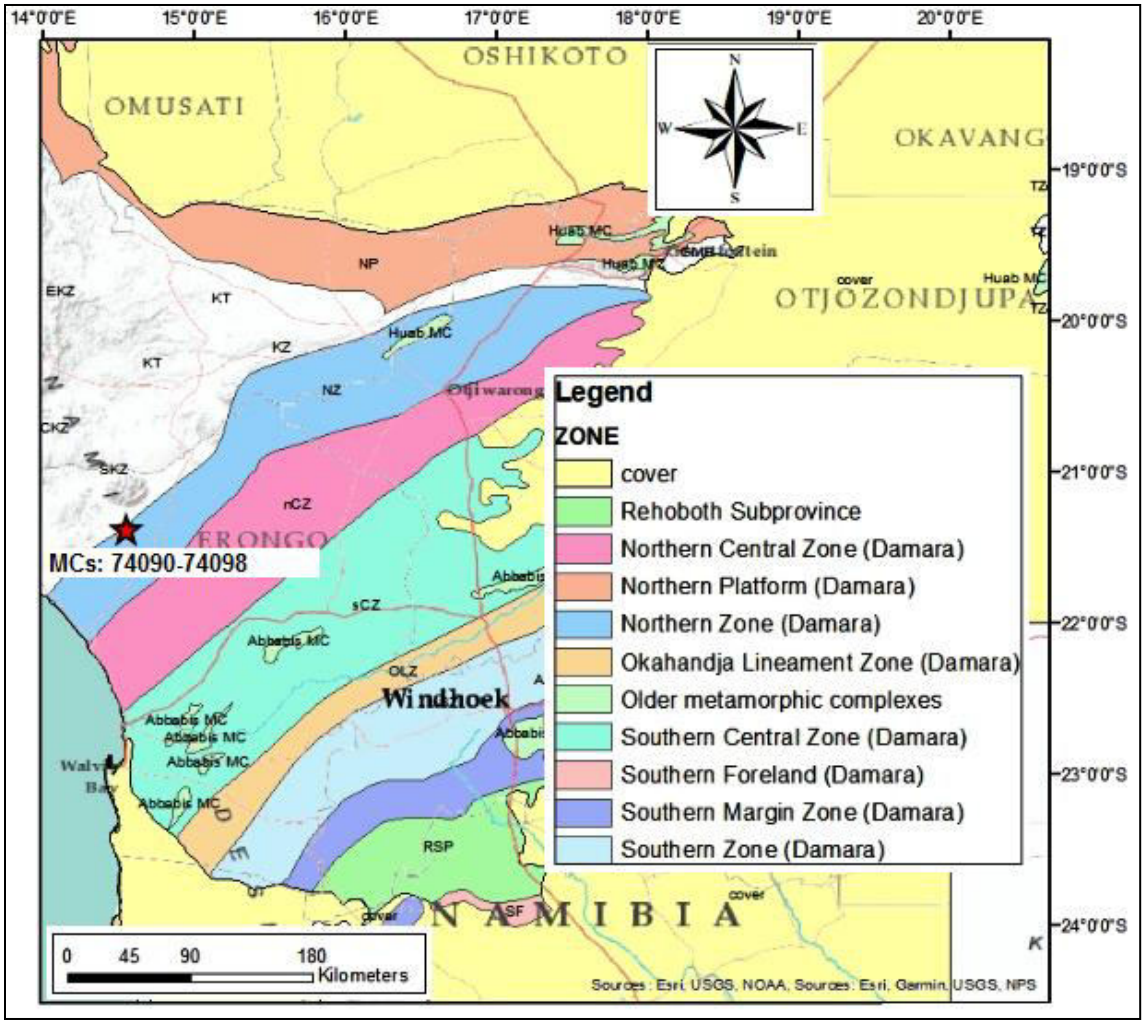

Fig. 19. Tectonic zones of the Damara orogenic belt. (Shape files are from the Geological Survey of Namibia). TheMining Claims (MCs: 74090 to 74098), are located in the northern zone (NZ) of the Damara belt.

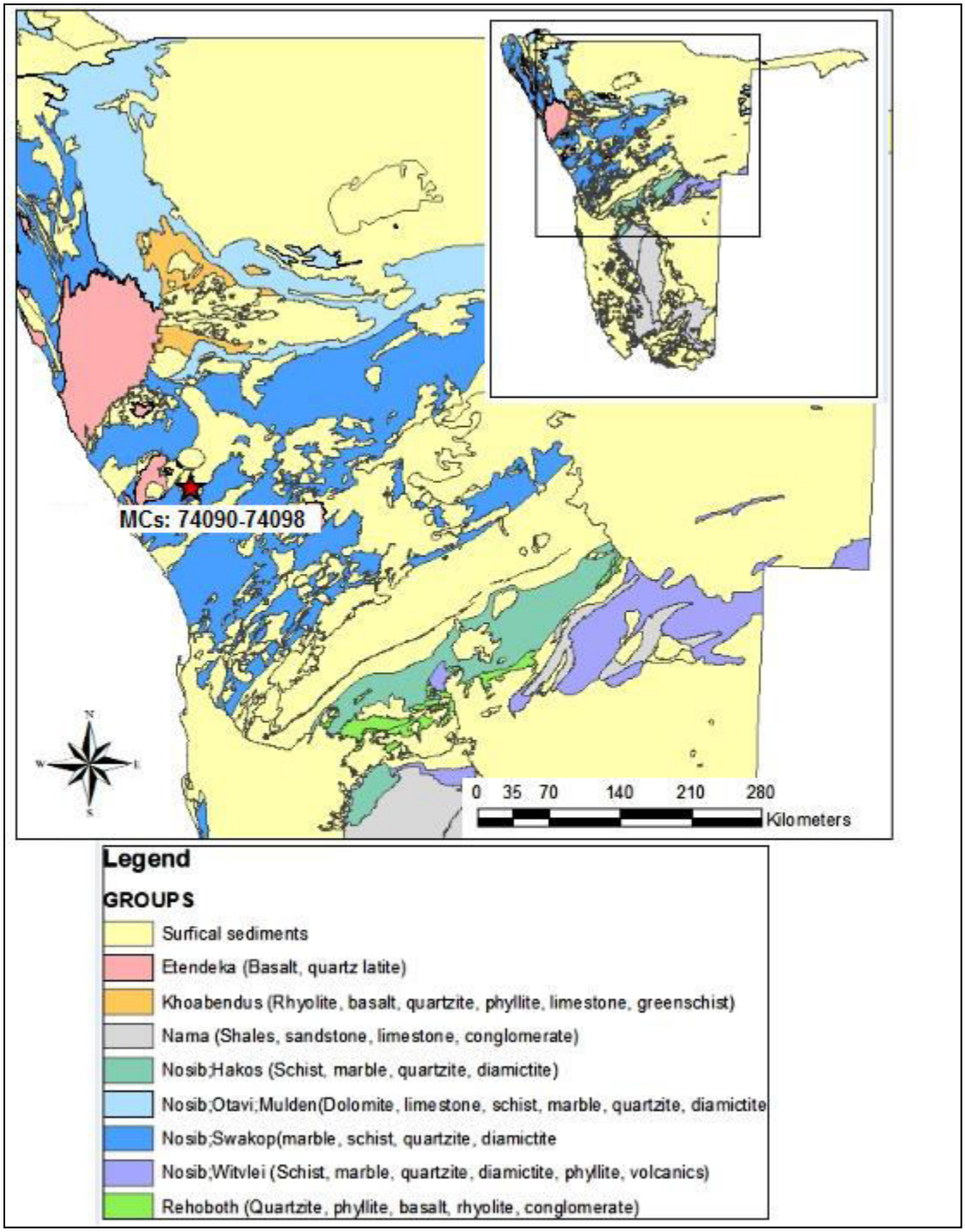

Fig. 20: Geology map of the project area

5.3.2 Local Geology

The Cape Cross Uis pegmatite band, commonly referred to as the northern Namibian tin belt, spans from Cape Cross at the Atlantic Ocean in the west to beyond Uis settlement in the east (Diehl, 1986; Wagener, 1989). This belt belongs to a group of several northeast trending belts with the Cape Cross-Uis belt and the Sandamap-Kranzberg belt being well-known tin suppliers. The Cape Cross-Uis belt is roughly 120 km in length and, 40 km in width, it hosts to numerous pegmatite bodies that intruded into the meta-sedimentary and granitic rocks of the Zerrissene Group and Salem-type granites. Dominant mineralogy is granitic and mineral phases include apatite, tourmaline, lepidolite, spodumene, columbite group minerals, cassiterite, and beryl depending on the complexity of the pegmatite These post-tectonic pegmatites have notable quantities of Sn, Nb, Ta, and Li, which are largely sub-economic.

Stratigraphically, the project area is located within the Zerrissene Group (Amis River formation). A number of granite and pegmatite bodies of syn, late, and post-tectonic age have intruded the Zerrissene metasediments. Several quaternary-aged deposits of sand, gravel, and calcrete cover parts of the project area as shown in the map below (fig.21). The Cape Cross-Uis pegmatite belt has been divided into three separate pegmatite swarms: Strathmore, Karlowa and Uis and based on classification of Cerny and Ercit (2005), the pegmatites are of the LCT family, rare element class and beryl complex type. The mining claims are covering mineralized rocks of the Karlowa pegmatite swarm.Compared to the size of the Karibib and Uis pegmatites, the Karlowa pegmatites are comparatively modest, reaching up to 120 m in length and 5 m in breadth. They strike northeast and dip roughly 35° to the north. Like the Uis pegmatites, the Karlowa pegmatites have been emplaced in the metapelitic rocks of the Amis River Formation, although in the Karlowa area, they are not porphyroblastic.

Fig. 21. Detailed local geology of the Mining Claims (MCs: 74090 to 74098).

5.4 Surface water

The Project is located in the water-scarce, semi-arid climate which is largely devoid of surface hydrological features such as rivers, lakes, and dams. Due to the arid climate of the study area, surface water is only available for a short period of time after rainfall events. However, a number of previous mined open pits are filled with water around Uis settlement. Upper north of the project lies Omaruru river, the Omaruru River has its headwaters in the area just to the north of the Etjo Mountains, and south-east of Kalkfeld, and flows in a generally south-westward direction until it reaches the sea at Henties Bay, after approximately 300 km and covers a catchment area of

approximately 11,870 km^2. The river has generated extensive alluvial deposits, which provide useful aquifers for groundwater abstraction at a number of locations along the river (Omaruru, Okombahe, Nei-Neis, Omdel), which are recharged by infrequent flood events. Tsiseb conservancy has two ephemeral rivers forming part of the conservancy boundaries, the Ugab River on the northern boundary and the Omaruru River flowing along the south-eastern boundary.

5.5 Groundwater / hydrogeology

The Omaruru Delta (OMDEL) and the Kuiseb aquifers are the main sources of groundwater for the Erongo Regin. The project area lies in the upper Omaruru-Swakop River basin, which encompasses the Khomas, Erongo, and Otjozondjupa Regions, and has a relatively dry environment. Due to the area's limited rainfall, groundwater recharge is comparatively minimal and largely depends on runoff from the Omaruru and Ugab Rivers. The output of borehole water resources is not considered as a practical sustainable source of water resources due to the limited groundwater potential. Since the project area is surrounded by an area with little to no groundwater, groundwater will not be utilized.

Due to the area's low groundwater recharge, groundwater intrusion into the pits is not thought to pose a significant problem when mining begins, and only minimal pumping may be needed. Although there is no anticipated risk, it is advised that groundwater input be watched when mining. Regional groundwater is associated with the good secondary hydraulic properties of the limited surficial covers and secondary structures such as factures (joints & faults) within subsurface hard rock (carbonates) bodies.

The neighboring Omaruru Delta (OMDEL) aquifer system, which lies close by, could get contaminated if hydrocarbons spill on the surface during project operation. Hence, it is advised that the proponent drill at least two to three monitoring boreholes to do a quarterly investigation of the quality of the groundwater. However, as no borehole drilling will be required during the exploration phase, this will only be relevant when mining. Permission for borehole drilling, groundwater abstraction will be obtained from the responsible land owners as well as the Ministry of Agriculture, Water and Land Reform (MAWLR) shall the need for groundwater uses arise.

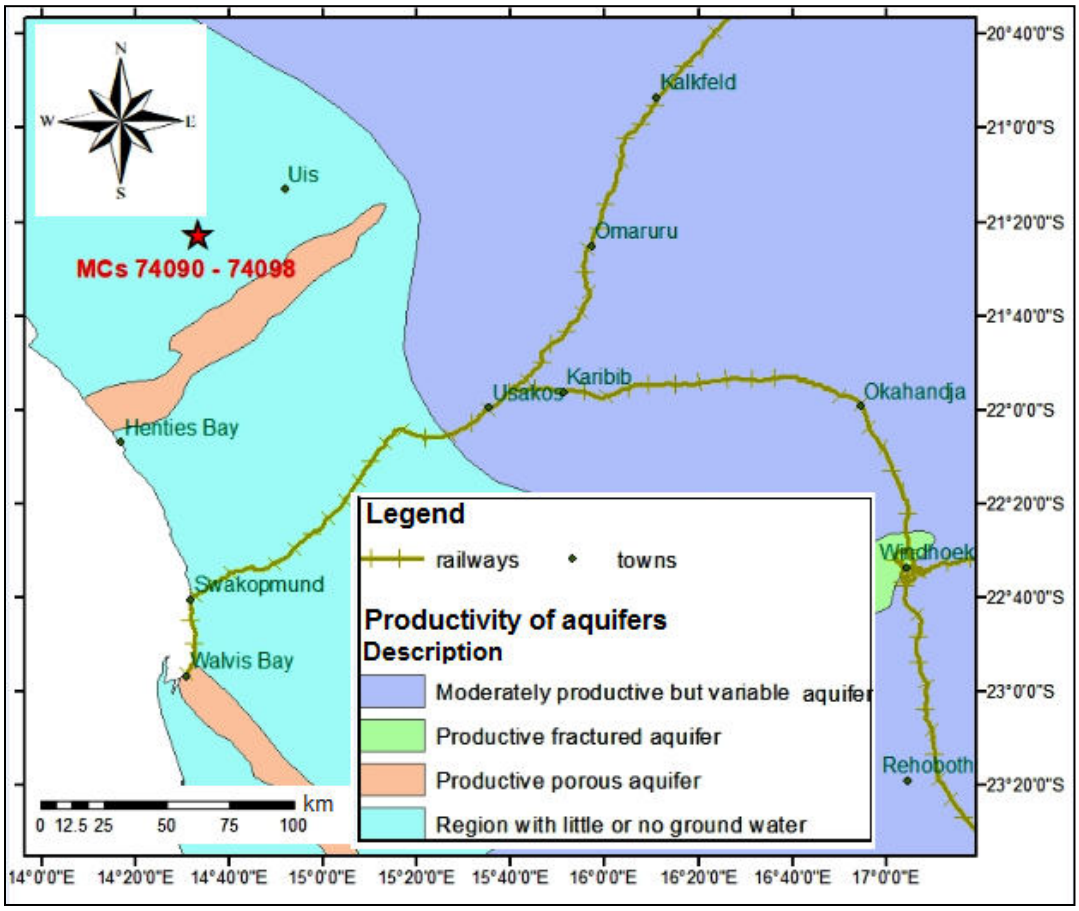

Fig.22.Hydrogeological Map of the project area. The project area is underlain by a region with little or no groundwater.

