



Environmental Scoping Assessment (ESA) Report for the Proposed Exploration Activities of Dimension Stone and Precious Metals on Exclusive Prospecting License (EPL) No. 7343 near Okombahe Settlement in the Erongo Region

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EXECUTIVE SUMMARY

Timecall Erongo Mining CC (hereinafter referred to as The Proponent) has been granted an Exclusive Prospecting Licence (EPL) No. 7343 by the Ministry of Mines and Energy (MME). The tenure of the licence is from the 28th of August 2019 to the 27th of August 2022. The 7,464.7-hectare (ha) EPL is just on the immediate east direction of the Okombahe Settlement, which is about 60km west of Omaruru in the Erongo Region. The EPL covers the Okombahe Settlement to the east and two farms, namely Portion 1 of Farm Okombahe No. 112 (to the north) and Farm Kawab No.117 (to the east, Portion 1, and Remainder of the Farm).

EPL 7343 has potential for Base & Rare Metals (Copper), Dimension Stone, Industrial Minerals, and Precious Metals. However, the targeted commodities for this project are Dimension Stone (Marble and possibly, Granite) and Precious Metals (Gold and Silver) only. Therefore, the Proponent intends to conduct mineral exploration activities within the EPL leading to the estimation and delineation of the target resources (commodities).

The Environmental Management Legal Requirements

The proposed exploration works are however among the listed activities in the Environmental Management Act (EMA) No. 7 of 2007 and its 2012 Environmental Impact Assessment (EIA) Regulations that may not be undertaken without getting the environmental clearance certificate (ECC). Consequently, The Proponent appointed Excel Dynamic Solutions (Pty) Ltd (hereinafter referred to as *EDS*) to undertake the required Environmental Scoping Assessment process (ESA) and apply for the ECC for the proposed project activities.

It is for this reason, that this Environmental Scoping Assessment (ESA) Report was compiled. The Report contains all the information that was gathered from the environmental assessment process. The information contained herein include the description of the proposed project activities and alternatives, legal requirements, the pre-project environmental conditions, public consultation means, identified potential impacts (both by the Consultants and as raised by the registered interested and affected parties (I&APs)), the assessment of impacts and provision of the necessary practical measures to manage and or minimize each impact' significance, where avoidance is impossible.

Public consultation, Key issues Raised and Identified Potential Impacts

First Round of Public Consultation: Consultation Means (from newspaper adverts to draft ESA Report compilation)

The first round of public consultation took place from the 09th of August 2021 to the 3rd of September 2021 (initially, but extend to the end of September 2021 due to pending community clarification meetings in Okombahe by the Traditional Authority). The public was informed of the ESA process and consulted through the following means:

- ESA notifications in the Namibia Media Holdings' newspapers (*Die Republikein, Namibian Sun and Allgemeine Zeitung*) for 09 August 2021 and 16 August 2021, briefly explaining the activity and its locality, inviting members of the public to register as I&APs and submit their comments/concerns.
- Email notifications sent to all pre-identified Interested & Affected Parties (I&APs) on the 13th of August 2021.
- Public notices were placed at frequented places in Okombahe Settlement such as the Okombahe Settlement and Daures Constituency Offices to inform members of the public of the EIA process and register as I&APs, as well as submit comments.
- Public Consultation Meeting held with the Community and some leaders in the Okombahe Settlement.

Second Round of Public Consultation: Draft ESA Report Review

The draft ESA Report was circulated to all registered I&APs for review and comments for a period of nine days (6 October to 14 October 2021).

There was no further comment received on the draft ESA Report. This was confirmed via EDS Consultants emails because there were no emails received on the draft Report.

Issues and concerns to the proposed project: Public (I&APs) Feedback

The main issues (potential negative impacts) that were pre-identified by the EDS Consultants and raised during the first round of public consultation by the I&APs are as follows:

Summary of pre-identified potential impacts by the Consultant

Positive impacts

- Socio-economic development through employment creation (primary, secondary, and tertiary employment) and skills transfer,
- Open other investment opportunities and infrastructure-related development benefits,
- Produce a trained workforce and small businesses that can service communities and may initiate related businesses,
- Boosting the local economic growth and regional economic development.

- Improved geological understanding of the area regarding Dimension Stone and precious metals, and
- Increased support for local businesses through the procurement of consumable items such as Personal Protective Equipment (PPE), machinery spare parts, lubricants, etc.

Negative impacts:

- Potential disturbance of existing pastoral systems
- Physical land / soil disturbance
- Impact on local biodiversity (fauna and flora) and habitat disturbance
- Potential impact on water resources and soils particularly due to pollution,
- Air quality issue
- Visual impacts due to scars on landscape and relief, especially by Dimension Stone test quarrying on the affected sites of the EPL
- Impact on Tourism as result of affected visual/sense of place (Dimension Stone exploration).
- Potential occupational health and safety risks
- Vehicular traffic safety
- Vibrations and noise
- Environmental pollution
- Archaeological or cultural heritage impact
- Potential social nuisance and conflicts between affected farmers (land users)

Issues raised by the I&APs during the consultation period

- Insufficient or lack consultation with the Traditional Authority when the EPL was applied for by and granted to the Proponent (there was no prior consultation with the Traditional authority before the EIA/ESA)
- Rehabilitation issues and impacts on the communities, especially livestock loss
- Impact on services infrastructure
- Impact on biodiversity and conservation
- Soil degradation
- Pollution of soils and water resources
- Impact on Tourism and Visual
- Impact on grazing (pastoral) land
- Health and safety

- Impact of blasting
- Corporate Social Responsibility (CSR): Inconsideration of communities by Developers (project owners)
- Lack of opportunities to the locals (jobs and tenders), and
- Unemployment among the youth and the issue of project owners overlooking locals for jobs.

The above-listed issues were used as basis to compile this Report and they have been addressed (impacts' description and assessment) under respective chapters of this Report as well as management and mitigation measures provided thereto in the Draft EMP.

Mitigations and recommendation for Site Rehabilitation and Decommissioning of works

Rehabilitation of the exploration sites and decommissioning of site works, activities and structures will include but not limited to the following:

- revegetation of bare areas with species consistent with surrounding vegetation, where possible.
- refilling of trenches in such a way that subsoil is replaced first, and topsoil replaces last.
- Carrying away all waste generated from the last disposal to the last days on site.
- Closing off and capping of all exploration drilling boreholes. The boreholes should not only be filled with sand alone, as wind will scour the sand and re-establish the holes.
- Necessary landscaping of exploration areas should be undertaken upon completion of each phase of exploration (drilling, sampling, test quarrying, etc.)

Recommendations

The key potential impacts associated with the proposed exploration activities and its associated activities on EPL were identified and assessed. It is found that most of the identified potential negative impacts are rated as medium significant. Therefore, these medium rated potential negative impacts identified in this study can be avoided and minimised (where impacts cannot be avoided) by implementing the mitigation measures given herein, as well as those provided in the management action and monitoring plans provided in the Draft EMP to reduce the significance rate from medium to low. **However, one of the potential negative impacts (archaeological impact) having a very concerning significance rating (high).**

A desktop Archaeological Report has been compiled as part of the ESA, but this is not sufficient to make an informed decision on practical management and mitigations to address the impact. Therefore, triggers a Detailed Archaeological and Heritage Assessment.

A public consultation meeting in a form of an interaction session was held with the public, specifically some of the affected farm owners and community members on the 25th of August 2021 in Okombahe. The interested and affected parties raised their comments and concerns on the proposed project activities, and these were noted down during the meeting. The concerns and comments received from the public and the local community members formed the basis for this Report and development of the Draft EMP.

The following recommendations are made as condition to consideration of ECC for the proposed exploration on EPL 7343:

- **A Detailed (Comprehensive) Archaeological & Heritage Assessment should be done to ascertain the actual impact of the proposed exploration activities, particularly Dimension Stone on the archaeological sites and objects on the //Khan-hêb Mountain as the main concern from the archaeology perspective.**

Once the Detailed Archaeological Assessment and the ESA Report updated with the findings and recommendations of the Archaeologist, the following recommendations will be made:

- All required permits, licenses and approvals for the proposed activities should be obtained as required (please refer to the Permitting and Licensing Table in the Draft Environmental Management Plan. These include permits and licenses for land/farm access agreements to explore and ensuring compliance with these specific legal requirements.
- The Proponent complies with the legal requirements governing this type of project and its associated activities.
- All mitigations provided in this Report and the management action plans in the EMP should be implemented and monitoring conducted as recommended.
- All the necessary environmental and social (occupational health and safety) precautions provided should be adhered to.
- Site areas where exploration activities have ceased should be rehabilitated, as far as practicable, to their original state.

- The monitoring of the implementation of mitigation measures should be conducted, applicable impact's actions taken, reporting done and recorded as recommended in the Draft EMP (upon updating the EMP with / incorporating management and mitigation measures from an Archaeologist).