5.6 Topography

Geographically, the project area is situated on an escarpment between the Namib Desert and the Central Plateau. Escarpment is a mountain range that runs from the north to the south of Namibia and can reach heights of up to 1000 meters, but it is not a continuous mountain range.

Two ephemeral rivers form part of the conservancy boundaries, the Ugab River on the northern boundary and the Omaruru River flowing along the south-eastern boundary. The Brandberg Mountain, one of the highest mountains in Namibia (2,573 m), is 30 km north of the mining claims. It is home to a number of world-renowned Bushmen paintings as well as archaeological remains.

The project area is distinguished by discrete mountainous sections with flat, eroded sand-covered areas in between, resulting in obvious topographic raised surface expressions. local relief is moderate to high with elevations between 1200 and 900 meters above sea level.

5.7 Terrestrial biodiversity: fauna and flora

Introduction

Mountains are frequently abundant in endemic species, and endemism levels normally rise with altitude. Due to its close vicinity to Brandberg Mountain, the area is also well recognized for its rich biodiversity and large number of endemic species. As with all developmental projects in pristine areas impacts on fauna and flora are inevitable as such identification of high-risk habitats prior to commencement of the proposed activities coupled with environmentally acceptable mitigations will lessen the severity of the overall impact. The Brandberg and Erongo mountains, for example, are mountain ranges with a high biodiversity, and they are currently protected by communal conservancies in order preserve them.

An impact assessment of the proposed exploration on fauna and flora was carried out during the site visits conducted in January 2023. A thorough assessment was carried out within the project area by means of field observations, recording and data collecting. Some of the information is based on a detailed literature review. The purpose of the Fauna and flora literature review is to identify all potential amphibians, reptiles, mammals and plants expected on the project area. The proposed exploration area supports limited fauna species but there are no species that are exclusive to the study area. Further flora assessment was enhanced with the use of species lists of plants occurring within the quarter degree squares which was extracted from the database, Botanical Research and Herbarium Management System which is found at the National Botanical Research Institute in Windhoek.

The project area is part of the semi-desert biome, which is known for its exceptionally diverse and endemic-rich flora. This biome is made up of rugged mountains, semi-arid shrub lands, and coastal

dune, which create a wide variety of habitat types. Climate is semi-arid with hot summers, cool winters and low rainfall. Due to the low rainfall in the area, there is typically little vegetation growing, but the fauna in the project area and its surrounds can survive in a dry, hot climate. The biome is home to 6 356 plant species, 40% of which are endemic and 936 (17%) of which are listed in the Red Data Book. In addition to its floral variety, 431 bird species have been identified, as well as 27 amphibian species, 29% of which are endemic, 121 reptile species, 20% of which are endemic, 68 mammal species, and 9% of which are endemic.

5.7.1 Flora

The landscape is more barren and rockier with scanty vegetation dominated by arid-adapted biota such as succulents and annual grass species. This includes a number of species endemic to the central and northern Namib as well as various protected species such as *Commiphora saxicola* (rock corkwood) and *Zygophyllum stapffii Schinz* (Dollar bush). *Moringa ovalifolia* is widely distributed and locally prevalent in several project locations. Table 8 shows some of the vegetation that can be found in the project vicinity.

Table 8: Plant species found in the study area

Scientific name	Endemic	Protected	Near Endemic	Threatened	Least Concern
Acacia erubescens Welw. ex Oliv					
Acacia fleckii Schinz					X
Acacia luederitzii Engl. var. luederitzii					X
Acacia reficiens Wawra subsp. reficiens					X
Albizia anthelmintica (A. Rich.) Brongn.					
Boscia albitrunca (Burch.) Gilg & Gilg-Ben.					
BosciafoetidaSchinz subsp. foetida					X
Commiphora glaucescens Engl.			X		
Commiphora glandulosa Schinz					X
Commiphora tenuipetiolata Engl.					X
Commiphora saxicola Engl.	X				X
Commiphora wildiiMerxm.					X

Croton gratissimus Burch. var. gratissimus					
Euphorbia damarana L.C. Leach			X		X
Euphorbia virosaWilld. subsp. virosa					X
Lycium bosciifolium Schinz					
Moringa ovalifolia Dinter		X	X		X
Parkinsonia Africana Sond					
Terminalia prunioides M.A. Lawson					
Zygophyllum stapffii Schinz	X				X

Vegetation of the barren and desolated plains of the Namib Desert are mostly restricted to the sandy beds of non-perennial drainage lines within the catchment which flow only after substantial rainfall. Only after significant local rain events can grass cover fully develop, however patches of the annual grass *Schmidtia kalaharienis* were clearly visible during site visit. Up to 111 grass species, representing 73 to 88 different species, are thought to exist in the region (Müller, 2007; Van Oudshoorn, 1999). The endemic *Setaria finite* connected to ephemeral drainage pathways is the most significant grass anticipated in the area.

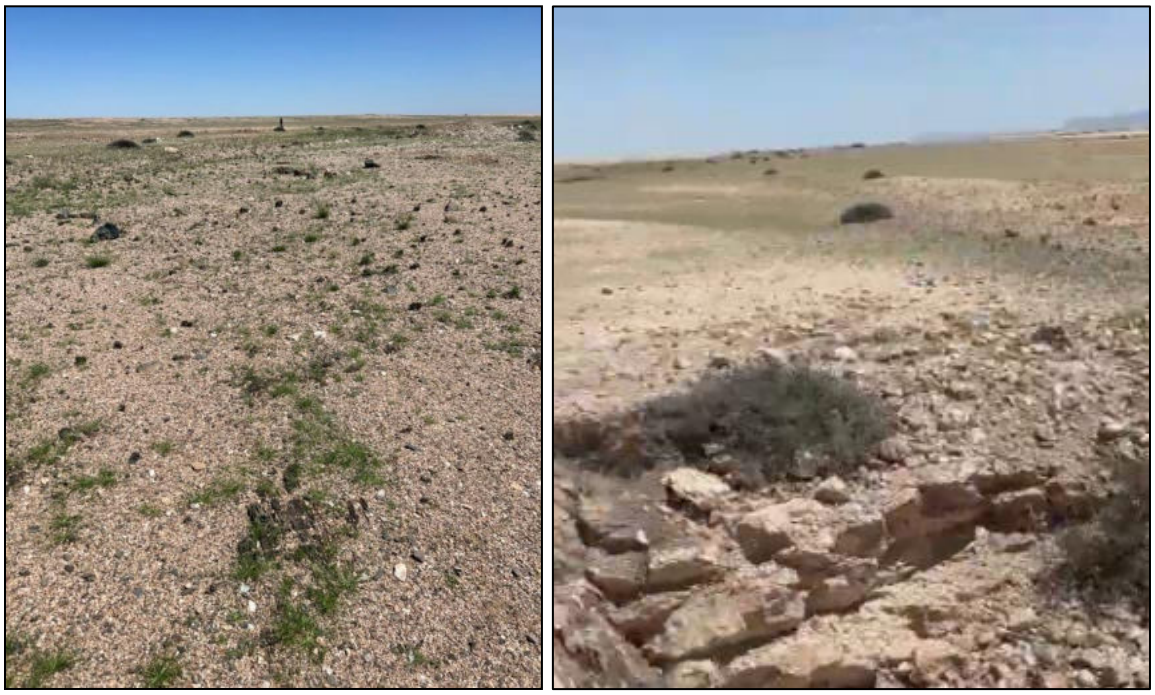

Fig 23: Scattered vegetation found in the project area.

5.7.2 Fauna

Mammals

There was no wildlife seen during the site visit, which took place during the day. This, however, does not imply that there was no wildlife in the project area; rather, it may be explained by the fact that wildlife was hiding out of sight and away from human presence in the shadows of the distant foliage and possibly beneath rock outcrops. Based on literature review, implementation of the proposed project activities in the area will not have a negative impact on any of the species in the project area.

Table 9: Mammal species which are likely to occur within the project area.

No	Scientific name	Common name	No	Scientific name	Common name
1	*Acinonyx jubatus*	Cheetah	6	*Oryx Gazella*	Gemsbok
2	*Antidorcas marsupialis*	Springbok	7	*Panthera leo*	Lion
3	*Crocuta crocuta*	Spotted Hyena	8	*Panthera pardus*	Leopard
4	*Equus quagga*	Zebra	9	*Tragelaphus stresiceros*	Kudu
5	*Hyaena brunnea*	Brown Hyena	10	*Oryx Gazella*	Gemsbok

Reptiles

Griffin (1998) highlighted the presence of 261 species of reptiles which are present in Namibia. These reptiles make up 30% of the reptile species found on the continent. 55 species of Namibian Lizards are classified as endemic (Griffin, 1998). The author, Griffin (1998), describes that more than 60% of the reptiles found in Namibia are protected by the conservation Ordinance. Although exploration activities do affect reptile habitat, the project will not have any significant impact on the reptile species within the proposed exploration area. Namibia, with 129 species of lizards, has one of the continent's richest lizard Fauna. Vertebrate fauna species that may likely be affected by the proposed exploration will be mainly those with limited mobility such as some reptiles. The literature review showed that there are approximately 40 reptile species that are expected to occur in the Uis area, meanwhile seven reptile species are strictly endemic to the Project area as shown below:

Table 10: Reptile species which are likely to occur within the project area.

Scientific name	Common name
Sepsina alberti	Albert's skink or Albert's burrowing skink
Pedioplanis husabensis	Husab sand lizard
Nanaqua spinytail lizard	Cordylus namaquensis
Cordylus campbelli	Campbelli's spinytail lizard
Cordylus pustulatus	Herero girdled lizard
Pachydactylus gaiasensis	Brandber thick-toed gecko
	Albert's skunk

Avian diversity

Simmons et al (2003) points that although Namibia's Avifauna is comparatively sparse compared to the high rainfall equatorial areas elsewhere in Africa, approximately 658species have already been recorded with a diverse unique group of arid endemics. There are approximately 650 species of birds that have been recorded in Namibia, although the country's avifauna is comparatively sparse compared to the high rainfall equatorial areas in Africa (Brown & Lawson, 1989). Brown et al (1989) mentions that 14 species of birds are endemic or near endemic to Namibia with the majority of Namibian endemics occurring in the Savannah of which ten species occur in a north-south belt of dry. Approximately 40 bird species may occur in the project vicinity. Although red-listed /species including the Ludwig's Bustard and Kori Bustard, and various eagles are of likely occurrence.

5.8 Archaeology and Heritage Sites

Archaeological and Heritage Impact Assessment for the project area was carried out by a qualified archaeologist in a form of a site walkover survey. In the 40 km radius of the project area, there is one declared national heritage called Brandberg Mountain. Brandberg is known for its concentration of prehistoric rock art, including carvings and paintings. One of these, known as the White Lady, is especially famous. Accidental find procedure at the subject site must be strictly followed in accordance with the stipulations of the Namibian National Heritage Act. Moreover, a separate heritage impact assessment will be annexed to this report.

The archaeology of the Erongo Region has been well documented; available archaeological records indicate that early humans in the Central Namibia, Erongo Region dates back from the early Stone Age period, more than one million years ago as evidenced hominin fossils (Kinahan, 2017). Stone Age archaeology is prevalent in the larger geographical area. The geospatial data on the distribution of archaeological sites are concentrated mainly in the central highlands. There are about 150 sites are recorded in the Erongo Region, and the Region is also endowed with Iron Age artefacts and contemporary heritage resources. According to the National Heritage Council of Namibia Erongo Region have about 37 heritage sites which are listed as National monuments.

6. Assessment of Impacts

Overview

Environmental aspects and potential impacts were qualitatively assessed and identified by the Environmental Practitioner during the screening and assessment phases, in consultation with authorities, IAPs and the environmental team. This section provides a summary of activities associated with the proposed project in various phases as well as associated environmental aspects and potential impacts. The purpose of this document is, therefore, to guide environmental management throughout the different phases of the proposed exploration activities, namely: planning, prospecting & exploration, and decommissioning & rehabilitation phase:

Project Phases addressed

(a) **Planning phase** - The project's proponent prepares all of the administrative and technical requirements necessary for the on-the-ground work at this stage. The planning includes things like obtaining the necessary permitting and authorization from relevant national and local stakeholders (such as affected communities, traditional authorities, etc.), facilitating the recruitment and procurement processes, etc., in preparation of the exploration activities (and site maintenance).

(b) **Prospecting and Exploration phase -** This is the phase where the proponent will be carrying out exploration of the targeted mineral commodities in the first six (6) months. It is also the phase during which maintenance of the area, equipment and machinery is done by the Proponent. This is also the phase when mitigation measures are implemented, and the monitoring plan put in place.

(c) **Mining phase**- Upon completion of a resource estimate with high level of indicated and measured mineral resources, the economic viability of the mineral resource will be assessed if it is economic to extract the resource, and then the exploration project will progress to mining. This is also the phase during which the worksites, project infrastructure, vehicles, equipment, and machinery will be maintained by the Proponent, as deemed necessary.

(d) **Decommissioning, site closure and rehabilitation:**

-This is the phase when exploration activities cease as a result of either poor exploration results or loss of market demand for the targeted commodity. Rehabilitation measures will have to put in place during exploration and before decommissioning, or

- The closure period will commence once the last planned blocks of the targeted commodity ore have been extracted from the pit, at the end of the active mining period.

Identified potential impacts

Positive impacts

- Employment creation
- Revenue generation through royalties and taxes
- Local development
- Increased support for local businesses through the procurement of locally available goods and services during project period.