Conclusion

The potential positive and negative impacts stemming from the proposed exploration activities were identified, assessed and mitigation measures made thereof. For some potential impacts management and mitigation measures were recommended for implementation to avoid and/or reduce (where impact avoidance impossible) the risks to acceptable levels.

However, given the significant of the potential impact on the archaeology environment and desktop-level recommendations only for the archaeological study, Excel Dynamic Solutions (Pty) Ltd, under the specialist (Archaeologist) recommends that a Detailed Archaeological & Heritage Assessment Study should be done. This is vital in ascertaining the actual and extent of the impact of the proposed exploration activities, particularly Dimension Stone on the archaeological and herigate resources (sites and objects) potentially on and around the Mountain of concern, i.e. the //Khan-hêb. In other words, a detailed field investigation within the EPL 7343 must be carried out to confirm existing findings and determine of any other possible archaeological, cultural or heritage features

The Detailed Archaeological & Heritage Assessment would then ensure that the potential impact is sufficiently understood to enable the recommendation of practical and site-specific management and mitigation measures.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
LIST OF FIGURES	x
LIST OF TABLES	xi
LIST OF APPENDICES	xi
LIST OF ABBREVIATIONS	xii
1 INTRODUCTION	1
1.1 Project Background.....	1
1.2 Terms of Reference (TOR) and Scope of Works.....	1
1.3 EPL 7343 Ownership	4
1.4 Appointed Environmental Assessment Practitioner	4
1.5 The Need for the Proposed Project.....	5
2 PROJECT DESCRIPTION: PROPOSED EXPLORATION ACTIVITY	5
2.1 Proposed Exploration Methods for Precious Metals	6
2.1.1 Planned Activities: Proposed Exploration Methods	6
2.1.2 Pre-development Phase (Prospecting).....	7
2.1.3 Exploration: Drilling, Sampling and Analysis Phase	8
2.2 Proposed Exploration Methods for Dimension Stone	9
2.2.1 Desktop Study	9
2.2.2 Field Evaluation	9
2.2.3 Detailed Exploration.....	10
2.2.4 Feasibility Study: Test Quarrying (Exploration Component)	11
2.2.5 Project aspects and resources requirements	11
2.3 Decommissioning and Rehabilitation Phase	14
2.3.1 Precious Metals	14
2.3.2 Dimension Stone	14
3 PROJECT ALTERNATIVES	15
3.1 Types of Alternatives Considered	15
3.1.1 The "No-go" Alternative	15
3.1.2 Exploration Location	16
3.1.3 Exploration Methods	17
3.1.4 Supporting Services Infrastructure	17

4	LEGAL FRAMEWORK: LEGISLATION, POLICIES AND GUIDELINES.....	18
4.1	The Environmental Management Act (No. 7 of 2007).....	18
4.2	Other crucial legal requirements governing the proposed project.....	18
4.3	International Policies, Principles, Standards, Treaties and Conventions	25
5	ENVIRONMENTAL BASELINE.....	29
5.1	Climate	29
5.1.1	Rainfall.....	30
5.1.2	Temperature	32
5.1.3	Air and Winds	32
5.2	Topography	34
5.3	Soils.....	37
5.4	Geology	38
5.5	Water Resources	40
5.5.1	Hydrology (Surface Water) and Hydrogeology (Groundwater)	40
5.5.2	Groundwater Risk to Drought.....	41
5.5.3	Water Sources and Supply	42
5.6	Terrestrial Biodiversity: Flora and Fauna.....	43
5.6.1	Fauna	43
5.6.2	Flora	44
5.7	Archaeology and Heritage.....	46
5.7.1	Regional Context	46
5.7.2	Local Context.....	47
5.7.3	Archaeological and Heritage Findings.....	47
5.8	Surrounding Land Uses	49
5.8.1	Demography	50
5.9	Socio-Economic Status.....	51
5.9.1	Economy.....	51
5.9.2	Tourism.....	51
5.9.3	Mining Activities	52
5.9.4	Infrastructure and Services	52
6	PUBLIC CONSULTATION PROCESS.....	53
6.1	Pre-identified and Registered Interested and Affected Parties (I&APs)	53
6.2	Summary of Activities to Communicate with the I&APs	54
6.2.1	Public Consultation Meeting in Okombahe Settlement.....	56
6.3	Feedback from the I&APs (Post-Public Consultation Meeting).....	60

6.3.1	Second Round of Public Consultation: Draft ESA Report Review	62
7	IMPACT IDENTIFICATION, ASSESSMENT AND MANAGEMENT & MITIGATION MEASURES.....	62
7.1	Impact Identification	62
7.2	Impact Assessment Methodology	64
7.2.1	Extent (spatial scale).....	64
7.2.2	Duration	65
7.2.3	Intensity, Magnitude / severity.....	65
7.2.4	Probability of occurrence	66
7.2.5	Significance	66
7.3	Assessment of Potential Positive Impacts.....	68
7.3.1	Socio-economic development (Employment) and Corporate Social Responsibility (CSR) 68	
7.3.2	Improved geological understanding of the site	69
7.3.3	Investment opportunities.....	70
7.4	Assessment of Potential Negative Impacts: Surveys, Drilling, Sampling and Test Quarrying Phase.....	70
7.4.1	Disturbance to the Pastoral System (Grazing Areas)	70
7.4.2	Impact on Archaeological and Heritage Resources.....	71
7.4.3	Land (Soil) Degradation	73
7.4.4	Soil and Water Resources Pollution.....	73
7.4.5	Loss of Biodiversity: Fauna and Flora	76
7.4.6	Visual Impact and Tourism.....	78
7.4.7	Generation of Dust (Air Quality)	80
7.4.8	Waste Generation.....	82
7.4.9	Occupational and Community Health and Safety Risks	84
7.4.10	Vehicular Traffic Use and Safety.....	85
7.4.11	Noise and vibrations	87
7.4.12	Water Resources Use.....	88
7.4.13	Impact on Local Resources and Services (roads and water).....	90
7.4.14	Social Nuisance: Property intrusion and Disturbance or Damage (Land Use)	91
7.4.15	Social Nuisance: Job seeking and Differing Norms, Culture and Values	92
7.5	Cumulative Impacts Associated with Proposed Exploration	93
7.6	Mitigations and Recommendations for Rehabilitation.....	94
8	RECOMMENDATIONS AND CONCLUSIONS.....	94

8.1	Recommendations	94
8.2	Conclusion	95
9	LIST OF REFERENCES	96

LIST OF FIGURES

Figure 1:	Location of the EPL 7343 near Okombahe Settlement in the Erongo Region (Source: EDS, 2021)	2
Figure 2:	Farms and some land uses covered by EPL 7343 (Source: EDS, 2021)	3
Figure 3:	EPL No. 7343 on the mining cadastre portal (source; https://portals.landfolio.com/namibia/)	4
Figure 4:	Diagram of the Life Cycle of a Mine (after Superfund Research Project, 2019). The phase covered by this study is highlighted with a red box.	7
Figure 5:	The mineral exploration cycle (after, Savannah Resources, 2019)	8
Figure 6:	A typical example of a Down-The-Hole drill rig (OMAVI, 2020)	10
Figure 7:	The monthly average rainfall, rainfall and rain days in Okombahe (Source: World Weather Online, 2021)	31
Figure 8:	Maximum, minimum and average temperature patterns for Okombahe (Source: World Weather Online, 2021)	32
Figure 9:	The maximum, average wind seppd and gust for Okombahe (Source: World Weather Online, 2021)	33
Figure 10:	Wind rose for Okombahe (Source: Meteoblue, 2021)	34
Figure 11:	Elevation 3D Model of the project area (Source: EDS, 2021)	35
Figure 12:	Topographic image of Okombahe and western part (Source: https://en-gb.topographic-map.com/maps/oytr/Okombahe/)	36
Figure 13:	Topography of the EPL area	36
Figure 14:	The map of dominant soil types found within the EPL (Source: EDS, 2021)	37
Figure 15:	Common soils on the EPL (light brown sand and gravel)	38
Figure 16:	The geology map of the EPL and surrounding areas (Source: EDS, 2021)	39
Figure 17:	Water resources (hydrology and hydrogeological conditions) on and around the project area (Source: EDS, 2021)	41
Figure 18:	Groundwater Drought Risk map around the project area (Source: EDS, 2021)	42
Figure 19:	Okombahe Water Supply Scheme Layout (Source: NamWater, 2020)	43
Figure 20:	Dominant Vegetation (acacias) map within and around the EPL (Source: EDS, 2021)	45
Figure 21:	The camelthorn shrubs on the northern and western side of the //Khan-hëb Mountain within the EPL	45
Figure 22:	The young shrubs of the <i>Cyphostemma currorii</i> (Kobas) at the foot (northern side) of the //Khan-hëb Mountain within the EPL	46
Figure 23:	The desktop observed heritage/archaeological sites in the EPL area	47
Figure 24:	View of the //Khan-hëb Mountain from the north	49
Figure 25:	Land use map (farms) within and surrounding the EPL (Source: EDS, 2021)	50
Figure 26:	Public notice placed at the Okombahe Settlement Office notice board.....	55