Negative impacts

- Air quality: dust generation and fumes emission
- Noise and vibration impacts
- Occupational health and safety
- Impact on terrestrial biodiversity (fauna and flora)
- Impact on ground and surface water
- Heritage and archaeological impact
- Visual impact
- Occupational health, safety and security
- Fire and explosion hazards
- Solid waste management
- Vehicular traffic safety

6.1 Impact analysis and evaluation

In this section, the impacts of the exploration and mining activities on the human and biophysical environment were evaluated and analyzed. The identified impacts were assessed in terms of probability (likelihood of occurring), extent (spatial scale), magnitude (severity) and duration (temporal scale). The impact assessment methodology used to determine the significance of impacts prior and after mitigation. This methodology ensures uniformity and that potential impacts can be addressed in a standard manner. The following assessment methodology was used to examine each impact identified:

Table 11: Impact assessment criteria

PART A: DEFINITION AND CRITERIA		
Definition of SIGNIFICANCE		**Significance = consequence x probability**
Definition of CONSEQUENCE		**Consequence is a function of severity, spatial extent and duration**
Criteria for ranking of the SEVERITY of environmental impacts	**H**	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action. Irreplaceable loss of resources.
	M	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints. Noticeable loss of resources.
	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints. Limited loss of resources.
	L+	Minor improvement. Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	M+	Moderate improvement. Will be within or better than the recommended level. No observed reaction.
	H+	Substantial improvement. Will be within or better than the recommended level. Favorable publicity.
Criteria for ranking the DURATION of impacts	**L**	Quickly reversible. Less than the project life. Short term
	M	Reversible over time. Life of the project. Medium term
	H	Permanent. Beyond closure. Long term.
Criteria for ranking the SPATIAL SCALE of impacts	**L**	Localized - Within the site boundary.
	M	Fairly widespread – Beyond the site boundary. Local
	H	Widespread – Far beyond site boundary. Regional/ national

PART B: DETERMINING CONSEQUENCE					
SEVERITY = L					
DURATION	Long term	**H**	**Medium**	**Medium**	**Medium**
	Medium term	**M**	**Low**	**Low**	**Medium**
	Short term	**L**	**Low**	**Low**	**Medium**

SEVERITY = M					
DURATION	Long term	**H**	**Medium**	**High**	**High**
	Medium term	**M**	**Medium**	**Medium**	High
	Short term	**L**	**Low**	**Medium**	Medium

SEVERITY = H					
DURATION	Long term	**H**	**High**	**High**	**High**
	Medium term	**M**	**Medium**	**Medium**	**High**
	Short term	**L**	**Medium**	**Medium**	**High**
			L	**M**	**H**
			Localized Within site boundary Site	Fairly widespread Beyond site boundary Local	Widespread Far beyond site boundary Regional/ national
			SPATIAL SCALE		

PART C: DETERMINING SIGNIFICANCE				
Definite/ Continuous	**H**	**Medium**	**Medium**	**High**
Possible/ frequent	**M**	**Medium**	**High**	**High**
Unlikely/ seldom	**L**	**Low**	**Low**	**Medium**
		L	**M**	**H**
		CONSEQUENCE		

PART C: DETERMINING SIGNIFICANCE					
PROBABILITY (of exposure to impacts)	Definite/ Continuous	**H**	**Medium**	**Medium**	**High**
	Possible/ frequent	**M**	**Medium**	**Medium**	High
	Unlikely/ seldom	**L**	**Low**	**Low**	Medium
			L	**M**	**H**
			CONSEQUENCE		

PART D: INTERPRETATION OF SIGNIFICANCE	
Significance	**Decision guideline**
High	It would influence the decision regardless of any possible mitigation.
Medium	It should have an influence on the decision unless it is mitigated.
Low	It will not have an influence on the decision.

H+ = High positive; H= High; L+ = Low positive; L = Low; M = Medium

Mitigation measures

Where negative impacts are identified, mitigation objectives have been set, and practical, attainable mitigation measures must be recommended that will minimize or eliminate the impacts. Where mitigation is not feasible, this has been stated and reasons given. In the case of positive impacts, enhancement measures are recommended for optimizing the benefit to be derived.

Monitoring

Monitoring requirements with quantifiable standards to assess the effectiveness of mitigation actions have been recommended where appropriate. These must indicate what actions are required, by whom, and the timing and frequency thereof. If further investigations must be undertaken and monitoring programs implemented before, during and after operations.

6.2 Identified impacts on bio-physical environment

Negative Impacts

The following potential effects on the environment during the construction, operation and decommissioning phase of the proposed project have been identified:

6.2.1 Air quality impacts: dust generation and fume emissions

The proposed exploration and mining activities are the potential of fugitive sources for the dust particles as they are easily dispersed and carried away by the winds. During the operation phase dust will be generated onsite by earth moving equipment and also on the gravel road by heavy trucks and light motor vehicles. Vehicular movements from heavy vehicles such as trucks would potentially create dust even though it is not always so severe. Furthermore, continuous movements of people, vehicles and earth moving vehicles on site can thus loosen and re-suspend the deposited material again into the air leading to air pollution. Windblown particulates from natural exposed surfaces common especially in semi-arid and arid areas can result in significant dust emissions with high particulate concentrations near the source locations. Emission of dust into the environment can be effectively contained by means of damping. Dust may be might be aggravated during the winter months when strong winds occur (>10 m/s).

Moreover, vehicle exhausts contain a number of pollutants including carbon dioxide (CO_2), carbon monoxide (CO), hydrocarbons, oxides of nitrogen (NO_x), Sulphur and PM10. Tiny amounts of poisonous trace elements such as lead, cadmium and nickel are also present. The quantity of each pollutant emitted depends upon the type and quantity of fuel used, engine size, speed of the vehicle and abatement equipment fitted. Once emitted, the pollutants are diluted and dispersed in the ambient air. Pollution by hydrocarbon combustion in vehicles is of less concern as field vehicles are fitted with suitable exhaust filters.

Dust generated and air pollutants suspended in the air could be inhaled by the workers leading to respiratory diseases. The main respiratory diseases related to inhale mineral dust include

pneumoconiosis, chronic obstructive pulmonary disease (CODP) and lung cancer. it should however be noted that the scale and nature of the proposed project is such that prolonged and continuous exposure to mineral dust is not expected. Dust generated and fumes emissions do not only impact humans, but also flora. The fallout dust settling on vegetation is likely to affect rates of photosynthesis and transpiration in a long term. The settled dust on plant leaves may not only affect vegetation functionality but also livestock that feed on vegetation. Where possible the project should avoid, minimize, and control adverse impacts to human health, safety, and the environment from emissions to air.

Table 12: Qualitative assessment of air quality impacts.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	**M**	**M/H**	**L**	**M**	**M**	**M**
Mitigated	**L**	**L**	**L**	**L**	**L/M**	**L**

Mitigation Measures to be enforced

- Dust suppressants shall be applied to all the exploration activities as well as all off roads and gravel roads.
- The speed of project vehicles must be strictly controlled to reduce dust or prevent deterioration of the roads being used.
- All off roads in the project area should have a speed limit of 40km/h in order to minimize the amount of dust generated by vehicles.
- During high wind conditions the proponent must make the decision to cease works until the wind has calmed down.
- Use of personal protective equipment for proper dust control for respiratory protection and other necessary PPE (gloves, work suits, sun hats etc.).
- Converting high-use vehicles to cleaner fuels, where feasible
- Installing and maintaining emissions control devices, such as catalytic converters.
- Implementing a regular vehicle maintenance and repair program.
- The movement of drilling related vehicles on unpaved access track will be on a small scale.

- Dust control measures such as water spray should be used on gravel road and near exploration sites to suppress the dust that may emanate from exploration activities such as drilling, trenching and test quarrying sites.
- Regardless of the size or type of vehicle, fleet owners /operators should implement the manufacturer recommended engine maintenance programs.

Monitoring

- Daily inspection by the ENC of the gravel roads and exploration site on possible dust creation that requires attention.
- Daily inspection on site by the ENC to ensure that all workers are wearing their protective clothes.

6.2.2 Noise and vibration impacts

Noise pollution and vibrations are most likely to be created by drilling and other earth moving activities on site. Noise pollution can be defined as any disturbing or unwanted noise that interferes or harms human or wildlife. Noise sources in the proposed project are of various types, identified sources are: point sources, line source, area source, and moving sources. Potential noise during exploration activities may originate from vehicles, machinery, hammers, excavators, and drill rigs. Drilling rigs may remain on site for periods ranging from days, weeks or months. Noise levels can be up 80dB for diamond drilling and 120dB for reverse circulation at rig source on a $<100m^2$ footprint, hence the employees are the immediate receptor of the noise impacts. Currently noise from road traffic is the dominant noise source within the study area.

Continuous exposure to noise levels above the internationally accepted level of 90 decibels can leads to multiple adverse effects on physical and mental state of the identified Noise Sensitive Receptors (NSRs). Some of these effects are: tinnitus, and noise induced hearing loss (NIHL), reduced performance, sleeping difficulties, disturbance in conversation, annoyance or stress, anxiety, depression, high blood pressure and, high blood cholesterol. According to ISO 18001 standards, workers are not allowed to work under noise levels that are equal to or exceed 85

decibels per 8 hours. Noise pollution has negative impact on wildlife species by reducing habitat quality, increase stress level land masking other sounds. A noise baseline survey will be undertaken prior to the commencement of the mining project to assess noise level impacts at designated points of the project site. The study will focus on the area noise monitoring to assess noise level of the study as well as a personal noise dosimetry to measure the percentage of noise dose to which a person is exposed during movements in different noisy or quieter areas during a working shift within the mine.

Table 13: Shows qualitative assessment of noise and vibration impact.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	**L/M**	**L/M**	**M/H**	**M**	**M/H**	**M**
Mitigated	**L**	**L**	**M**	**L**	**L/M**	**L**

Mitigation Measures to be enforced:

- Drilling will only be conducted during the day, where the drill-site is located close to a dwelling.
- Noise from project vehicles and equipment on the working sites of the project area should be at acceptable levels.
- Noise levels should not be equal to or exceed 85dBA for workers working an 8-hour shift (according to ISO 18000).
- Workers working near high noise machinery and vehicles should be provided with ear protection equipment such as ear muffs and earplugs.
- Reduction of noise from drilling rigs by using down hole drilling
- No noise generating activities should be undertaken before 8am and after 17:00 hours, over weekends and on public holidays.
- Employees should be limited to working hours only at most 8 hours per day.
- In the event that activities continue outside the stipulated hours the contractor will communicate such occurrences to potentially affected communities prior to commencing such activities.
- Do not allow the use of horns/hooters as a general communication tool, but use it only

where necessary as a safety measure.

- Safe minimum distance from noise generating activities should be introduced.

Monitoring

Noise monitoring may be carried out for the purposes of establishing the existing ambient noise levels in the area of the proposed project, or for verifying operational phase noise levels. Noise monitoring programs should be designed and conducted by trained specialists. The type of acoustic indices recorded depends on the type of noise being monitored, as established by a noise expert. Continuous monitoring of noise levels should be conducted to make sure the noise levels at the site does not exceed acceptable limits.

6.2.3 Impacts on terrestrial biodiversity

The transformation of land for any purpose results in the destruction of the site-specific biodiversity, the fragmentation of habitats, reduces its intrinsic functionality and reduces the linkage role that undeveloped land fulfils between different areas of biodiversity importance. The alteration will occur through physical disturbance and continued human presence and use. Biodiversity assessment relates to the impact that personnel have on the surrounding fauna and vegetation. Some of the activities of the proposed project such as vehicle movement, human movements, illegal hunting, poaching and the collection of firewood pose a risk to the integrity of baseline biodiversity as well as the biological productivity of the site and the immediate proximity. The following mitigations are to be undertaken to minimize further impact on the existing biodiversity:

Fauna

Tsiseb conservancy is known for its rich biodiversity and numerous endemic species. Two ephemeral rivers form part of the Tsiseb conservancy boundaries, the Ugab river on the northern boundary and the Omaruru river flowing along the south-eastern. These two rivers form very important wetlands systems with endemic and endangered flora and fauna, including the desert dwelling elephant and the black rhino. Endemic species are mostly affected since even the slightest disruption to their habitat can result in extinction or put them at high risk of extinction. Increasing threats to indigenous fauna result because of mushrooming mineral prospecting /exploration and human encroachment into faunal habitats, thus impacting on faunal mobility.

Project activities such as earthworks, drilling and excavation done to uncover mineral bearing rock units could result in land degradation, leading to habitat loss. Moreover, the construction of the proposed small scale mine may result in the loss of faunal species and forced migration of these fauna outside of these habitats into surrounding areas. The proponent shall ensure that no animal shall be captured, killed or harmed by any of the employees in any way. Wildlife poaching will strongly be avoided as this is an offence and anyone caught infringing in this regard will face suspension from the project and will be liable for prosecution.

Avifauna

If care is not taken, possible disturbance of birds or nest on sites by employees is expected. Should the employees observe any bird nesting sites for endangered avifauna such as vultures, they should notify Ministry of Environment, Forestry and Tourism.

Flora/ Vegetation

Mineral exploration and mining activities can fragment natural habitats, creating isolated patches of vegetation that are more vulnerable to disturbances. Pollutants such as dust, gaseous emissions and air- borne particulates will be produced in large amount and get deposited on vegetation. Most

of the effects of dust particles on p vegetation include the potential to block and damage the stomata such that photosynthesis and respiration are affected. This will no doubt affect the physiological activities of the plants most especially those around the project site such as in photosynthesis and respiration. The implication of these is that some of the plants may have retarded growth while others may be eliminated.

Mitigation Measures to be enforced: **flora**

- The footprint of the area to be disturbed will be minimized as far as is practically possible.
- Exploration activity must be limited to the pre-identified/ mapped pegmatites within the Project area.
- Remove protected plant species and sensitive fauna before commencing with the development activities and relocate to a less sensitive/disturbed site if possible.
- Should the proponent require clearing, removal and transplantation of any protected plant species services of an appropriately qualified botanist / ecologists must be sought and relevant permissions obtained prior to any such activity being undertaken
- Disturbed areas must be kept to a minimum. Off-road driving should not be allowed and only existing tracks should be used.
- Recommend the planting of local indigenous species of flora as part of the landscaping as these species would require less maintenance than exotic species and have important ecological functions in terms of carbon sequestration from decomposing materials at the site.
- Disturbance of marginal vegetation in the mountains should be limited.
- Where it is clear that certain large species will be destroyed consideration should be given to offering to rescue the individuals involved and relocate them to nearby gardens.
- Transplant removed trees where possible, or plant new trees in lieu of those that have been removed.
- The protected and endemic species should be re-introduced in the area.