Figure 27:	Public notice at the Daures Constituency office notice board in Okombahe	55
Figure 28:	Some photos taken during the short pre-meeting site visit near the //Khan-hêb Mountain	57
Figure 29:	Some photos taken from the public consultation meeting in Okombahe.....	57

LIST OF TABLES

Table 1:	The presentation of service infrastructure and structures (technical resources) alternatives considered for the project.....	17
Table 2:	Applicable local, national and international standards, policies and guidelines governing the proposed exploration works and related activities.....	18
Table 3:	International Policies, Principles, Standards, Treaties and Convention applicable to the project	26
Table 4:	Summary of Interested and Affected Parties (I&APs)	53
Table 5:	Summary of main issues and comments received during the public consultation meeting	58
Table 6:	Feedback received by EDS (directly and indirectly) issues and comments received during the public meeting	60
Table 7:	Extent or spatial impact rating	64
Table 8:	Duration impact rating	65
Table 9:	Intensity, magnitude or severity impact rating	65
Table 10:	Probability of occurrence impact rating	66
Table 11:	Significance rating scale	67
Table 12:	Assessment of the impacts of exploration on the Pastoral system	71
Table 13:	Assessment of the impacts of exploration on archaeological and heritage resources	72
Table 14:	Assessment of the impacts of exploration on site soils.....	73
Table 15:	Assessment of the project impact on soils and water resources (pollution)	74
Table 16:	Assessment of the impacts of exploration on biodiversity.....	77
Table 17:	Assessment of the impacts of exploration on visual (sense of place) and tourism	79
Table 18:	Assessment of the impacts of exploration on air quality	81
Table 19:	Assessment of waste generation impact.....	82
Table 20:	Assessment of the impacts of exploration on health and safety	84
Table 21:	Assessment of the impacts of exploration on road use (vehicular traffic)	86
Table 22:	Assessment of the impacts of noise from exploration.....	87
Table 23:	Assessment of the project impact on water resource use and availability	89
Table 24:	Assessment of exploration on local services (roads and water)	90
Table 25:	Assessment of social impact of community property damage or disturbance	91
Table 26:	Social impact assessment of outsiders' influx into the area (job seeking related).	92

LIST OF APPENDICES

Appendix A: Copy of the Environmental Clearance Certificate (ECC) Application Form 1 – attached hereto

Appendix B: Environmental Management Plan (EMP) – uploaded to the Portal separately as required

Appendix C: Curriculum Vitae (CV) of the Environmental Assessment Practitioner (EAP) - uploaded to the Portal separately as required

Appendix D: List of Interested and Affected Parties (I&APs) - uploaded to the Portal separately as required (part of the “Proof of Consultation” file)

Appendix E: Background Information Document (BID) - uploaded to the Portal separately as required (part of the “Proof of Consultation” file)

Appendix F: EIA Notification in the newspapers (*Die Republikein, Namibian Sun and Allgemeine Zeitung*) - uploaded to the Portal separately as required (part of the “Proof of Consultation” file)

Appendix G: Public Consultation Meeting Minutes – uploaded to the Portal separately as required (part of the “Proof of Consultation” file)

Appendix H: Desktop Archaeology and Heritage Assessment Report – attached hereto

LIST OF ABBREVIATIONS

Abbreviation	Meaning
BID	Background Information Document
COVID-19	Coronavirus disease
CV	Curriculum Vitae
DEAF	Department of Environmental Affairs and Forestry
DTH	Down-The-Hole (drilling)
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner
ECC	Environmental Clearance Certificate
EDS	Excel Dynamic Solutions

Abbreviation	Meaning
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
EPL	Exclusive Prospecting License
ESA	Environmental Scoping Assessment
GG	Government Gazette
GN	Government Notice
I&APs	Interested and Affected Parties
MEFT	Ministry of Environment, Forestry and Tourism
MME	Ministry of Mines and Energy
PPE	Personal Protective Equipment
RC	Reverse Circulation (drilling)
Reg	Regulation
S	Section
TOR	Terms of Reference

KEY TERMS

Term	Explanation/Definition
Alternative	A possible course of action, in place of another that would meet the same purpose and need of the proposal.
Baseline	Work done to collect and interpret information on the condition/trends of the existing environment.
Biophysical	That part of the environment that does not originate with human activities (e.g. biological, physical and chemical processes).
Cumulative Impacts/Effects Assessment	In relation to an activity, means the impact of an activity that in it may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

Term	Explanation/Definition
Decision-maker	The person(s) entrusted with the responsibility for allocating resources or granting approval to a proposal.
Ecological Processes	Processes which play an essential part in maintaining ecosystem integrity. Four fundamental ecological processes are the cycling of water, the cycling of nutrients, the flow of energy and biological diversity (as an expression of evolution).
Environment	As defined in Environmental Management Act - the complex of natural and anthropogenic factors and elements that are mutually interrelated and affect the ecological equilibrium and the quality of life, including – (a) the natural environment that is land, water and air; all organic and inorganic matter and living organisms and (b) the human environment that is the landscape and natural, cultural, historical, aesthetic, economic and social heritage and values.
Environmental Management Plan	As defined in the EIA Regulations (Section 8(j)), a plan that describes how activities that may have significant environments effects are to be mitigated, controlled and monitored.
Exclusive Prospecting Licence	Is a license that confers exclusive mineral prospecting rights over land of up to 1000 km ² in size for an initial period of three years, renewable twice for a maximum of two years at a time
Interested and Affected Party (I&AP)	In relation to the assessment of a listed activity includes - (a) any person, group of persons or organization interested in or affected by an activity; and (b) any organ of state that may have jurisdiction over any aspect of the activity. Mitigate - practical measures to reduce adverse impacts. Proponent – as defined in the Environmental Management Act, a person who proposes to undertake a listed activity. Significant impact - means an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment.
Fauna and Flora	All the animals and plants found in each area.
Mitigation	The purposeful implementation of decisions or activities that are designed to reduce the undesirable impacts of a proposed action on the affected environment.
Monitoring	Activity involving repeated observation, according to a pre-determined

Term	Explanation/Definition
	schedule, of one or more elements of the environment to detect their characteristics (status and trends).
Nomadic Pastoralism	Nomadic pastoralists live in societies in which the husbandry of grazing animals is viewed as an ideal way of making a living and the regular movement of all or part of the society is considered a normal and natural part of life. Pastoral nomadism is commonly found where climatic conditions produce seasonal pastures but cannot support sustained agriculture.
Proponent	Organization (private or public sector) or individual intending to implement a development proposal.
Public Consultation/Involvement	A range of techniques that can be used to inform, consult, or interact with stakeholders affected by the proposed activities.
Protected Area	Refers to a protected area that is proclaimed in the Government Gazette according to the Nature Conservation Ordinance number 4 of 1975, as amended
Scoping	An early and open activity to identify the impacts that are most likely to be significant and require specialized investigation during the EIA work. Can, also be used to identify alternative project designs/sites to be assessed, obtain local knowledge of site and surroundings and prepare a plan for public involvement. The results of scoping are frequently used to prepare a Terms of Reference for the specialized input into full EIA.
Terms of Reference (ToR)	Written requirements governing full EIA input and implementation, consultations to be held, data to be produced and form/contents of the EIA report. Often produced as an output from scoping.

1 INTRODUCTION

1.1 Project Background

Timecall Erongo Mining CC (hereinafter referred to as The Proponent) has been granted an Exclusive Prospecting Licence (EPL) No. 7343 by the Ministry of Mines and Energy (MME). The tenure of the licence is from the 28th of August 2019 to the 27th of August 2022. The 7,464.7-hectare (ha) EPL is just on the immediate east direction of the Okombahe Settlement, which is about 60km west of Omaruru in the Erongo Region (**Figure 1**). The EPL covers the Okombahe Settlement to the east and two farms, namely Portion 1 of Farm Okombahe No. 112 (to the north) and Farm Kawab No.117 (to the east, Portion 1, and Remainder of the Farm) - **Figure 2**.

EPL 7343 has potential for Base & Rare Metals (Copper), Dimension Stone, Industrial Minerals, and Precious Metals. However, the targeted commodities for this project are Dimension Stone (Marble and possibly Granite) and Precious Metals (Gold and Silver) only. Therefore, the Proponent intends to conduct mineral exploration activities within the EPL leading to the estimation and delineation of the target resources (commodities).

Section 27 (1) of the Environmental Management Act (EMA) (No. 7 of 2007) and its 2012 Environmental Impact Assessment (EIA) regulations, provides a list of activities that may not be carried out without an Environmental Impact Assessment (EIA) being undertaken and an Environmental Clearance Certificate (ECC) obtained. Exploration activities are listed among the activities that may not occur without an ECC. Therefore, individuals or organizations may not carry out exploration activities among those listed, without an EIA undertaken and an ECC awarded. The Proponent has appointed thereupon, Excel Dynamic Solutions (Pty) Ltd (EDS, Consultant or Environmental Assessment Practitioner (EAP) hereafter), an independent team of Environmental Consultants to conduct the required Environmental Assessment (EA) process and submit the ECC application to the Ministry of Environment, Forestry and Tourism (MEFT) and the Ministry of Mines and Energy (MME) on their behalf.