Mitigation Measures to be enforced: **fauna**

- Barriers/barricades confining driving trucks must be erected to avoid stray driving and trampling on habitat. Proper demarcation of the exploration area.
- Avoid disturbance on invertebrate on-site and along the gravel road stretch.
- Avoid the creation of multiples roads strips, which could result in the disturbance of breeding sites for various mammals.
- A fauna survey will be conducted to determine the effect of fragmented habitat on game species should the need arise.
- Care will be taken to ensure that no litter is lying around as these may end up being ingested by wild animals
- No workers will be allowed to collect or snare, hunt or otherwise capture any wild animal.
- No domestic animals will be permitted on the exploration site by means of erecting a perimeter fence; small stock should graze at designated areas.
- Birds or Nest sites will not be disturbed by any employee, visitor or contractor.
- If possible, encountered bird kills and nest removal should be registered in a biodiversity data-base and information should be made available to the general public.
- There should be limited movement of heavy-duty machinery and exploration equipment in the area to avoid interference.

Methods for monitoring:

- Regular monitoring of any unusual signs of animal habitat.

Table 14: Shows the qualitative impact assessment for terrestrial biodiversity.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	**M**	**L/M**	**L/M**	**M**	**M**	**M**
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**

Alien invasive plants

Alien invasive plants are prevalent in areas affected by land transformation and anthropogenic disturbance. Mining and exploration activities have potential of introducing invasive species that can compete with native vegetation, leading to decline in biodiversity. The establishment of foreign invasive weed species is frequently encouraged by disruption to the natural environment. There are numerous ways in which invasive species can be introduced unintentionally. Plant or seed material that sticks to car tires, animals, or blow from waste cleared at sites are potential sources of invasive species.

Some of the plant species that could become invasive in the area are listed below:

- *Prosopis glandulosa*
- *Lantana camara*
- *Cyperusesculentus*
- *Opuntia imbricate*
- *Cereus jamacara*
- *Melia azedarach*
- *Harissia martini*

Table 15: Shows the qualitative impact assessment of alien invasive plants.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	**L**	**M**	**M**	**L**	**M**	**L**
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**

Mitigation Measures to be enforced:

- The site manager will ensure that debris is properly disposed.
- Vehicle tires inspections can be carried out although this may not be a practical mitigation measure.
- The proponent should implement an alien plants awareness campaign to educate and sensitize the employees and the local community on the menace of planting alien vegetation in the area.
- Eradicating alien plants by using an Area Management Plan.

- Prevent the introduction of potentially invasive alien ornamental plant species.
- The proponent should adopt and support the implementation of an annual alien plants clearing campaign.

Methods for monitoring:

- Regular monitoring of any unusual signs of alien species.
- The proponent and local community should establish an alien plant task force to ensure that there is no planting of alien plants species in the area.

6.2.4 Land and soil disturbance

Exploration and mining activities such as land clearing, excavations, trenching, drilling and quarrying can potentially result in disturbance of landform and the soil cover in the immediate surroundings of the project site. This could potentially leave the site soils exposed to erosion. This undertaking has the potential of disturbing the structural composition and biological productivity of topsoil and if not taken care of this can lead to land degradation. However, most parts of the project area are covered with grass and shrubs. Plant cover has the potential to prevent wind and water erosion by covering and binding the soil with their roots.

Table 16: Shows the qualitative impact assessment of land and soil disturbance.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	**M**	**M/H**	**M**	**M**	**M/H**	**M**
Mitigated	**L**	**L**	**L**	**L**	**M**	**L**

Mitigation Measures to be enforced:

- The footprint of the area to be disturbed will be minimized as far as is practically possible.
- The overburden, i.e., that layer of soil immediately beneath the topsoil, will be removed and stored separately from the topsoil.

- Where topsoil is pre-stripped, it should be stored for future site rehabilitation activities. Topsoil management should include maintenance of soil integrity in readiness for future use.
- Implementation of soil conservation measures during the project lifetime. Moreover, overburden should be handled more efficiently during exploration works to avoid erosion when subjected to erosional processes.
- Prevent creation of huge piles of waste rocks by performing sequential backfilling.
- Stockpiled topsoil and overburden waste rocks should be used to backfill the trenches, excavations and any disturbed sites on the project.
- The access road to the mining site must be established in consultation with the landowner and usage of existing roads shall be enforced.
- The design, construction, and location of access to main roads will be in accordance with the requirements laid down by the controlling authority.
- Land markings, vehicle tracks, trenches and excavations shall be restored to the original landform and, visual state as much as possible.
- In the case of dual or multiple uses of access roads by other users, arrangements for multiple responsibilities must be made with the other users. If not, the maintenance of access roads will be the responsibility of the proponent.
- Preventative measures such as earth embankments will be put up to prevent erosion will be established where appropriate.
- Pit slopes should be profiled to ensure that they are not subjected to excessive erosion but capable of drainage run-off with minimum risk of scour. A professional mining engineer should be employed to ensure that the slopes created are not endangering the lives and wellbeing of the employees that work directly in the pit.
- If necessary, diversion channels should be constructed ahead of the open cuts as well as above emplacement areas and stockpiles to intercept clean run-off and divert it around disturbed areas into the natural drainage system downstream of the mine.
- All mined areas (where works will take place) will be rehabilitated to control erosion and sedimentation.
- Existing vegetation must be retained as far as possible to minimize erosion.

- Rehabilitation of pits and waste dumps shall be planned and completed on a continuous basis in such a way that the run-off water (if any) will not cause erosion.
- Visual inspections shall be done on a regular basis with regard to the stability of water control structures, erosion and siltation (if required).

6.2.5 Groundwater and surface water contamination

The proposed project activities are associated with a variety of potential groundwater and surface water pollution sources. The main groundwater and surface water contaminants may include chemicals such as heavy metals, organic solvents, hydrocarbons (oil), microbiological contaminants as well as waste water/effluent discharge. Due to the crystalline and metamorphic nature of the targeted lithology on project area, these pollutants are unlikely to pose any negative impacts on the underground water system. However, these contaminants may infiltrate into the ground and pollute the fractured or faulted aquifer on site and with time disperse further groundwater system of the area. Sources of pollution can be categorized into two major types: point source pollution and non-point source pollution. Point source pollution (e.g. leaking mobile toilets and fuel, oil, chemical spillage) is a single identify localized source while non-point source pollution (diffuse sources such as petrochemical pollution) is characterized by multiple discharge point.

Water resources contamination is greatly linked to land and soil contamination. Land contamination is considered contaminated when it contains hazardous materials or oil concentrations above background or naturally occurring levels from anthropogenic activities. When contamination of land is suspected or confirmed during any project phase, the cause of the uncontrolled release should be identified and corrected to avoid further releases and associated adverse impacts. Contaminated lands should be managed to avoid the risk to human health and ecological receptors. The preferred strategy for land de-contamination is to reduce the level of contamination at the site while preventing the human exposure to contamination.

Another source of water contamination is storm water. Storm water includes any surface runoff and flows resulting from precipitation, drainage or other sources. Typically storm water runoff contains suspended sediments, metals, petroleum hydrocarbons, Polycyclic Aromatic Hydrocarbons (PAHs), coliform, etc. Rapid runoff, even of uncontaminated storm water, also degrades the quality of the receiving water by eroding stream beds and banks. However, it should be noted that the scale and footprint of the activities where potential sources of pollution is likely to occur is relatively small. Therefore, the impact will be moderately low, however groundwater is an important resource and must be protected. The proponent has set out various measures to ensure the protection of groundwater quality.

Table 17: Shows the qualitative impact assessment of surface and groundwater.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	**M/H**	**M**	**M/L**	**M**	**M**	**M**
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**

Mitigation Measures to be enforced:

- Non-toxic and biodegradable drilling lubricant will be used
- No dumping of waste products of any kind in or in close proximity to surface water bodies and possible recharge areas for groundwater.
- Wastewater should not be discharged directly into the environment
- Waste water / contaminated water should be contained for proper disposal.
- Drip trays must be placed underneath vehicles when not in use to contain all oil that might be leaking from these vehicles.
- Project machines and equipment should be equipped with drip trays to contain possible oil spills when operated on site.
- In all areas where there is storage of hazardous substances (i.e. hydrocarbons), there will be containment of spillages on impermeable floors and bund walls that can contain 110% of the volume of hazardous substances.
- All refueling and any maintenance of vehicles will take place on impermeable surfaces.

- Spill kits will be readily available on site. Employees and/or contractors will be trained to use the spill kits to enable containment and remediation of pollution incidents.
- Environmental awareness for contractor and employees to be included during inductions
- Accessibility to spill prevention and response equipment, such equipment should be visible and accessible to all employees at any given time.
- Avail a spill response action plan in case of accident and any spills will be cleaned up immediately to the satisfaction of the Environmental Manager by removing the spillage together with the polluted soil and by disposing of them at a recognized facility as stipulated in the spill response action plan.
- Designated waste collection tanks should be available on-site and away from waterways, and such isolation should be maintained at all times.

6.2.6 Fire and explosion hazard

All fuel storage and handling facilities as well as fire precautions and fire control measures at the site must comply with strict safety distances as prescribed by SANS 10089. SANS 10089 is adopted by the Ministry of Mines and Energy as the national standard. Hydrocarbons are volatile under certain conditions and their vapors in specific concentrations are flammable. If precautions are not taken to prevent their ignition, fire and subsequent safety risks may arise. Therefore, a holistic fire protection and prevention plan is needed. It must further be assured that sufficient water is available for firefighting purposes. It is important to recognize that a responsive fire prevention plan does not solely include the availability of firefighting equipment, but more importantly, it involves premeditated measures and activities to timeously prevent, curb and avoid conditions that may result in fires. Therefore, an integrated fire prevention plan should be drafted before drilling. In cases where a fire or an explosion takes place on site, the following mitigation measures should be taken to ensure safety of the people and reduce damage to properties.

Mitigation Measures to be enforced

- Sufficient fire extinguishers will be installed on every project vehicle.
- A designated area needs to be identified as an assembly area where personnel meet in case of such incident. All employees, contractors and visitors should be made aware of this area through inductions conducted before entering the site.
- Personnel will be trained on how to use fire extinguishers. A fire and explosive management policy and procedures document for the site should be drafted and review on a regular basis and every employee should know the content of this document so that they can act accordingly when a fire or an explosion breaks out.
- Refresher courses on the content of the fire and management policy and procedure document should be given on a regular basis to ensure that the employees aware and are competent in reacting to such incidents.
- Sufficient fire extinguishers with sufficient length of hosepipes will be made available on site for fire protection.

Table 18: Shows the qualitative impact assessment of fire and explosion hazards.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	**L**	**L**	**L**	**M**	**M**	**L**
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**

6.2.7 Hazardous waste and material management

Hazardous material can be classified according to the hazard as: explosives, compressed gases, including toxic or flammable gases; flammable liquids; flammable solids; oxidizing substances; toxic materials and corrosive substances. These substances are regarded by the Hazardous Substance Ordinance (No. 14 of 1974) as those substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances.

When a hazardous material is no longer usable for its original purpose and is intended for disposal, but still has hazardous properties, it is considered a hazardous waste. In the proposed project, hazardous waste will be collected and sent for treatment before disposal. The total volume of these hazardous materials and chemicals on site is never likely to be substantial and thus the overall risks during all project phases are not likely to be high. The overall objective of hazardous materials management is to avoid or, when avoidance is not feasible, minimize uncontrolled releases of hazardous materials or accidents (including explosion and fire) during their production, handling, storage and use, this objective can be achieved by:

- ✓ Establishing hazardous materials management priorities based on hazard analysis of risky operations identified through Social and Environmental Assessment;
- ✓ Where practicable, avoiding or minimizing the use of hazardous materials
- ✓ Preventing uncontrolled releases of hazardous materials to the environment or uncontrolled reactions that might result in fire or explosion;
- ✓ Using engineering controls (containment, automatic alarms, and shut-off systems) commensurate with the nature of hazard;
- ✓ Implementing management controls (procedures, inspections, communications, training, and drills) to address residual risks that have not been prevented or controlled through engineering measures.

Table 19: Shows the qualitative impacts assessment of hazardous waste and materials.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	**M**	**L**	**L**	**M**	**L**	**L**
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**

Mitigation Measures to be enforced

- All chemicals and other hazardous substances must be stored and maintained in accordance with the Hazardous Substances Ordinance (No. 14 of 1974), with all relevant licences and permits to be obtained where applicable.

- Given the potential harm to human health during handling and use of any of hazardous substances it is essential that all staff be trained with regards to the proper handling of these substances as well as First Aid in the case of spillage or intoxication.
- Storage areas for all substances should be bunded and capable to hold 120% of the total volume of a given substance stored on site.
- Job safety analysis to identify specific potential occupational hazards and industrial hygiene surveys, as appropriate, to monitor and verify chemical exposure levels, and compare with applicable occupational exposure standards.
- Hazard communication and training programs to prepare workers to recognize and respond to workplace chemical hazards. Programs should include aspects of hazard identification, safe operating and materials handling procedures, safe work practices, basic emergency procedures, and special hazards unique to their jobs Training should incorporate information from Material Safety Data Sheets for hazardous materials being handled. MSDSs should be readily accessible to employees in their local language.
- Provision of suitable personal protection equipment (PPE) (footwear, masks, protective clothing and goggles in appropriate areas), emergency eyewash and shower stations, ventilation systems, and sanitary facilities.
- Monitoring and record-keeping activities, including audit procedures designed to verify and record the effectiveness of prevention and control of exposure to occupational hazards, and maintaining accident and incident investigation reports on file for a period of at least five years.

6.2.8 Solid waste management

Exploration and mining activities generate a range of solid waste materials that can have significant environmental impacts if not properly managed. These waste materials can include waste rock, tailings, mine water and domestic waste generated by project personnel on site. Waste rock is the material that must be removed to access ore and can contain minerals and metals that can leach into the environment over time. Tailings are the finely ground rock and mineral slury left over

after processing ore, and can contain residual chemicals and metals that can contaminate soil and water if not properly contained. Proper solid waste management will involve full commitment by all the employees and contractors of the site. Given the remote location and the land-use, the dumping of domestic waste within the project area could prove hazardous to wildlife and livestock, as well as impede agricultural production. Domestic waste will be temporarily handled and stored onsite before being removed for final disposal at permitted waste disposal facilities. A registered Waste Management Company would be contracted to remove all hazardous waste from the site. Furthermore, ablution facilities will use chemical toilets and/or sealed septic tanks and the sewerage taken to the Omaruru town periodically.