1.2 Terms of Reference (TOR) and Scope of Works

EDS has been appointed by the Proponent to undertake an environmental assessment, and thereafter, apply for an ECC for exploration work on the EPL. There were no formal TOR provided to EDS by the Proponent. The consultant, instead, relied on the requirements of the Environmental Management Act (No. 7 of 2007) (EMA) and its Environmental Impact Assessment (EIA) Regulations (GN. No. 30 of 2012) to conduct the study.

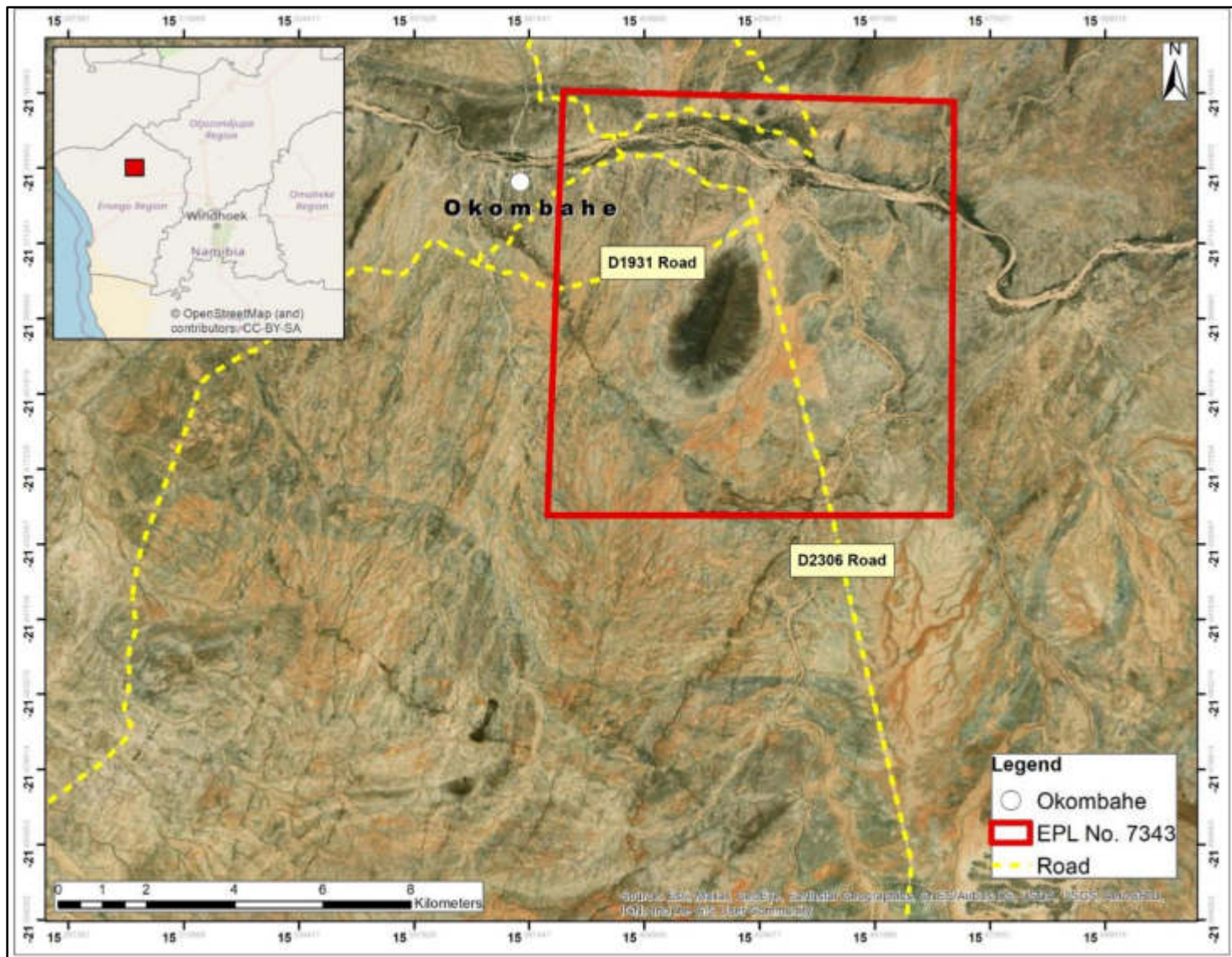


Figure 1: Location of the EPL 7343 near Okombahe Settlement in the Erongo Region (Source: EDS, 2021)

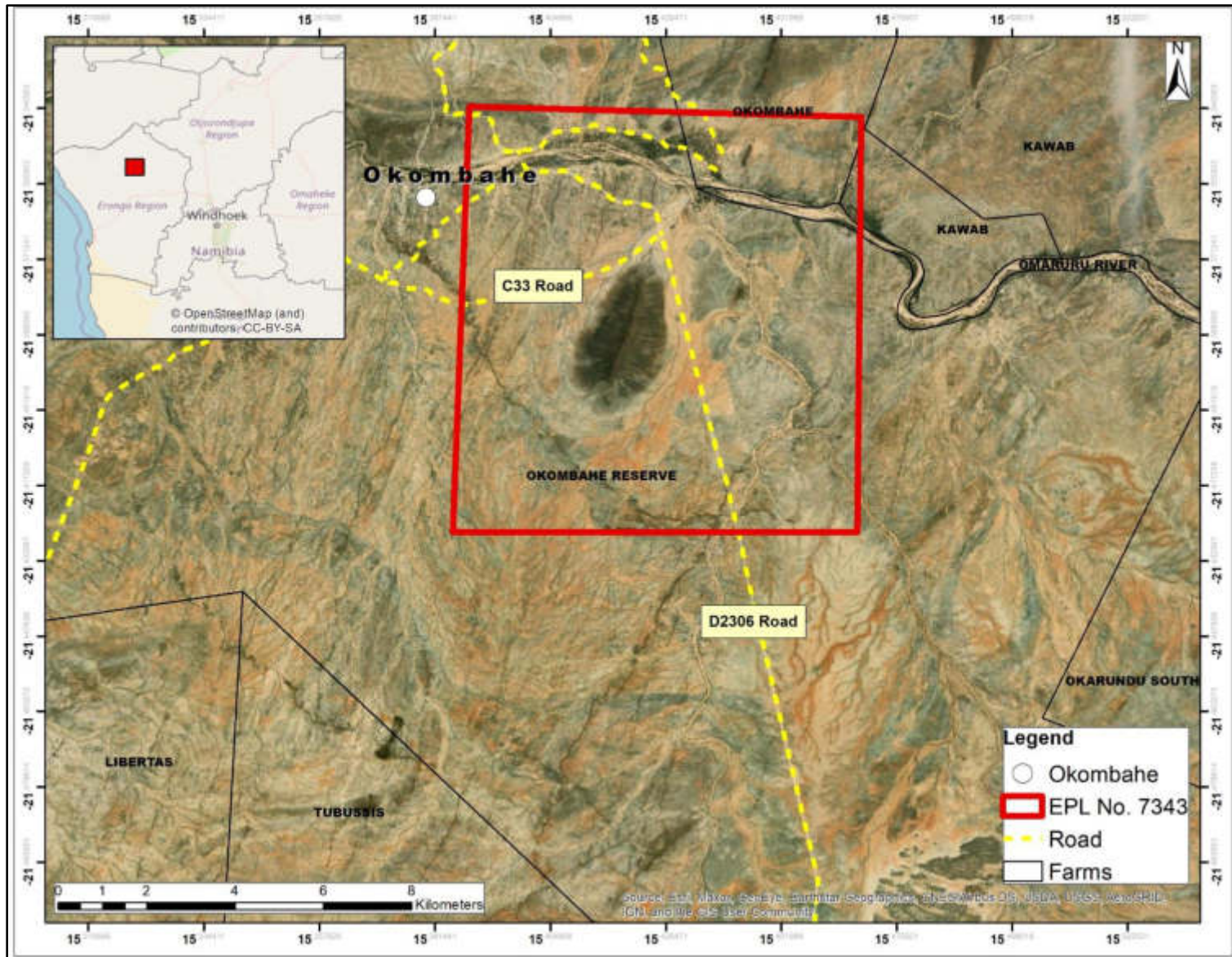


Figure 2: Farms and some land uses covered by EPL 7343 (Source: EDS, 2021)

1.3 EPL 7343 Ownership

The EPL on which the exploration activities are proposed to be undertaken is owned by Timecall Erongo Mining CC. The application for the EPL was submitted in October 2018 and granted by MME on the 28th of August 2019 and due to expire on the 27th of August 2022. However, prior to commencing with the actual works on the EPL, these are subject to an ECC by MEFT.

The status of EPL 7343 at MME is shown on the Namibia Mining Cadastral Portal (upon searching) on this link <https://portals.landfolio.com/namibia/> and as shown on the mining portal in **Figure 3** below.

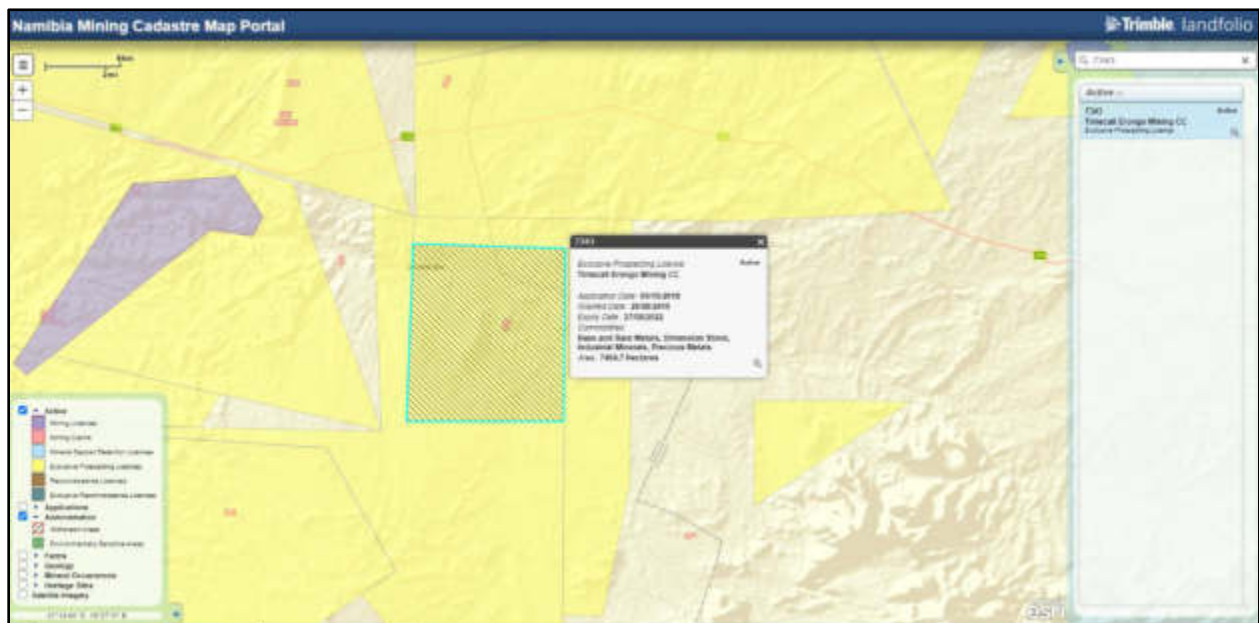


Figure 3: EPL No. 7343 on the mining cadastre portal (source; <https://portals.landfolio.com/namibia/>)

1.4 Appointed Environmental Assessment Practitioner

To satisfy the requirements of the EMA and its 2012 EIA Regulations, the Proponent appointed EDS, to conduct the required EA process on their (Proponent's) behalf. The findings of the EA process are incorporated into this report and the draft EMP - (**Appendix B**) will be submitted as part of an application for an ECC to the Environmental Commissioner at the Department of Environmental Affairs and Forestry (DEAF), MEFT and the Ministry of Mines and Energy (MME) as the Competent Authority of the proposed project and its related activities.

The ESA project is headed by Mr. Nerson Tjelos, a qualified and experienced Geoscientist and experienced EAP. The public consultation process was conducted by Ms Fredrika Shagama. The reporting component of the assessment/study was also done by Ms. Shagama and her CV is presented in **Appendix C**.

1.5 The Need for the Proposed Project

Mining accounts for 12.5% of Namibia's Gross Domestic Product (GDP). The mining industry is one of the largest contributors to the Namibian economy; therefore, it contributes to the improvement of livelihoods. In Namibia, exploration for minerals is done mainly by the private sector. Exploration activities have a great potential to enhance and contribute to the development of other sectors and its activities do provide temporary employment, and taxes that fund social infrastructural development. The minerals sector yields foreign exchange and account for a significant portion of the GDP. Additionally, the industry produces a trained workforce and small businesses that can serve communities and may initiate related businesses. Several associated activities that are fostered include, such as manufacturing of exploration and mining equipment, provision of engineering and environmental services and others. The mining sector forms the vital part of some of Namibia's development plans, namely: Vision 2030, National Development Plan 5 (NDP5) and Harambee Prosperity Plans (HPPs) I and II. Thus, mining is essential to the development goals of Namibia in contributing to meeting the ever-increasing global demand for minerals, and for national prosperity. Therefore, the successful exploration on EPL 7343 would then lead to the quarrying (mining) of Dimension Stone and Precious Metals, which would feed into the national development plans. Hence, the need to undertake the proposed exploration activities on the EPL.

Given the fact that this proposed exploration works, and related activities will create employment opportunities for the local community and contributes to the country's GDP, this justifies the need for exploration works on the EPL to enable future mining works.

2 PROJECT DESCRIPTION: PROPOSED EXPLORATION ACTIVITY

The description of the prospecting and mineral exploration activities, resources, methods, and processes required for the project are described under this chapter (from section 2.1 to 2.3). The project activities will commence after issuance of the ECC by the Environmental Commissioner. The exploration phase is anticipated to last for about three years.

2.1 Proposed Exploration Methods for Precious Metals

The planned exploration activities are aimed at delineating the mineral deposits and determine whether the deposits are economically feasible mining resources.

The prospecting and exploration of minerals are the first components of any potential mining project (development and eventual mining) and this is shown in the general mine life cycle in **Figure 4** below, while the typical mineral exploration cycle is shown **Figure 5**.

2.1.1 Planned Activities: Proposed Exploration Methods

The Proponent intends to adopt a systematic prospecting approach of the following:

- **Non-invasive techniques:** Geological mapping, reviewing of existing geological maps and historical drilling data, Field evaluation and sampling.
- **Invasive techniques:** Soil and rock sampling, trenching/pitting and detailed exploration Reverse Circulation (RC) drilling) for Precious Metals and Down-The-Hole exploration drilling (for Dimension Stone).



Figure 4: Diagram of the Life Cycle of a Mine (after Superfund Research Project, 2019). The phase covered by this study is highlighted with a red box.

2.1.2 Pre-development Phase (Prospecting)

During the prospecting and exploration phase, reviewing existing reports and composite stratigraphic, lithological-geochemical maps of the targeted areas to identify prospective lithostratigraphic packages will be vital. In addition to the literature review, fieldwork (lithological (soil/rock) mapping and sampling) will be conducted to verify desktop work. Up to this point, no physical soil/land disturbance is required. Prospecting during the advanced exploration phase will require the Proponent to assess the EPL areas through detailed geological mapping, rock sampling and soil geochemical surveys, supported where necessary by ground and airborne geophysical surveys, to define targets for test drilling. Upon issuing of the ECC, the exploration program will commence with ground geophysical surveys. The planned ground geophysical

surveys may last several weeks and will be done in stages on different parts of the site (the EPL).