Mitigation Measures to be enforced:

- Waste generated will be handled in accordance with the contract signed with the landowner. This shall include: waste should be separated and recycled / re-used where possible. Where waste management procedures do not exist, a procedure should be developed.
- The collected solid waste should be disposed at registered and approved disposal site agreed upon by both Municipality and the proponent.
- Mandatory waste segregated right at the source of waste generation. The collection of segregated waste would be made from the site and amenity areas.
- The project site should be equipped with separate waste bins for general/domestic waste and hazardous waste.
- Employees and contractors will be shown the importance of correct waste disposal as well as waste minimization and recycling.
- Place priority on waste reduction, waste reuse and waste recycling, in that order.
- Sufficient waste storage bins on site and regular emptying of the waste storage bins.
- Strictly, no burning of waste on the site or at the disposal site, as it possesses environmental and public health impacts.
- The proponent should engage with local communities to ensure that their waste management practices are transparent and that community concern is considered.

Table 20: Shows qualitative impacts assessment for solid waste management

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	**L**	**H**	**L**	**M**	**M**	**M**
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**

6.2.9 Heritage and archaeological impacts

The proposed prospecting and exploration area contain some archaeological significances, therefore, potential damage to archaeological sites may be impacted through unintentional destruction or damages are a result of vehicle tracks, footprints and actions of contractors, employees. This may include the excavation of subsurface graves or other archaeological objects. Despite the close proximity of the project area to the Brandberg Mountains, which contains rock paintings of heritage concern, currently, there is no information provided about known archaeological heritage remains and sites within the project site. Therefore, this impact can be rated medium to low, if there are no mitigation measures in place. All archaeological remains are protected under the National Heritage Act (2004) and will not be destroyed, disturbed, or removed. The Act also requires that any new discoveries archaeological significant objects on the site should not be disturbed, but are to be reported to the project Environmental officer or National Heritage Council offices.

Table 21: Shows heritage impact assessment.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	**M/H**	**M**	**L/M**	**M**	**M/H**	**M/H**
Mitigated	**L**	**L**	**L**	**L**	**M**	**L**

Mitigation Measures to be enforced

- Adhere to practical guidelines provided by an archeologist on site to reduce archaeological impacts.
- The site location where archaeological features might be found should be marked with flag tape and the GPS coordinates should be recorded.
- No exploration activities should be conducted near these recorded areas' 1.5 km buffer zones.
- Notices/ information boards information will be placed on site.
- The proponent and contractors should be made aware of the provisions of section 55 of the National Heritage act.
- Training employees regarding the protection of these sites in event significant heritage and cultural features are discovered while carrying out exploration activities.
- Obtain appropriate clearance or approval from the competent authority.
- In the event of such finds, all activities must stop and the project management or contractors should notify the National Heritage Council of Namibia immediately.
- The proponent should engage an archaeologist to survey the project site(s) before project commencement.
- Consultation with indigenous groups and local communities to understand the cultural heritage values associated with the land and develop appropriate management plans to mitigate impacts.

6.2.10 Visual impacts

Exploration and mining activities leave scars on the landscape and change the aesthetic appeal of the overall area resulting in negative visual impacts. Landscape alteration by off-road driving is a major concern, particularly with regard to uncontrolled use of 4x4 vehicles and construction of site access roads during exploration. Another process linked to landscape alteration is the removal of vegetation, topsoil and other natural features, resulting in significant changes to the landscape. During open pit mine construction and operation, the main anthropogenic impact from the implementation of the project will be on the landscape component. Installation of infrastructure,

installation of mine equipment, stockpiles, waste facilities, waste rock dumps and production facilities can also contribute to visual pollution which can detract from the natural beauty of the surrounding landscape. Even though vegetation and rocky outcrops will screen some receptors the mining pit will be discernible from a distance.

The project is located close to the C35 road that is not only used by local travelers and local holiday makers but tourists too. Tourists are regarded as visual receptors of high sensitivity since their attention is focused on the landscape which they utilize for visual aesthetic appeal. Motorists are generally classified as visual receptors of low sensitivity due to their momentarily dynamic view and experience of the proposed development. These scars can contrast the surrounding landscape, and this can potentially cause a visual nuisance to tourists since the project area is near tourists' routes. The proposed closure process will involve a set of activities whose objective will be to improve the environmental and aesthetic value of the affected landscape.

Table 22: Shows visual impacts impact evaluation.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	**L/M**	**M**	**M**	**M/H**	**M/H**	**H**
Mitigated	**L**	**L**	**L**	**L**	**L**	**L**

Mitigation Measures to be enforced

- Screening and vegetation can be used to mitigate the visual impact of exploration and mining activities.
- The design, construction, and location of access to main roads will be in accordance with the requirements laid down by the controlling authority.
- The proponent should carry out progressive working and restoration/ rehabilitation over the shortest timescale possible, to avoid excessive areas of disturbance.
- When exploration and mining activities cease, restore the visual sense of the area to its natural state for instance all excavations, pits are to be backfilled and drillings holes to be capped when no longer in use.

- Care must be taken to ensure that all rehabilitated areas are similar to the immediate environment in terms of visual character, vegetation cover and topography and any negative visual impacts will be rectified to the satisfaction of the environmental consultant.
- Minimize disturbance to topsoil, keep existing trees, and introduce indigenous plants for re-vegetation.
- All vehicles, equipment and machinery that do not need to be parked within direct sight of the roads, visible to travelers.
- Overburden will be placed back into excavation as part of the rehabilitation program.
- Restrict off road vehicles and equipment to designated areas.
- Maintain the small shrubs found on the site and only remove vegetation that has an impact on the development.
- Land markings, vehicle tracks, and excavations shall be restored to the original landform and, visual state as much as possible.
- In the case of dual or multiple uses of access roads by other users, arrangements for multiple responsibilities must be made with the other users. If not, the maintenance of access roads will be the responsibility of the holder of the Mining Claims/proponent.
- The access road to exploration sites must be established in consultation with the landowner and usage of existing roads shall be enforced.

6.2.11 Occupational health, safety and security

Exploration and mining activities are associated with serious health and safety risks to workers on site. The project site safety of all personnel will be the proponent's responsibility and should be adhered to as per the requirements of the Labour act (No11 of 2007) and the Public Health act (No.36 of 1919). Overall occupational health, safety and security are crucial aspects of mineral exploration and mining activities. Proper planning, training, and implementation of safety protocols can help prevent accidents, injuries, and illnesses, ensuring safe and secure work environment for all involved. The risk of an accident will be high if the dangerous parts of equipment/ machineries are exposed and operators are poorly trained or supervised. This increases

the possibility of injuries, and the responsible manager must ensure that all staff members are briefed about the potential risks of injuries on site. Occupational exposures are normally related to the dermal contact with fuels and inhalation of fuel vapors during handling of such products. The manager is further advised to ensure that adequate emergency facilities, including first aid kits, are available on site. All Health and Safety standards specified in the Labour Act (No.11 of 2007) should be complied with.

Mitigation Measures to be enforced:

- Ensure that all project personnel are properly trained depending on the nature of their work. They should be properly trained to ensure they fully understand the risks involved and how to safely operate equipment and machinery.
- Provide medical facilities and emergency response on site. In the event of an accident or injury, a first aid kit and a properly trained person to apply first aid should be available when necessary.
- Heavy vehicle, equipment and fuel storage site should be properly secured and appropriate warning signage placed where possible.
- Drilled boreholes that will no longer be used or to be used later after being drilled should be properly marked for visibility and be capped/closed off.
- Clearly demarcate the exploration (area of current activities e.g. drilling site) site boundaries along with signage of "no unauthorized access".
- Clearly demarcate dangerous areas and no-go areas on site.
- Implement site security to prevent unauthorized access to the mining site and protect workers and equipment from theft and damage.
- Staff and visitors to the exploration site must be fully aware of all health and safety measures and emergency procedures.
- The contractor must comply with all applicable occupational health and safety requirements.
- The workforce should be provided with all necessary Personal Protective Equipment where appropriate.

- The contractor must comply with all applicable occupational health and safety requirements.
- All vehicular equipment operators must have valid licences for that particular vehicle class.
- Implement the use of alcohol detectors.
- A wellness program should be initiated to raise awareness on health issues, especially the impact of sexually transmitted diseases, hepatitis, etc. Encourage HIV counseling and testing and facilitate access to Antiretroviral (ARV) medication.
- Prevent diseases spread by biological agents by providing proper toilets and cleaning up facilities, proper waste removal, running water and detergent on site.

Table 23: Shows qualitative impacts assessment for occupational health, safety and security.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	**M**	**M**	**M**	**M**	**M**	**M**
Mitigated	**L**	**L/M**	**L**	**L**	**L/M**	**L**

6.2.12 Vehicular traffic use and safety

Traffic volume will increase on district roads including heavy vehicles such as truck and drilling equipment, as the project would need a delivery of supplies and services on site. These service and supplies will include but not limited to water, waste removal, procurement of exploration machinery, equipment, and others. Heavy vehicles will be frequenting the area to and from exploration sites on the Mining Claims; these can cause significant damage to roads, resulting in increased maintenance costs and potential safety hazards.

Table 24: Shows qualitative impacts assessment for road use (vehicular traffic).

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Pre-mitigation	**M**	**M/H**	**M**	**M**	**M/H**	**M**
Post mitigation	**L/M**	**L/M**	**L**	**L**	**L/M**	**L**

- The proponent should be responsible for maintaining the roads they use to transport materials and equipment. This includes repairing any damage caused by their vehicles and regularly maintain road surfaces to prevent accidents and minimize wear and tear.
- The proponent should explore alternative transportation method such as rail to minimize the amount of heavy vehicle on local roads.
- Drivers of all vehicles should be in possession of valid and appropriate driving licenses and adhere to the road safety rules.
- The transportation of exploration materials, equipment and machinery should be limited, to reduce pressure on local roads.
- The heavy truck loads should comply with the maximum allowed speed limit for respective vehicles while transporting materials and equipment/machinery on the public and access roads (40km/h).
- The Proponent should ensure that the site access roads are well equipped with temporary road signs conditions to cater for vehicles travelling to and from site throughout the project's life cycle.
- Project vehicles should be in a road worthy condition and serviced regularly to avoid accidents owing to mechanical faults.
- Vehicle drivers should only make use of designated site access roads provided and as agreed.
- Vehicle's drivers should not be allowed to operate vehicles while under the influence of alcohol.
- No heavy trucks or project related vehicles should be parked outside the project site boundary or demarcated areas for such purpose.
- Deliveries to and from the site should be carefully planned in order to manage traffic flow. It is best to do this on weekdays between the hours of 8am and 5pm.
- The site access road(s) should be upgraded to an unacceptable standard to be able to accommodate project related vehicles as well as farm vehicles.

6.3 Socio-economic impacts

6.3.1 Positive Impacts

1. **Employment Creation**

The project has the potential to create socio-economic benefits through employment creation and economic contributions. The benefits include employment opportunities, skills and development training and indirect capital injection into businesses in Uis and overall Erongo Region. The project has potential to create employment, particularly for unskilled and semi-skilled labour. Local recruitment will be encouraged during the lifespan of the project by the proponent with a target of at least 65% locals. This operation will contribute to the alleviation of unemployment which is severe due to recent retrenchments caused by Covid-19 economic recession. Employment on the new project will improve the livelihood of people and contribute to the local economy growth.

Enhancement measures:

- The proponent will introduce training programs (bursary schemes, on the job training etc) in order to boost the supply of local skills
- It is proposed that local people community members should be considered first when it comes to employment in order to promote social development and growth. Especially where no specific skills are required.
- Gender equality considerations during recruitment process.
- Employment preference will be afforded to previously disadvantaged Namibians.

2. Generation of revenue

According to the law of Namibia, operating companies are to pay taxes. The proponent will pay tax to the government hence this will benefit the nation at large given that money generated from taxes is diverted to the public by the government.

Enhancement measures:

- Continuous payment of taxes due as regulated in the Namibian laws.

6.3.2 Negative Social impacts

6.3.2.1 Disturbance of the grazing area

Livestock farming (cattle, goat and sheep) is the major agricultural activity taking place in the project vicinity, because the landscape is unsuitable for crop farming due to its aridity and poor soils. Extended exploration work may pose a threat to grazing pastures for local livestock farming. However, due to low spatial scale of the proposed project, the impact is minimal.

Table 25: Shows qualitative impacts assessment for grazing area.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	**M**	**M**	**M**	**L**	**L/M**	**M**
Mitigated	**L**	**L/M**	**L**	**L**	**L**	**L**

- Vegetation found on the site, but not on targeted exploration areas should not be removed but left to preserve biodiversity and grazing land.
- Agree on relevant compensation with landowners where land used for grazing purposes is impacted.
- Workers should refrain from driving off road and creating unnecessary tracks that may contribute to soil erosion and loss of grazing land.
- Any unnecessary removal or destruction grazing land, due to exploration activities should be avoided.
- Environmental awareness on the importance of grazing land for local livestock should be provided to the workers.

6.3.2.2 Socio-economic concerns

- As the movement of staff and contractors to and from the area increases, the risk of spread of HIV/AIDS and other STDs increases;

- Increased influx of jobseekers to the area as people come in search of job opportunities during the operational phase of the project. This could lead to potential increase in the unemployed people in the area and the establishment/growth in informal settlements which could exacerbate security issues due to increased crime rates.
- Impacts on the size and structure of the population. Increased informal settlement and associated problems;
- Negative impact on the health and safety of the surrounding community and workers
- Impact from loss of grazing for domestic livestock in "exclusive use zone"
- Impacts on cultural and spiritual values.
- Demographic factors: Attraction of additional population that cannot benefit from the project.
- Perception of Health and Safety risks associated with exploration.

Mitigation Measures to be enforced:

- The population change can be mitigated by employing people from the local community and encouraging the contractors to employ local individuals.
- Safeguard against the development of illegal settlements around the project area.
- The perception of risks will be mitigated by putting up safety signs wherever possible and ensuring that all employees and visitors to the site undergo a safety induction course.

Methods for monitoring:

- Public meetings will be held by the proponent whenever necessary.