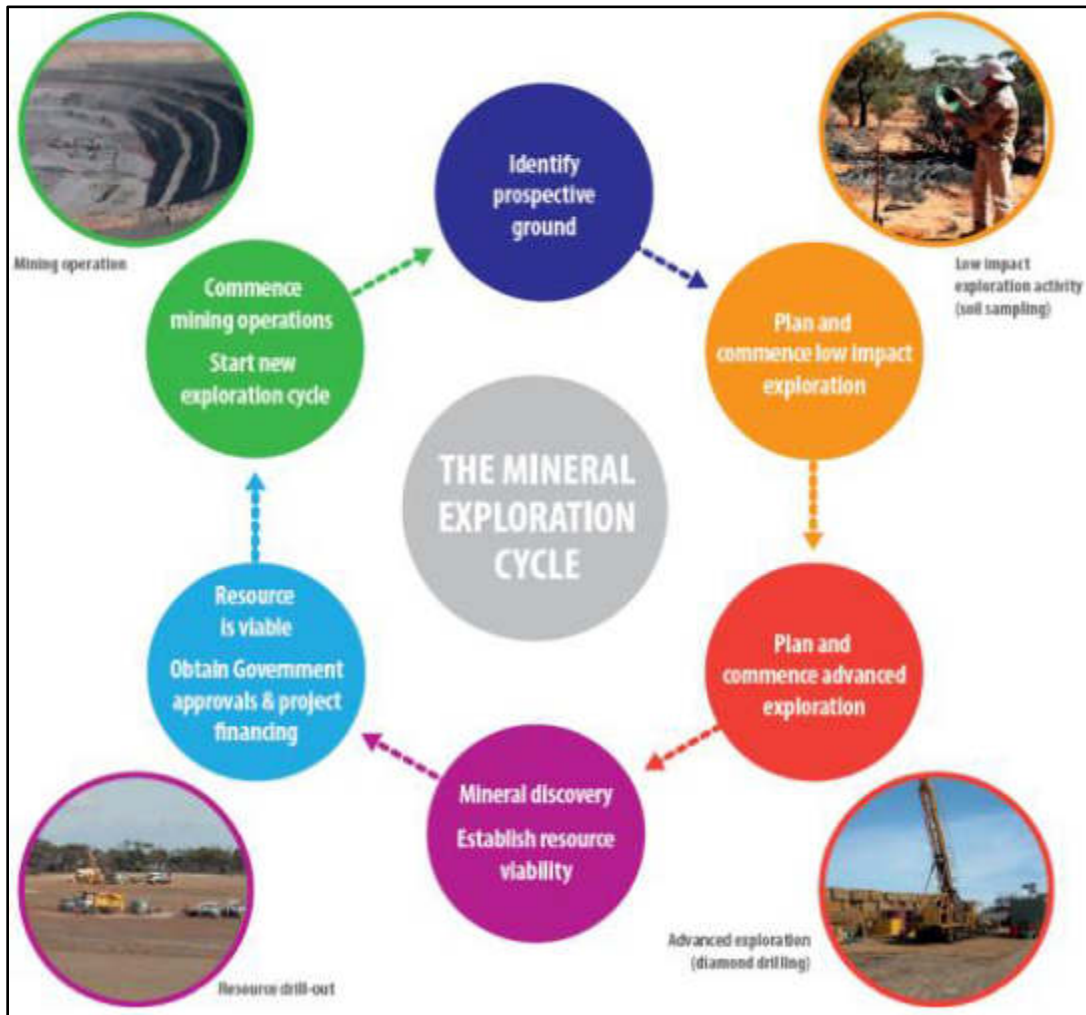


Figure 5: The mineral exploration cycle (after, Savannah Resources, 2019)

The refined geological map would then assist in target generation for subsequent detailed exploration such as drilling in the next phase of exploration.

2.1.3 Exploration: Drilling, Sampling and Analysis Phase

Once the target areas have been selected and verified under the prospecting phase, detailed exploration works will follow. This will include drilling of exploration boreholes, sampling, and analysis. The Proponent has highlighted that both invasive and non-invasive exploration activities are expected to take place upon issuance of an ECC. Non-invasive activities include geological field mapping and ground-based surveys, while invasive activities involve soil geochemistry survey and rock sampling, trenching, and drilling. The preferred drilling technique

for this exploration programme is Reverse Circulation (RC) Drilling. RC drilling uses a pneumatic hammer, which drives a rotating tungsten-steel bit. The technique produces an uncontaminated large volume sample, which is comprised of rock chips. It is relatively quick and cheap when compared to other techniques like Diamond Drilling. However, diamond drilling may also be considered for this exploration programme, during advanced stages of exploration if large amounts of sample material may be required for analysis and to perform processing trials.

The selection of the potential mineralization model and exploration targets will be based on the local geology, trenching, drilling, and assay results of the samples collected. No explosives will be used during the exploration phase.

2.2 Proposed Exploration Methods for Dimension Stone

The Proponent intends to adopt a systematic prospecting approach of the following:

- **Non-invasive techniques:** Geological mapping, reviewing of existing geological maps and historical drilling/quarrying data, Field evaluation and sampling; and
- **Invasive techniques:** Detailed exploration (Down-The-Hole drilling).

The proposed activities are summarized as follows.

2.2.1 Desktop Study

The exploration program will commence with a review of geological maps and historical drilling and/ or quarrying data for the area, if any.

2.2.2 Field Evaluation

The field evaluation is to be carried out by a qualified geologist, aimed at locating suitable host rock outcrops in the field from where the:

- General soundness (intactness).
- Appearance (patterns and colour); and
- Joint and vein spacing can be evaluated.

According to OMAVI Geotechnical & Geo-Environmental Consultants (2020), small samples (about 30 cm³ in dimension) will be removed for cutting and polishing to provide insights on whether the stone can be polished to an acceptable finish, as well as to give an indication of the hardness of the stone from a sawing and finishing point of view. Where field evaluation indicates a potentially economical viable deposit, detailed geological mapping will be conducted by means of mapping transversely across exposed / cleaned segments of the rock unit. Where

cleaning of the rock unit is required to aid geological mapping, air compressors will be used to expose the rock. The mapping is aimed at delineating major geological structures such as fault and shear zones (zones of weakness), the extent of veins, as well as further delineation of fracture / discontinuity frequencies.

Collectively, field evaluation and detailed geological mapping will result in the production of a refined and detailed geological map for the targeted sites on the EPL.

2.2.3 Detailed Exploration

The refined geological map would then assist in target generation for subsequent detailed exploration such as drilling and possibly test quarrying. A typical drill rig used for this type of exploration drilling is shown in **Figure 6** below.



Figure 6: A typical example of a Down-The-Hole drill rig (OMAVI, 2020)

A vertical and inclined core drilling with a down-the hole (DTH) drill rig will be carried out in selected areas to provide information on the:

- Vertical extent of the host formation.
- Color and texture.
- Joint spacing or
- Possible defects at depth.

It is anticipated that drilling activities will require a small (6m wide) tracked access roads to gain access to the actual exploration drilling sites for the air compressor and water truck.

2.2.4 Feasibility Study: Test Quarrying (Exploration Component)

Where exploration drilling yields positive results, test quarrying by means of butterfly cutting will be conducted. This will be done to fully evaluate the recovery of saleable blocks, and better optimize the extraction methods, production rates and operational costs in future. The exploration test quarrying will only be carried out on select targeted areas of the EPL and shall be performed on as small areas as possible to minimize environmental impacts that are associated with test quarrying. The outcomes / results of the test quarrying will be recorded and archived by the Proponent for future use (when mining will be considered depending on the outcome of exploration).

It is important to note that the test quarrying referred to above is only a component of exploration activities, to be done at a very small-scale level on targeted sites of the EPL to enable the Proponent to get sufficient and reliable exploration data, but not for mining purposes. Therefore, this ESA process and its subsequent reporting will only cover exploration activities.

2.2.5 Project aspects and resources requirements

Other aspects and resources requirements of the exploration operations include:

- **Accessibility to Sites:** the EPL is accessible from the main C36 via D2315 road, with D2306 passing through the EPL. The EPL is then accessed via local access (gravel and single track sandy) roads. Therefore, the project related vehicles will be using these existing roads to access the EPL. It is also anticipated that, if necessary, onsite new tracks to the different targeted exploration sites within the EPL will be created. The Proponent may need to do some upgrade on the site access road to ensure that it is fit to accommodate project related vehicles, such as heavy trucks.
- **Project Equipment, Material, Machinery and Vehicles (Dimension Stone):** 4X4 pickup trucks, butterfly cutter, long distance haulage and dump trucks, diamond wire-saw cutter and coring equipment, excavator / front-end loader to scoop up sandy overburden, dozers (to clear vegetation along planned drilling site access roads, Down-The-Hole (DTH) Drilling rig, drilling fluids stored in manufacturers approved containers, air compressors, diesel generator for power supply, and two-way radios for constant communication on site.
- **Project Equipment, Material, Machinery and Vehicles (Precious Metals):** Two 4X4 vehicles, one truck, two 10,000-litre water tanks, RC Drill rigs, and drilling machines,

drilling fluids stored in manufacturers approved containers, power generator, diesel generator for power supply, and two-way radios for constant communication on site.

- **Human Resources:** Around ten (10) people will be employed on site during the exploration phase. The workforce will include both skilled, semi and unskilled people, as necessary to complete the work. The workforce/crew will include one or two geologists, driller, sampling team, supervisor, casual workers to clear the sites and perform other required jobs onsite, excavator/bulldozer operators for test quarrying, cleaner(s), truck and light vehicle drivers, etc.
- **Personnel accommodation:** the exploration workforce will be accommodated in tented camps within the EPL boundaries, upon reaching an agreement and a consent is signed between the Proponent and the respective landowner or custodian (traditional authority) prior to setting up accommodation structures (camps).
- **Working Space (Administration and Control):** Movable shade facility near the working spots and prefabricated temporary offices will be erected on site (subject to approval of landowner/custodian or authority).
- **Services and Infrastructure:**
 - **Water:** Around 20 tons (20,000 litres) of water will be required for the activities per month (for Dimension Stone exploration only). The water will be stored in two 10,000-litre industry standard water storage tanks onsite that will be refilled as and when necessary. This water will be used for cooling down and washing of equipment, drilling related activities, and ablution. The water will be sourced from elsewhere and transported to site. Therefore, no project related water abstraction will be done onsite or within the site area.

Potable water will also be made available for the exploration crew (workers) on site.
 - **Fuel supply: (for personnel use to cook):** The Proponent will provide firewood or fuel to be used for food preparation by the site workers. No firewood will be collected on the farms or neighbouring land, without the owners or authority's permission.
 - **Fuel (machinery and equipment):** Diesel will be used for machinery and equipment and fuel generator. A trailer mounted 10,000-litre fuel tank will be onsite to ensure an interrupted fuel supply. According to the order of commodity exploration, this tank will be only for Dimension Stone. In

other words, each commodity exploration will have its own fuel tank supplied onsite during its duration of activities.