Table 26: Shows the qualitative impacts assessment for socio economic.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	**M**	**L**	**M**	**M**	**M**	**M**
Mitigated	**M**	**L**	**M**	**M**	**L**	**L**

Actions/Mitigation measures:

- Honour agreements set out in the site-access contracts
- Consult and provide feedback regarding activities on the individual properties
- Provide contact details to a designated person, who will serve as liaison between landowners and the exploration teams
- Provide appropriate toilet facilities for the exploration workers on the site or agree with landowner to use certain facilities on the farm.

Municipal Service Impacts

Proposed exploration project will require provision of the following services:

- ❖ Potable water for domestic purposes
- ❖ Temporary toilets
- ❖ Solid waste management
- ❖ Bulk water and power supply

7. Environmental Management Plan (EMP)

7.1 Purpose of Environmental Management Plan (EMP)

Environmental management plan (EMP) serves as a tool that can ensure sustainable mineral exploration, as it contains measures aimed at protecting, rehabilitating and restoring the environment to its productive state before, during and after exploration/mining. It serves as a risk strategy that contains logical framework, monitoring programs, mitigation measures and management control. The aim of an Environmental Management plan (EMP) is to develop procedures to implement project's mitigation measures and monitoring requirements. It is deemed as a risk strategy that contains logical framework and management control strategies to minimize potential environmental impacts to significant level. The EMP ensures the community that the environmental management of the project is acceptable. As well as stipulating the roles and responsibilities of persons involved in the project. An EMP ensures that legal and policy requirements are well known and understood by the proponent, its employees and contractors and will be strictly enforced by its management team. Issues and concerns identified in the EIA will form a set of environmental specifications that will be implemented on site.

The control measures described in this EMP have been developed following consideration of the findings of the Environmental Impact Study (EIS), which concluded that a number of environmental values would be impacted by the proposed exploration activities. The intent of the proposed control measures is to ensure that project related activities will not negatively affect the environment or the health, welfare and amenity of people and land uses by meeting or exceeding statutory requirements.

Overall objectives of this EMP are:

The following overall environmental objectives have been set for proposed mineral prospecting and exploration project on Mining Claims (MCs: 74090 to 74098):

- To develop measures that will mitigate the adverse impacts of the proposed project

- Ensuring compliance with regulatory authority stipulations and guidelines
- To formulate measures to enhance the value of environmental components where possible.
- To formulate measures to protect environmental resources as well enhance the value of environmental components where possible.
- Responding to unforeseen events and providing feedback for continual improvement in environmental performance.

Project Phases Covered in the EMP

The following phases are addressed in this EMP:

1. **Planning phase** - This is the stage of the proposed project during which the Proponent prepare all the administrative and technical requirements needed for the actual works on the ground. The planning includes things like obtaining the necessary permitting and authorization from relevant national and local stakeholders (such as affected communities, traditional authorities, etc.), facilitating the recruitment and procurement processes, etc., in preparation of the exploration activities (and site maintenance).
2. **Prospecting and Exploration phase -** This is the phase where the proponent will be carrying out exploration of the targeted mineral commodities in the first six (6) months. It is also the phase during which maintenance of the area, equipment and machinery is done by the Proponent. This is also the phase when mitigation measures are implemented, and the monitoring plan put in place.
3. **Mining phase**- Upon completion of a resource estimate with high level of indicated and measured mineral resources, the economic viability of the mineral resource will be assessed if it is economic to extract the resource, and then the exploration project will progress to mining. This is also the phase during which the worksites, project infrastructure, vehicles, equipment, and machinery will be maintained by the Proponent, as deemed necessary.
4. **Decommissioning, site closure and rehabilitation:**

-This is the phase when exploration activities cease as a result of either poor exploration results or loss of market demand for the targeted commodity. Rehabilitation measures will have to put in place during exploration and before decommissioning, or

- The closure period will commence once the last planned blocks of the targeted commodity ore have been extracted from the pit, at the end of the active mining period.

7.1.1 Legal Implications and obligations under the EMP

The EMP will be sent to the Directorate of Environmental Affairs (DEA) of the Ministry of Environment, Forestry and Tourism (MEFT) for approval. Once the DEA is satisfied with the contents of the EMP, they will issue an Environmental Clearance Certificate (ECC) to the Proponent to commence with the exploration in the proposed area. The ECC is linked with the recommendations of the Environmental Management Plan. Once the ECC is issued, the EMP becomes a legally binding document and each role-player including contractors and sub-contractors are made responsible to implement the relevant sections of the EMP and is required to abide by the conditions stipulated in this document. This Environmental Management Plan (EMP) document is designed to meet legal requirements and avoid or minimize the impacts associated with the implementation of the proposed mineral prospecting and exploration on Mining Claims (MCs: 74090 to 74098).

7.1.2 Environmental Management Principles

The proponent will ensure that all parties involved in the project uphold the following broad aims:

1. All persons will be required to conduct all their activities in a manner that is environmentally and socially responsible. This includes all consultants, contractors, and sub-contractors, transport drivers, guests and anyone entering the exploration area in connection with the exploration project.

2. Health, Safety and Social Well Being

- ❖ Safeguard the health and safety of project personnel and the public against potential impacts of the project. This includes issues of road safety, precautions against natural dangers on site, and radiation hazards; and,
- ❖ Promote good relationships with the local authorities and their staff.

3. Biophysical Environment

- ❖ Wise use and conservation of environmental resources, giving due consideration to the use of resources by present and future generations;
- ❖ Prevent or minimize environmental impacts;
- ❖ Prevent air, water, and soil pollution, Biodiversity conservation and due respect for the purpose and sanctity of the area.

To achieve these aims, the following principles need to be upheld.

Commitment and Accountability:

The proponent's senior executives and line managers will be held responsible and accountable for: Health and safety of site personnel while on duty, including while travelling to and from site in company vehicles and environmental impacts caused by exploration activities or by personnel engaged in the exploration activities, including any recreational activities carried out by personnel in the area.

Competence

The proponent will ensure a competent work force through appropriate selection, training, and awareness in all safety, health and environmental matters.

Risk Assessment, Prevention and Control

Identify, assess and prioritize potential environmental risks. Prevent or minimize priority risks through careful planning and design, allocation of financial resources, management and workplace procedures. Intervene promptly in the event of adverse impacts arising.

Performance and Evaluation

Set appropriate objectives and performance indicators. Comply with all laws, regulations, policies and the environmental specifications. Implement regular monitoring and reporting of compliance with these requirements.

Stakeholder Consultation

Create and maintain opportunities for constructive consultations with employees, authorities, other interested or affected parties. Seek to achieve open exchange of information and mutual understanding in matters of common concern.

Continual Improvement

Through continual evaluation, feedbacks, and innovation, seek to improve performance regarding social health and well-being and environmental management throughout the lifespan of the exploration project.

Financial Provisions for exploration

In line with Namibia's environmental rehabilitation policy, the proponent shall make the necessary financial and technical provision for progressive rehabilitation and post-exploration/mining activities should be made in compliance with the EMP.

7.2 Organization plan: Roles and responsibilities

The environmental aspects which may be affected by the proposed project have been categorized into negative and positive impacts as an extension of the preceding sections. This section summarizes the objectives, indicators to be observed, schedules be adhered to and roles and

responsibilities of various stakeholders to the EMP.

Table 27: Roles and responsibilities of various stakeholders to the EMP.

Role	Responsibilities and duties
Proponent	– Responsible for the management and implementation of the EMP – Ensure environmental policies are communicated to all personnel throughout the proposed project and that employees understand the guidelines of the EMP – Responsible for providing the resources required to complete the project tasks – Appoint a safety health and environment manager and supporting officers, and – Ensure all workers are inducted on safety measures.
Safety Health and Environment management	– Oversee safety health and environment related activities – Monitor daily operations and ensure adherence by personnel to the EMP – Maintain the community issues and concerns register and keep records of complaints, and – Maintain an up-to-date register of employees who have completed site induction. – Receive, recording and responding to complaints – Ensure adequate resources are available for the implementation of the EMP – Ensure safe and environmentally sound operations, and – Responsible for the management, maintenance, and revisions of this EMP
Foreman on duty	– Ensure that all contract workers, sub-contractors and visitors to the site are aware of the requirements of this EMP, relevant to their roles and always adhere to this EMP – Report any non-compliance or accidents to the Safety Health and Environment Manager.
Employees	– Adhere to measures set out in the EMP – Ensure they have undertaken a site induction, and – Report any operations or conditions which deviate from the EMP as well as any non-compliant issues or accidents to the environmental manager

The table above is summarized below, with the following parties to aid in overseeing that the overall objective of this document is met;

- Management Committee
- Safety Health and Environment Manager
- Safety and Health Officer
- Environmental Officer
- Foreman on duty
- Personnel on duty/ employees

The following table emphasizes the role of each officer in the different management plans discussed in the previous section.

Table 28: Roles and responsibilities of various stakeholders, environmental indicators and objectives.

Objectives	Indicators	Responsibility
To avoid any form of hydrocarbon spills on and around the exploration site	No hydrocarbon spillage or/and remnants of hydrocarbon spillage shall be visible round the project site	SF,PS, ENC
To avoid any form of liter be it paper, metal, plastic and human waste on and around the exploration site	No litter or/and remnants of liter shall be visible around the project site	SF,PS, ENC
To minimize land and soil disturbance	Driving tracks and excavation shall be restricted and only be visible within the project site.	SM, SF, ENC
To protect and conserve fauna and flora within the project area	Minimum levels of habitat disturbance	SM,SF, ENC
To minimize dust generation on site and atmospheric pollution	Emissions/generation particulate content of the dust around the site and gravel roads shall not exceed maximum allowable concentration that may affect human being and animals	SM,SF, ENC
To ensure compliance with statutory requirements	Assurance measures shall be put in place and Periodic inspections aimed at corrective action undertaken, recorded and documented	EC, PP, ENC

Table 29: Implementation of the objectives should be adhered to as indicated in the table.

Objectives	Indicators	Responsibility
To avoid any form of hydrocarbon spills on and around the mining site	No hydrocarbon spillage or/and remnants of hydrocarbon spillage shall be visible around the project site	Personnel on duty, Foreman on duty
To avoid any form of liter be it paper, metal, plastic and human waste on and around the mining site	No litter or/and remnants of liter shall be visible around the project site	All employees, Environmental Officer, safety, Health and Environment Manager.

To minimize land and soil disturbance	Driving tracks and excavation shall be restricted and only be visible within the project site.	Personnel on duty, Foreman on duty and Environmental Officer.
To protect and conserve fauna and flora within the project area	Minimum levels of habitat disturbance	Safety, Health and Environment Manager, Environmental Officer and personnel on duty
To minimize dust generation on site and atmospheric pollution	Emissions/generation particulate content of the dust around the site and gravel roads shall not exceed maximum allowable concentration that may affect human being and animals	Foreman on duty, Environmental Officer and Safety Health and Environment Manager.
To ensure compliance with statutory requirements	Assurance measures shall be put in place and Periodic inspections aimed at corrective action undertaken, recorded and documented	Environmental Manager, Safety Health and Environment Manager.

Mitigation measures to be implemented during the phases of construction, operation, closure, and decommissioning are listed in the following tables.

Table 30: Summary of environmental impacts, mitigation measures and monitoring plan for all project phases.

Construction phase			
Environmental impacts	**Proposed mitigation measures**	**Responsibility**	**Key Performance Indicator (KPI)**
Air pollution: Dust generation Fumes emission	• Regular maintenance of vehicles and equipment. • Brief workers and contractors. • Control speed and operation of project vehicles. • Regular maintenance of vehicles, drill and excavating/blasting equipment and heavy machineries to ensure efficiency and so reduce dust generation. • Provide workers with dust masks, eye protective glasses and other respiratory personal protective equipment PPE) accessories should be provided to the workers on site.	Personnel on duty, Foreman on duty and Environmental Officer	• No complaints from the public about vehicle emissions and dust generation. • Visible efforts to curb dust
Noise pollution	• All noise should be kept within reasonable levels. • Employees and neighbors should be notified of any scheduled unusual noise. • Regular maintenance of vehicles, equipment and heavy machinery. • Workers should be provided with personal hearing protection if working in a noisy environment. • Project activities should be restricted to between 8am and 5pm.	Foreman on duty, Environmental Officer, Safety Health and Environment Manager.	• No complaints from residents about excessive noise • Few to no cased recorded in the complaint's logbook

Soils and water resources pollution	• Ensure employees receive basic Spill Prevention, Control, and Countermeasure (SPCC) Plan training • Exploration and mining site areas where hydrocarbons will be utilized, the surface should be covered with an impermeable plastic liner (e.g. an HDPE liner), • Project machines and equipment should be equipped with drip trays to contain possible oil spills • All wastewater and hydrocarbon substances should be contained in designated containers on site and later disposed of at nearby approved waste site(s). • Vehicles and equipment should be well maintained to prevent oil leaks. • Contactor should have a sealed designated area where maintenance is carried out to prevent percolation of contaminants.	Personnel on duty, Foreman on duty Environmental Officer and Safety Health and Environment Manager	• No complaints of pollutants on the soils and eventually in the water due to exploration and mining activities. • No visible oil spills on the ground or contaminated/polluted spots • Waste containers • Non-permeable material to cover the ground surface where hydrocarbons and potential pollutants are utilized. • Complaints logbooks
Solid waste	• Littering should be discouraged by having strategically placed bins and refuse skips on site. • Recycling plastic, paper and cans should be encouraged on site • The bins should be emptied on a regular basis by the proponent or an independent contractor. • The site should have containers with bulk storage facilities at convenient points to prevent littering.	Personnel on duty, Environmental Officer and Safety Health and Environment Manager	• Amount of waste on site. • Availability of dust bins, waste collection point, • Presence of dust bins/waste collection points
First aid	• A well-stocked first aid kit shall be maintained by qualified personnel.	Safety Health and Environment Manager, Safety and Health Officer.	• Contents of the first aid kits.