- **Waste Management:** Waste management: the different waste will be handled as follows:
 - **Sewage:** Portable ablution facilities with septic tanks will be provided on site and emptied according to manufacturers' instructions. The wastewater will then be transported offsite to the treatment facility either by the Proponent or a designated/appointed external waste management contractor.
 - **General and domestic waste:** enough 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 landfill site, when necessary (upon reaching full capacity of the main waste container onsite).
 - **Hazardous waste:** All vehicles, machinery and fuel consuming equipment will be provided with drip trays to capture potential fuel spills and waste oils. The waste fuel/oils 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.

The waste produced on-site can also be categorized as mineral or non-mineral waste:

- **Mineral Waste:** Consists of solid products of exploration and mineral concentration to acquire the targeted minerals. Mineral waste will potentially be produced throughout the project exploration phase. This waste will be stripped and dumped in allocated areas as stipulated in the EMP.
- **Non-mineral Waste:** Consists primarily of auxiliary materials that will support the exploration phase. This includes but is not limited to items such as empty containers, plastic and other domestic waste. This waste will be collected, sorted, and taken to the dumpsite regularly, depending on the amount of waste generated.
- **Potential Accidental Fire Outbreaks:** A minimum of basic firefighting equipment, i.e., two fire extinguishers will be readily available in vehicles, at the working sites and campsite.

- **Health and Safety:** Adequate and appropriate Personal Protective Equipment (PPE) will be provided to every project personnel while on and working at site. A minimum of two first aid kits will be readily available on site to attend to potential minor injuries.
- **Project site security:** Temporary storage areas for exploration material, equipment and machines will be required at the campsite and/or exploration sites. Security will be supplied on a 24-hour basis at the delegated sites for storage. A temporary support fence surrounding the storage/campsite will be constructed to ensure people and domestic animals are not put at risk.

2.3 Decommissioning and Rehabilitation Phase

2.3.1 Precious Metals

Once the exploration activities on the EPL come to an end, the Proponent will need to put site rehabilitation measures in place. Decommissioning and rehabilitation are primarily reinforced through a decommissioning and rehabilitation plan, which consists of safety, health, environmental, and contingency aspects. The economic situation or unconvincing exploration results might force the Proponent to cease the exploration program before predicted closure. Therefore, it is of best practice for the Proponent to ensure the project activities are ceased in an environmentally friendly manner and site is rehabilitated by carrying out the following:

- Dismantling and removal of campsites and associated structures from the project site and area
- Carrying away of exploration equipment and vehicles
- Removal of drilling casting, and/ or concrete plinths
- Clean up of site working areas and transporting the recently generated waste to the nearby approved waste management facility (as per agreement with the facility operator/owner).

2.3.2 Dimension Stone

The impact on the physical environment, especially by Dimension Stone exploration works can be lessened by planning with future decommissioning of explored sites in mind. Therefore, towards the end of each exploration activity on worked/explored sites of the EPL, progressive / ongoing rehabilitation will be carried out by the Proponent. This can be achieved through rock shading (for Dimension Stone), and partial backfilling of boreholes and trenches with topsoil and

waste rocks. The aim is to ensure that the disturbed sites are left close to their pre-exploration state as much as possible

Further decommissioning and rehabilitation practice onsite will include:

- Backfilling of exploration pits and trenches and boreholes
- Levelling of stockpiled topsoil. This will be done to ensure that the disturbed land sites are left close to their pre-exploration state as much as possible.

The rehabilitation and decommissioning referred to herein also entails the dismantling and removal of campsite, and associated structures from the project sites and area.

3 PROJECT ALTERNATIVES

Alternatives are defined as the “*different means of meeting the general purpose and requirements of the activity*” (EMA, 2007). This section will highlight the different ways in which the project can be undertaken and to identify the alternative that will be the most practical, but least damaging to the environment is identified.

Once the alternatives have been established, these are examined by asking the following three questions:

- What alternatives are technically and economically feasible?
- What are the environmental effects associated with the feasible alternatives?
- What is the rationale for selecting the preferred alternative?
- The alternatives considered for the proposed development are discussed in the following subsections.

3.1 Types of Alternatives Considered

3.1.1 The "No-go" Alternative

The “no-go” alternative implies that the status quo remains, and nothing happens. Should the proposal to explore on the EPL be discontinued, none of the potential impacts (positive and negative) identified would occur. If the proposed project is to be discontinued, the current land use for the proposed site will remain unchanged.

This option was considered and a comparative assessment of the environmental and socio-economic impacts of the “no action” alternative was undertaken to establish what benefits might be lost if the project is not implemented. The key losses that may never be realized if the proposed project does not go ahead include:

- Loss of foreign direct investment.
- About 10 job opportunities for community members will not be realized.
- No realization of local businesses supports through the procurement of consumable items such as Personal Protective Equipment (PPE), machinery spare parts, lubricants, etc.
- Loss of potential income to local and national government through land lease fees, license lease fees and various tax structures.
- Improved geological understanding of the site area regarding the targeted commodities.
- Socio-economic benefits such as skills acquisition to local community members would be not realized.

Considering the above losses, the “no-action/go” alternative was not considered a viable option for this project.

3.1.2 Exploration Location

The prospecting/exploration location is dependent on the geological setting (regional and local), the economic geology, and the exploration and mining history of the EPL area. Therefore, finding an alternative location for the planned exploration activities is not possible. This means that the mineralization of the target commodities (Dimension Stone and Precious Metals) is area-specific, which means exploration targets are primarily determined by the geology (host rocks) and the tectonic environment of the site (an ore-forming mechanism). The tenement has sufficient surface area for future related facilities should an economic mineral deposit be defined.

Furthermore, the national mineral resources’ potential locations are also mapped and categorised by the Ministry of Mines and Energy in exclusive prospecting licenses, mining licenses and claims, mineral deposit retention licenses, reconnaissance licenses and exclusive reconnaissance licenses. Available information on EPL 7343 and other licenses are available on the Namibia Mining Cadastral Map here <https://portals.landfolio.com/namibia/>.

3.1.3 Exploration Methods

Both invasive and non-invasive exploration activities are expected to take place. If an economically viable discovery is made, the project will proceed to the mining phase upon approval of a mining EIA and issuance of a mining license. If any other alternative viable exploration methods are found to achieve the purpose more effectively and/or efficiently without aggravating any environmental measures put in place, it can be implemented.

3.1.4 Supporting Services Infrastructure

Alternatives were considered for the different supporting infrastructures envisaged to ensure that the most feasible options were selected. Due consideration was given to technological, economic, and environmental limitations in selecting the most feasible option. The alternative considered in this regard are presented in **Table 1** below.

Table 1: The presentation of service infrastructure and structures (technical resources) alternatives considered for the project

Category of Infrastructure	Alternatives Considered	Justification for selected option
Ablution facilities	Install fixed facility with septic tank	-To avoid long-term visual impacts & minimize rehabilitation costs portable facilities were selected as the best option
	Portable facilities with septic tank	
Shade Structure for working areas	Shade structure made from blue/ red corrugated sheets	-Shade structure made from corrugated sheets deemed most suitable due to robustness, & resistance to wind destruction
	Shade structure made with shade net	
Water supply	Bring water from elsewhere	-Water will be brought from elsewhere
Diesel storage	Trailer mounted diesel tank	-During exploration use trailer mounted diesel tank for fuel storage due to great mobility requirements during exploration.
Power supply	Diesel generator set	-Most practical & economically viable for exploration
Offices, accommodation	Erect dis-mantable prefabricated units	Favoured due to: (a) Ease of installation, (b) Low installation costs and (c) Ease of dismantling & moving
	No office, accommodation structures on site	

4 LEGAL FRAMEWORK: LEGISLATION, POLICIES AND GUIDELINES

A review of applicable and relevant Namibian legislation, policies, and guidelines to the proposed development is given in this section. This review serves to inform the project Proponent, Interested and Affected Parties, and the decision-makers at the DEAF of the requirements and expectations, as laid out in terms of these instruments, to be fulfilled to establish the proposed prospecting and exploration activities.

4.1 The Environmental Management Act (No. 7 of 2007)

This EIA was carried out according to the Environmental Management Act (EMA) and its Environmental Impact Assessment (EIA) Regulations (GG No. 4878 GN No. 30).

The EMA has stipulated requirements to complete the required documentation in order to obtain an Environmental Clearance Certificate (ECC) for permission to undertake certain listed activities. These activities are listed under the following Regulations:

- **3.1 The construction of facilities for any process or activities which requires a license, right of other forms of authorization, and the renewal of a license, 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 Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 4878) detail requirements for public consultation within a given environmental assessment process (GN 30 S21). The EIA regulations also outline the required details of a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15).**

4.2 Other crucial legal requirements governing the proposed project

Other legal obligations that are relevant to the proposed activities of EPL No. 7343 and related activities are presented in **Table 2**.