Visual	• Environmental considerations will be adhered to at all times before clearing roads and excavations • Implementation of continuous rehabilitation program. • Carrying out of progressive working and restoration/rehabilitation over the shortest timescale possible, to avoid excessive area of disturbance	Safety Health and Environment Manager Environmental officer Exploration/Mining Manager	• Employees to be trained on how to minimize visual impacts • No major contribution to the visual impact in the area. • No complaints from the locals regarding major eyesore due to unmanaged site restoration
Archaeological sites	• Buffer zones will be created around the sites. • Adhere to practical guidelines provided by the responsible archaeologist to reduce archaeological impacts of quarrying activities. • All archaeological sites to be identified and protected before development commences.	All personnel on duty, Environmental officer, Safety Health and Environment Manager	• Register of all archaeological sites identified.
Occupational health and safety	• Provide personal protective equipment, train workers on personal safety, and how to handle equipment and machines. • A well-stocked first shall be maintained by qualified personnel. • Report any accidents/ incidences and treat and compensate affected workers. • Provide sufficient and suitable sanitary conveniences which should be kept clean.	Safety and Health Officer, Safety Health and Environment Manager	• Workers using personal protective equipment. • Availability of a well-stocked first aid box. • Clean sanitary facilities.
Fauna	• Sensitive habitat areas such as the river and tunnel outcrops will be avoided wherever possible. • A fauna survey will be conducted to determine the effect of fragmented habitat to game species should the need arise.	Personnel on duty, Environmental Officer, Safety Health and Environment Manager	• Incident reports of illegal hunting of wildlife by the crew. • Regular monitoring of unusual signs of animal habitat throughout

	• Noise levels should be kept at minimum in order to reduce interfere with the normal survival of wildlife especially those that use sound to navigate, to find food, mate or avoid predators. • Environmental awareness on the importance of biodiversity preservation should be provided to the workers. • No food stuff shall be left lying around as this will attract animals which may result in human-animal conflict. • Site personnel should refrain from killing/poaching, capturing, snaring or intentionally disturbing any animals that may be found on and around the exploration and mining sites**.**		exploration and mining phases
Alien invasive plants	• Ensure vehicles and equipment are clean of invasive plants and seeds. • Eradicating alien plants using area management plan. • Contain neighboring infestations and restrict movement of invasive plants from adjacent lands • Educating everyone on site on types of invasive plants.	Environmental Officer, Environmental Manager	• Regular monitoring of any signs of alien plants.
Impact on vegetation	• Environmental considerations will be adhered to at all times before clearing roads, trenching and excavating. • The movement of vehicles on riverbeds, rocky outcrops and vegetation sensitive area will be avoided. • The movement of vehicles will be restricted to certain tracks only. • Vegetation found on the site, but not in the targeted	Environmental Officer, Safety Health and Environment Manager	• Warning signs on site • Restored vegetation

	mining areas should not be removed, but preserved. • Movement of vehicle and machinery should be restricted to existing roads and tracks to prevent unnecessary damage to the vegetation.		

Operational Phase			
Environmental/Social Impact	**Proposed mitigation measures**	**Responsibility**	**Key Performance Indicator (KPI)**
Noise pollution	• All noise should be kept within reasonable levels. • Employees and neighbors should be notified of any scheduled unusual noise. • Regular maintenance of vehicles, equipment and heavy machinery. • Workers should be provided with personal hearing protection if working in a noisy environment.	All employees, Safety Health and Environment Manager Environmental Officer	• Amount of noise produced
Visual	• Environmental considerations will be adhered to at all times before clearing roads and excavations • Implementation of continuous rehabilitation program. • Carrying out of progressive working and restoration/rehabilitation over the shortest timescale possible, to avoid excessive area of disturbance	Safety Health and Environment Manager Environmental officer Exploration/Mining Manager	• Employees to be trained on how to minimize visual impacts • No major contribution to the visual impact in the area. • No complaints from the locals regarding major eyesore due to unmanaged site restoration

Fauna	• Sensitive habitat areas such as the river and tunnel outcrops will be avoided wherever possible. • A fauna survey will be conducted to determine the effect of fragmented habitat to game species should the need arise. • Noise levels should be kept at minimum in order to reduce interfere with the normal survival of wildlife especially those that use sound to navigate, to find food, mate or avoid predators. • Environmental awareness on the importance of biodiversity preservation should be provided to the workers. • No food stuff shall be left lying around as this will attract animals which may result in human-animal conflict. • Site personnel should refrain from killing/poaching, capturing, snaring or intentionally disturbing any animals that may be found on and around the exploration and mining sites**.**	Personnel on duty, Environmental Officer, Safety Health and Environment Manager	• Incident reports of illegal hunting of wildlife by the crew. • Regular monitoring of unusual signs of animal habitat throughout exploration and mining phases
Alien invasive plants	• Ensure debris is properly disposed of. • Ensure vehicles and equipment are clean of invasive plants and seeds. • Contain neighboring infestations and restrict movement of invasive plants from adjacent lands • Educating everyone on site on types of invasive plants. Eradicating alien invasive plants by using an area management plan.	Safety Health and Environment Manager Environmental officer Foreman and personnel on duty	• Regular monitoring of any signs of alien invasive plants

Impact on vegetation	• Environmental considerations will be adhered to at all times before clearing roads, trenching and excavations. • Paths and roads will be aligned to avoid root zones. • Permeable materials will be used where ever possible. • Movement of vehicles in riverbeds, rocky outcrops and vegetation sensitive areas will be avoided and restricted to certain tracks only.	Safety Health and Environment Manager	• Restored vegetation
Solid waste	• Minimize solid waste generated on site. • Encourage segregation of waste on site • Debris should be collected by waste collection contractor. • Excavated waste should be piled at a designated approved location.	Safety Health and Environment Manager Environmental Officer All foremen, personnel on duty	• Amount of waste on site. • Availability of dust bins, waste collection point.
Oil leaks and spills	• Machinery should be well maintained to prevent oil leaks. • Contractors should have a designated area where maintenance is carried out and should be underlain by impermeable layer. • Workshops should be bounded by concrete	Environmental Officer, Safety Health and Environment Manager, Foremen, personnel duty	• No observed/detected oil spills and leaks on site
Archaeological sites	• Buffer zones will be created around the sites. • Adhere to practical guidelines provided by an archaeologist to reduce archaeological impact of exploration activities. • All archaeological sites to be identified and protected before mineral prospecting/exploration commence	Environmental and safety manager Foreman Archeologist	• Up to date register of all archaeological sites identified in the vicinity • Preservation of all artefacts **discovered** around project area

First aid	• A well-stocked first aid kit shall be maintained by qualified personnel.	Safety and health Officer, Safety Health and Environment Manager	• Contents of the first aid kit.
Fire preparedness	• Fire incidence firefighting emergency response plan. • Ensure all firefighting equipment are always available regularly maintained, serviced and inspected. • Fire hazard signs and directions to emergency exit, route to follow and assembly point in case of any. • No open fires to be created by exploration and mining personnel.	Health safety officer Safety Health and Environment Manager	• Fire signs put up in strategic places. • Availability of well-maintained firefighting equipment. • No wildfires recorded (due to presence of workers).
Environmental health and safety	• Train workers on personal safety and disaster preparedness. • Provide sufficient and suitable sanitary conveniences which should be kept clean. • Conduct annual health and safety audits. • Report any accidents/incidences, treat and compensate affected workers. • A well-stocked first aid kit shall be maintained by qualified personnel	Safety Health and Environment Manager	• Comprehensive health and safety plan for all exploration and mining activities compiled. • Provide sanitary facilities • Copies of annual audit

Decommissioning phase			
Impacts	**Proposed mitigation measures**	**Responsibility**	**Monitoring plan/Indicator**
Noise and air pollution	• Personal hearing protection must be worn by workers in noisy section. • Regular maintenance of vehicles, equipment, heavy machinery on regular basis. • Workers should be provided with dust mask to	Health safety and Environment Manager Environmental Officer	-Amount of noise and dust generated

	wear at all times. • Decommissioning work can only be carried out only during the day (8am-5pm).		
Disturbed physical environment	• Undertake a complete a complete environmental restoration programme and introducing appropriate vegetation for ground stabilization. • All drilled boreholes and excavated pits related to the project activities should be capped and backfilled, respectively. • The stockpiled topsoil should be leveled during exploration activities and subsequent mining. • Any temporary work camps setup should be dismantled, and the area rehabilitated as far as practicable, to their original state.	Health safety and Environment Manager Environmental Officer	-No sign of waste or littering seen on site and around site areas -No stockpiled topsoil (topsoil is levelled after completion of each work) -Campsite dismantled and materials taken away from site. -Capped boreholes and backfilled pits
Solid waste	• Solid waste should be collected by contracted waste collection company. • Project personnel should be sensitized to dispose of waste in a responsible manner and not to litter. • Excavation waste should be used or backfilled	Health safety and Environment Manager Environmental Officer	**-**Presence of well-maintained **w**aste storage containers and central collection point. -No visible litter around the project area
Occupational health and safety	• Train workers on personal safety and how to handle equipment and machines. • Provide personal protective equipment (PEE). • A well-stocked first aid kits shall be maintained by qualified personnel. • Demarcate area under decommissioning.	Health and safety officer, Environmental Officer, Health safety and Environment manager	• Workers using protective equipment. • Availability of a first aid box.

7.3 Monitoring, reporting and corrective action

7.3.1 Monitoring of EMP

Monitoring of the EMP performance for the proposed project by the Contractor emphasizes early detection, reporting, and corrective action. It is divided into three parts, namely:

- Monitoring of project activities and actions to be undertaken by the Environmental Coordinator (ENC) appointed by the Contractor.
- The Environmental Coordinator (ENC) shall report all incidents and situations which have the potential of jeopardizing compliance of statutory provisions as well as provisions of this EMP to the Project Proponent.
- The Environmental Coordinator (ENC) shall take corrective prompt measures, adequate and long-lasting in addressing non-compliance activities or behavior.
- To ensure compliance of the Contractor ENC to the implementation of the EMP, it is highly recommended that an External Environmental Expert is appointed by the proponent to ensure the implementation of the EMP.

7.3.2 Inspections and Audits

During the life of the project, performance against the EMP commitments will need to be monitored and corrective action taken where necessary, in order to ensure compliance with the EMP and relevant environ-legal requirements.

Internal Inspections/Audits

The following internal compliance monitoring programme will be implemented:

1. Project kick-off and close-out audits will be conducted on all contractors. This applies to all phases during exploration:
    - Before a contractor begin any work, an audit will be conducted by the applicable phase site manager to ensure that the EMP commitments are included in Contractors' standard operating procedures (SOPs) and method statements.

- Following completion of a Contractors work, a final close-out audit of the contractor's performance against the EMP commitments will be conducted by the applicable phase site manager.

2. Monthly internal EMP performance audits will be conducted during the construction/initial and decommissioning phases.
3. Ad hoc internal inspections can be implemented by the applicable manager at his/her discretion, or in follow-up to recommendations from previous inspection/audit findings.

External Audits

- At the end of each project phase, and annually during the project lifetime, an independently conducted audit of EMP performance will be conducted.
- Specialist monitoring/auditing may be required where specialist expertise is required or in order to respond to grievances or authorities' directives.
- Officials from the DEA may at any time conduct a compliance and/or performance inspection of exploration activities. The proponent will be provided with a written report of the findings of the inspection. These audits assist with the continual improvement of the exploration project and the proponent will use such feedback to help improve its overall operations.

Documentation

Records of all inspections/audits and monitoring reports will be kept in line with legislation. Actions will be issued on inspection/audit findings. These will be tracked and closed out.

Reporting

Environmental compliance reports will be submitted to the Ministry of Environment, Forestry and Tourism on a bi-annual basis.

Environmental management system framework

Environmental Management System (EMS) will be established and implemented by the

proponent and their Contractors. This subchapter establishes the framework for the compilation of a project EMS. The applicable manager will maintain a paper based and/or electronic system of all environmental management documentation. These will be divided into policy and performance standards & Enviro legal documentation.

Policy and Performance Standards

A draft environmental policy and associated objective, goals and commitments has been included in the EMP. The project proponent may adapt these as necessary.

Enviro-Legal Documentation

A copy of the approved environmental assessment and EMP documentation will always be available by the proponent. Copies of the Environment Clearance Certificate and all other associated authorizations and permits will also be kept with the exploration team. In addition, a register of the legislation and regulations applicable to the project will be maintained and updated as necessary.

Impact aspect register

A register of all project aspects that could impact the environment, including an assessment of these impacts and relevant management measures, is to be maintained. This Draft EMP identifies the foreseeable project aspects and related potential impacts of the proposed project, and as such forms the basis for the Aspect Impact Register; with the Project Activity. It should however be noted that during the life of the project additional project aspects and related impacts may arise which would need to be captured in the Aspect-Impact Register.

Procedures and Method Statements

In order to affect the commitments contained in this EMP, procedures and method statements will be drafted by the relevant responsible exploration staff and Contractors. These include, but may not be limited:

- Standard operating procedures for environmental action plan and management programme execution.
- Incident and emergency response procedures.
- Auditing, monitoring and reporting procedures, and
- Method statements for EMP compliance for ad hoc activities not directly addressed in the EMP action plans.

All procedures are to be version controlled and signed off by the applicable manager. In addition, knowledge of procedures by relevant staff responsible for the execution thereof must be demonstrable and training records maintained.

Register of roles and responsibilities

During project planning and risk assessments, relevant roles and responsibilities will be determined. These must be documented in a register of all environmental commitment roles and responsibilities. The register is to include relevant contact details and must be updated as required.

Environmental management schedule

A schedule of environmental management actions is to be maintained by the applicable phase site managers and/or relevant Contractors. A master schedule of all such activities is to be kept up to date by the manager. Scheduled environmental actions can include, but are not limited to:

- Environmental risk assessment;
- Environmental management meetings;
- Soil handling, management and rehabilitation;
- Waste collection;
- Incident and emergency response equipment evaluations and maintenance
- Environmental training;
- Stakeholder engagement;
- Environmental inspections and
- Auditing, monitoring and reporting

Change Management

The environmental management schedule must have a procedure in place for change management. In this regard, updating and revision of environmental documentation, of procedures and method statements, actions plants etc. will be conducted as necessary in order to account for the following scenarios:

- Changes to standard operating procedures (SOPs);
- Changes in scope;
- Ad hoc actions;
- Changes in project phase; and
- Changes in responsibilities or roles

All documentation will be version controlled and require sign off by the applicable phase site managers.

7.4 Environmental code of conduct

The Code of Conduct outlined in this section of the EMP applies to, sub-contractors, visitors, permanent and temporal workers. Therefore, anybody within the boundaries of the project site must adhere to the Environmental Code of Conduct as outlined in this section of the EMP. The Environmental Coordinator ENC will implement on-site environmental guidelines and has the authority to issue warnings as well as discipline any person who transgresses environmental rules and procedures. Persistent transgression of environmental rules will result in a disciplinary hearing and thereafter continued noncompliance behavior will result in permanent removal from the construction sites.

7.5 Site closure and rehabilitation

This is the phase when exploration activities cease as a result of either poor exploration results or loss of market demand for the targeted commodity. Rehabilitation measures will have to put in place during exploration and before decommissioning. Rehabilitation has been planned with a main aim of returning disturbed environment close to its original state. It is also planned to cater for the access road, vehicle tracks around the site, removal, and restoration of areas covered by

stockpile and rock piles. The closure vision for the proposed project is to establish a safe, stable and non-polluting post-prospecting landscape that can facilitate integrated, self-sustaining and value generating opportunities, thereby leave a lasting positive legacy.

Site closure and rehabilitation activities

All waste (such as hazardous and domestic) waste will be transported offsite for disposal in licensed landfills in Omaruru town. Disturbed or/and contaminated areas will be cleaned up, treated where necessary and restored to its pristine state.

- Demolition of camping structures.
- Removing of equipment on site.
- Removal of associated infrastructures such as storage tanks, solar panels and heavy-duty generators.
- Where access tracks have been developed in cases where there are no roads, these will be rehabilitated and closed as part of normal closure actions in consultation with landowners.
- Existing secondary roads in the area should be used to prevent damages of the main road.
- The recovered topsoil and subsoil should be utilized to reconstruct the original soil profile.
- All power and water services to be disconnected and certified as safe prior to commencement of any decommissioning works;
- All remaining inert equipment and decommissioning waste will be disposed to the nearest licensed general waste disposal facility;
- Salvageable equipment will be removed and transported offsite prior and during decommissioning;
- Transporting all machinery and equipment as well as vehicles to designated offsite storage facilities;
- All tanks, pipes and sumps containing hydrocarbons to be flushed or emptied prior to removal to ensure no hydrocarbon/chemical residue remains;
- Backfilling of trenches and or pits in such a way that subsoil is replaced first, and topsoil replaced last.

- Closing off and capping of all exploration drilling boreholes.

The rehabilitation actions intended to be undertaken at the end of the life of the proposed exploration and mining project as are described below.

Remediation of Contaminated Areas

All soil, contaminated with hydrocarbons, will be identified, excavated and disposed in accordance with nearest town council disposal requirements at appropriate sites.

- Removed soils will be managed as determined by the nature and extent of the contamination.
- All equipment in which chemicals have been stored or transported will be cleaned and disposed of in a suitable disposal facility.

Waste Management

Waste management activities will include:

- Hazardous waste will be managed handled, classified and disposed.
- No burring and burying of waste.
- Nonhazardous substances will be disposed in the nearby landfill sites.
- It may be necessary to fence temporary salvage yards for security reasons, particularly where these are located close to public roads.

8. Public Consultation

8.1 Legal framework

Public consultation is an important part of an environmental impact assessment process. Public consultation gives an opportunity to stakeholders or interested members of the public to get more information on the proposed project and to raise any issues or concerns. The Environmental Management Act 2007 and its EIA regulations of 2012 are the tools governing environmental impact assessment in Namibia. Among the important objectives of the Act is to prevent and mitigate the significant effects of activities on the environment by ensuring that interested and affected parties are afforded opportunity to participate throughout the assessment process; and ensuring that the findings of an assessment are considered before any decision is made in respect of activities.

In terms of Section 21 of the EIA Regulations, the person conducting a public consultation process must give notice to all potential interested and affected parties by:

(a) As part of efforts to ensure public awareness of the project in general, site notices informing the general public as well as affected land owners about the Environmental Assessment process, and providing details of the scheduled consultation meetings were placed at the following strategic locations such as: The Tsiseb Communal Conservancy offices, Dâure Daman Traditional Authority office, Uis Settlement Office and well-known supermarkets in Uis.

(b) Giving written notice to:

- The local authority council, regional council and traditional authority, as the case may be, in which the site or alternative site is situated, these include: Erongo Regional Council, Dâures Constituency Office, Uis Town Council, Dâure and Daman Traditional Authority.
- Any other organ of state having jurisdiction in respect of any aspect of the activity: Tsiseb Communal Conservancy.

- Central or national government**:** Ministry of Environment, Forestry & Tourism; Ministry of Mines & Energy; Ministry of Agriculture & Land Reform; Ministry of Urban &Rural Development; National Heritage Council of Namibia (under the Ministry of Education, Ats & Culture).
- Government Parastatals: Namwater (environmental section), Roads Authority (Legal & Road Network Planning Section), Erongo Red, National Heritage Council, Namibian Chamber of Mines, National Botanical Research Institute, Nampower.
- The owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site;
- Interested public members

(c) In line with the provisions of the regulations, the public notices (attached) were published in two widely local newspapers in Namibia (Windhoek Observer newspaper and Confidénte newspaper) during the months of January and February 2023 for three consecutive weeks, from 18 January to 2 February 2023. Appendix C provides tear sheets of the adverts. The closing date for registration and submission of written objections, comments, inputs to Mining Claims (MCs: 74090 to 74098), environmental assessment process was postponed to 24 march 2023. The EIA Regulations clearly state that potential interested and affected parties must be provided with a reasonable opportunity (21 days) to comment on the application under Section 21(6) of the EIA Regulations, which was provided.

The public were invited through the newspaper advertisements (annexed to this report) to submit written comments / inputs / objections on the proposed minerals exploration activities. Apart from BID request, no comments / inputs / objections were received on the proposed project. The background information document (BID) annexed to this report was provided to the entire registered stakeholder and to all identified I&APs, so far, no submissions was received.

Table 31 (a): Register of Organs of State as per section 22(c) of the EIA regulations of 2012.

No.	Name	Position	Organization
1	Teofillus Ngitila	Executive Director	Ministry of Environment, Tourism and Forestry

2	Timoteus Mufeti	Environmental Commissioner	Ministry of Environment, Tourism and Forestry
3	Maria Amakali	Director: Water Resources Management	Ministry of Agriculture, Water and Land reform
4	Isabella K. Chirchir	Mining Commissioner	Ministry of Mines and Energy
5	N P Du Plessis	Senior Environmentalist	NamWater

(b)Registered stakeholders (register was made available from January 2023).

No.	Name	Affiliation	Contact Details
1	Mr Allan Gurirab	Daure Daman Traditional Authority	Contact no.: +264 855 29 692
2	Benjamen Howaseb	Daure Daman Traditional Authority	Contact no.: +264 81 8576 560
4	Elina Hamatwi Lumbu	Roads authority	lumbue@ra.org.na
5	Chief Seibeb	Daure Daman Traditional Authority	Contact no.: +264 81 330 983
6	Jaco Swart	Rent-A-Drum Commercial Manager	cm@rent-a-drum.com.na
7	Iipinge Ndelimona	Namibia Environment and Wildlife Society	ndelimonachox@gmail.com

The information given below was shared the concerned parties to shade more light in response to concerns raised:

- Entry only with Knowledge and permission of the landowner.
- Initial stages: thematic mapping to delineate various land use zones and patterns to help improve the multiple land use practices and promote coexistence for all the possible land use options.
- In the initial stages: mainly desktop studies (aerial geophysics, remote sensing and Landsat images interpretations) supported by probably 1- or 2-days field verifications.
- Once more information on target areas has been obtained frequent field target verifications: mapping/ sampling visits/ trenching/ drilling, but this will only be over specific areas of interest and not the entire project area.
- The only parts to be physically visited are areas of interest and this tends to be a localized involving only small area where mineralization occurs.

- Field verifications of targets will only be done with the permission and knowledge of the landowner.
- A land/farm access Agreement will be negotiated between the Proponent and the landowner (s) stipulating conditions of access.
- The land access agreement will include among other important issues such as adherence to Environmental Management Plan which focuses on environmental mitigation measures.
- EMP will cover issues raised by interested and affected parties (I&APs)
- The project can only advance in to mining if resources of economic potential are discovered.
- Statistics shows that the likelihood of any EPL/Mining Claim(s) to advance to a mining stage is less than 0.01 or 1% .
- If the exploration activities were to advance to mining stage, it's a process that would take time (on average up to 10 years) and landowners as well as I&APs will be consulted throughout the whole development process.
- If the proposed exploration activities lead to a discovery of a mineral resource of economic potential, prefeasibility and feasibility studies will then be carried out over the local area hosting the mineralization.
- During the prefeasibility and feasibility studies, a detailed site-specific Environmental Impact Assessment (EIA) study will be carried out and an Environmental Management Plan (EMP) report will be prepared and these will be done in consultation with all interested and affected parties including the landowner.
- If a deposit of economic potential was to be discovered, the benefits would be big. It would boost the economy of the constituency and it will better the livelihood of many people in the region

9. Conclusion

The proponent provisionally acquired mineral rights on Mining Claims (MCs: 74090 to 74098), from the Ministry of Mines and Energy (MME). Therefore, the proponent intends to carryout exploration activities on Mining Claims (MCs: 74090 to 74098), for Base and rare metals, industrial minerals and semi-precious stones on Cape-Cross-Uis pegmatites. The proponent plans to implement these activities as soon as the clearance certificate has been issued of operation and this include: geophysical surveys, geochemical survey, geological mapping, trenching, drilling and geochemical sampling as well as laboratory analysis aimed discovering mineral resources of economic interest. Once the mineral deposit has been identified and proven to be economically feasible the next step is to open a small scale mine. Conventional open pit mining method will be utilized. Potential positive and negative impacts of the proposed exploration and mining activities on the Mining Claims (MCs: 74090 to 74098), were identified assessed, and mitigation measures are provided in the EMP. These mitigation measures and recommendations provided are deemed sufficient to minimize the identified impacts to acceptable levels.

The Environmental Management Plan should be used as an on-site reference document during all phases of the proposed project, and auditing should take place in order to ensure compliance with the EMP of the proposed project. Parties responsible for transgression of the EMP should be held responsible for any rehabilitation that may need to be undertaken. Overall, the severity of potential environmental impacts of the proposed project activities on the receiving environment (physical, biological, socioeconomic environments and ecosystem functions) will have low probability of occurrence, localized extent, and low magnitude and temporally duration. This report should be viewed as a framework for integrating mitigation measures and applicable legal tools to ensure both compliance and sustainability. It is therefore very important that the proponent provides adequate support for human and financial resources, for the implementation of the proposed mitigations and effective environmental management during the planned activities.

10. Recommendations

The proposed operations are considered to have, overall low negative environmental impacts and potential for the enhancement of socio-economic benefits provided all protocols including the proposed mitigation measures are adhered to. It is therefore recommended that the mineral prospecting and exploration activities on Mining Claims (MCs: 74090 to 74098), be granted an Environmental Clearance Certificate, provided that: All mitigations provided in this EMP should are implemented as stipulated and where required and emphasized, improvement should be effectively put in place. The Proponent and all their workers comply with the legal requirements governing this type of project and its associated activities.

In a summary the following are to be observed to:

- The proponent should take all the necessary actions to implement the EMP to minimize adverse impacts on the environment.
- The proponent should take responsibility for ensuring that all contractors and employees are fully informed of the EMP provisions, guidelines and legislative requirements and must ensure that adequate insurance cover is in place prior to entry.
- The environmental risks associated with all mineral prospecting and exploration activities on Mining Claims (MCs: 74090 to 74098), should be considered and planned for. Best practice procedures should be implemented to minimize any environmental impact and these procedures should be clearly outlined and communicated to all contractors and employees prior to commencing any activity.
- In cases where baseline information, national or international guidelines, or mitigation measures have not been supplied or do not adequately address the site-specific project effect, the proponent must use the precautionary approach/principles.
- There should be full consideration and close liaison with relevant landowners and regulatory authorities. The proponent is required to give advance notices and obtain permission to have access from the landowners.

- The exploration and mining activities should be conducted in line with the EMP, thus implementing the necessary mitigation measures, monitoring and stipulated rehabilitation measures.
- In a case where portable water is discovered during boreholes drilling operations, the proponent shall support other land users in the area in terms of access to freshwater supply for both human consumption, wildlife and agricultural support as may be requested by the local community / landowners/s. Relevant underground water abstraction permit/s be obtained from the Ministry of Agriculture, Water and Land Reform (MAWLR) and abstraction and monitoring conditions thereof be observed.
- Any damage to vegetation, land surface or landowner property that may occur as a result of exploration should be corrected without undue delay.
- Site areas where exploration activities have ceased are rehabilitated, as far as practicable, to their pre-exploration state.

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Appendix A: Registered IAP's

Name	Organization	Tel	Email
Allan Gurirab	Dâure Daman Traditional Authority	+264 855 29 692	
B. Korhs	Earth life Namibia	061-2022041	earthl@iway.na
C. Sisamu	Nampower	061-2052350	Calvin.Sisamu@nampower.com.na
Benjamen Howaseb	Dâure Daman Traditional Authority	+26481 8576 560	
Chief Seibeb	Dâure Daman Traditional Authority	+264 81 330 983	
C. Tubalike	MURD	061-2975062	ctubalike@murd.gov.na
Coleen Mannheimer	061-2022021	manfam@iafrica.com.na	
E de Paauw	Roads Authority - Specialized road Legislation, Advise & Compliance	061-2847027	dePaauwe@ra.org.na
E Muremi	Ministry of Health and Social Services Director Khomas Region	061-2035001	Elizabeth.Muremi@mhss.gov.na
E. Shivolo	Min. of M&E - Mining Commissioner	061-2848111	Erasmus.Shivolo@mme.gov.na
Esmerialda Strauss	CHIEF FORESTER National Botanical Research Institute (NBRI)	061-2022017	Esmerialda.Strauss@mawf.gov.na
F Kreitz	Namibian Environment and Wildlife Society - Media, website and newsletter	061-306450	Information@NEWS-Namibia.org;
F. Sikabongo	MET - Deputy Director of Directorate of Environmental Affairs	061-2842701	frederick.Sikabongo@meft.gov.na
Fransiska Nghitila	NWR-Environmental and Compliance Specialist	061-2857190	Fnghitila@nwr.com.na; fnghitila@gmail.com
Elina H Lumbu	Roads authority		lumbue@ra.org.na

Jaco Swart	Rent-A-Drum Commercial Manager		cm@rent-a-drum.com.na
Sonja Loots	Manager: Threatened Plants Programme, National Botanical Research Institute	061-2022014	Sonja.Loots@mawlr.gov.na sonja.loots.solo@gmail.com
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Appendix B: Proof of Advertisements, Letters and Notices

Appendix C: CV of EAP

Appendix D: BID