Table 2: Applicable local, national and international standards, policies and guidelines governing the proposed exploration works and related activities.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
The Constitution of the Republic of Namibia, 1990 as amended	<p>The Constitution of the Republic of Namibia (1990 as amended) addresses matters relating to environmental protection and sustainable development. Article 91(c) defines the functions of the Ombudsman to include:</p> <p>“...the duty to investigate complaints concerning the over-utilisation of living natural resources, the irrational exploitation of non-renewable resources, the degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia...”</p> <p>Article 95(l) commits the state to actively promoting and maintaining the welfare of the people by adopting policies aimed at the:</p> <p>“...Natural resources situated in the soil and on the subsoil, the internal waters, in the sea, in the continental shelf, and in the exclusive economic zone are property of the State.”</p>	<p>By implementing the environmental management plan, the establishment will be in conformant to the constitution in terms of environmental management and sustainability.</p> <p>Ecological sustainability will be main priority for the proposed development.</p>
Nature Conservation Amendment Act, No. 3 of 2017	<p>National Parks are established and gazetted in accordance with the Nature Conservation Ordinance, 1975 (4 of 1975), as amended. The Ordinance provides a legal framework with regards to the permission of entering a state protected area, as well as requirements for individuals damaging objects (geological, ethnological, archaeological and historical) within a protected area. Though the Ordinance does not specifically refer to mining as an activity within a protected area (PA) or recreational area (RA), it does restrict access to PA's and prohibits certain acts therein as well as the purposes for which permission to</p>	<p>The Proponent will be required to enhance the conservation of biodiversity and the maintenance of the ecological integrity of protected areas and other State land</p>

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
	enter game parks and nature reserves may be granted.	
The Parks and Wildlife Management Bill of 2008	Aims to provide a regulatory framework for the protection, conservation, and rehabilitation of species and ecosystems, the sustainable use and sustainable management of indigenous biological resources, and the management of protected areas, to conserve biodiversity and in order to contribute to national development.	
Minerals (Prospecting and Mining) Act (No. 33 of 1992)	<p>Section 52 requires mineral license holders to enter into a written agreement with affected landowners before exercising rights conferred upon the license holder.</p> <p>Section 52(1) mineral licence holder may not exercise his/her rights in any town or village, on or in a proclaimed road, land utilised for cultivation, within 100m of any water resource (borehole, dam, spring, drinking trough etc.) and boreholes, or no operations in municipal areas, etc.), which should individually be checked to ensure compliance.</p> <p>Section 54 requires written notice to be submitted to the Mining Commissioner if the holder of a mineral license intends to abandon the mineral license area.</p> <p>Section 68 stipulates that an application for an exclusive prospecting license (EPL) shall contain the particulars of the condition of, and any existing damage to, the environment in the area to which the application relates and an estimate of the effect which the proposed prospecting operations may have on the environment and the proposed steps to be</p>	<p>The Proponent should enter into a written agreement with landowners before carrying out exploration on their land.</p> <p>The Proponent should carry out an assessment of the impact on the receiving environment.</p> <p>The Proponent should include as part of their application for the EPL, measures by which they will rehabilitate the areas where they intend to carry out mineral exploration activities.</p> <p>The Proponent may not carry out exploration activities within the areas limited by Section 52 (1) of this Act.</p>

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
	<p>taken to prevent or minimize any such effect.</p> <p>Section 91 requires that rehabilitation measures should be included in an application for a mineral license.</p>	
<p>Mine Health & Safety Regulations, 10th Draft</p>	<p>Makes provision for the health and safety of persons employed or otherwise present in mineral licenses area. These deal with among other matters; clothing and devices; design, use, operation, supervision and control of machinery; fencing and guards; and safety measures during repairs and maintenance.</p>	<p>The Proponent should comply with all these regulations with respect to their employees.</p>
<p>Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001)</p>	<p>Regulation 3(2)(b) states that “No person shall possess [sic] or store any fuel except under authority of a licence or a certificate, excluding a person who possesses or stores such fuel in a quantity of 600 litres or less in any container kept at a place outside a local authority area”</p>	<p>The Proponent should obtain the necessary authorisation from the MME for the storage of fuel on-site.</p>
<p>The Regional Councils Act (No. 22 of 1992)</p>	<p>This Act sets out the conditions under which Regional Councils must be elected and administer each delineated region. From a land use and project planning point of view, their duties include, as described in section 28 “to undertake the planning of the development of the region for which it has been established with a view to physical, social and economic characteristics, urbanisation patterns, natural resources, economic development potential, infrastructure, land utilisation pattern and sensitivity of the natural environment.</p>	<p>The relevant Regional Councils are I&APs and must be consulted during the Environmental Assessment (EA) process. The project site falls under the Erongo Regional Council; therefore, they should be consulted.</p>
<p>Local Authorities Act No. 23 of 1992</p>	<p>To provide for the determination, for purposes of local government, of local authority councils; the establishment of such local authority councils; and to define the powers, duties and</p>	<p>The Okombahe Settlement Office is the responsible Local Authority of the area therefore</p>

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
	functions of local authority councils; and to provide for incidental matters.	they should be consulted.
Traditional Authority Act (Act No. 25 of 2000)	<p>Namibian legislation recognizes both statutory and customary forms of governance. The Traditional Authorities Act recognizes Traditional Authorities (TAs), as the customary leadership of traditional communities as legal entities.</p> <p>The primary functions of these authorities are to promote peace and welfare amongst the community members, as well as to supervise and ensure the observance of the customary law of that community by its members.</p> <p>The Act also stipulates that 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 leaderships, the Chiefs, to exercise control on behalf of the state and the residents in their designated area.</p>	The EPL is under the which are communal farms under the !Oe-#Gan Traditional Authority. As such this TA is a key I&AP and will therefore be provided with the opportunity to comment on the proposed project and issue a consent letter.
Water Act 54 of 1956	<p>The Water Resources Management Act 11 of 2013 is presently without regulations; therefore, the Water Act No 54 of 1956 is still in force:</p> <p>Prohibits the pollution of water and implements the principle that a person disposing of effluent or waste has a duty of care to prevent pollution (S3 (k)).</p>	The protection (both quality and quantity/abstraction) of water resources should be a priority.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
	<p>Provides for control and protection of groundwater (S66 (1), (d (ii))).</p> <p>Liability of clean-up costs after closure/abandonment of an activity (S3 (l)). (l)).</p>	
Water Resources Management Act (No 11 of 2013)	<p>The Act provides for the management, protection, development, use and conservation of water resources; and provides for the regulation and monitoring of water services and to provide for incidental matters. The objects of this Act are to:</p> <p>(a) Ensure that the water resources of Namibia are managed, developed, used, conserved and protected in a manner consistent with, or conducive to, the fundamental principles set out in Section 66 - protection of aquifers, Subsection 1 (d) (iii) provide for preventing the contamination of the aquifer and water pollution control (Section 68).</p>	
National Heritage Act No. 27 of 2004	To provide for the protection and conservation of places and objects of heritage significance and 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.	The Proponent should ensure compliance with these Acts requirements. The necessary management measures and related permitting requirements must be taken. This done by the consulting with the National Heritage Council of Namibia.
The National Monuments Act (No. 28 of 1969)	The Act enables the proclamation of national monuments and protects archaeological sites.	
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,	Duty of care must be applied to soil conservation and management measures must be

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
	vegetation and water supply sources and resources, through directives declared by the Minister.	included in the EMP.
Forestry Act (Act No. 12 of 2001)	<p>The Act provides for the management and use of forests and forest products.</p> <p>Section 22. (1) provides: "Unless otherwise authorised by this Act, or by a licence issued under subsection (3), no person shall on any land which is not part of a surveyed erven of a local authority area as defined in section 1 of the Local Authorities Act, 1992 (Act No. 23 of 1992) cut, destroy or remove - (a) vegetation which is on a sand dune or drifting sand or on a gully unless the cutting, destruction or removal is done for the purpose of stabilising the sand or gully; or (b) any living tree, bush or shrub growing within 100 m of a river, stream or watercourse."</p>	The proponent will apply for the relevant permit under this Act if it becomes necessary.
Public Health Act (No. 36 of 1919)	Section 119 states that "no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health."	The Proponent and all its employees should ensure compliance with the provisions of these legal instruments.
Health and Safety Regulations GN 156/1997 (GG 1617)	Details various requirements regarding health and safety of labourers.	
Atmospheric Pollution Prevention Ordinance (1976)	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, apart from East Caprivi, is proclaimed as a controlled area for the	The proposed project and related activities should be undertaken in such a way that they do not pollute or compromise the surrounding air

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
	purposes of section 4(1) (a) of the ordinance.	quality. Mitigation measures should be put in place and implemented on site.
Hazardous Substance Ordinance, No. 14 of 1974	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 provides for the importing, storage, and handling.	The Proponent should handle and manage the storage and use of hazardous substances on site so that they do not harm or compromise the site environment
Road Traffic and Transport Act, No. 22 of 1999	The Act provides for the establishment of the Transportation Commission of Namibia; for the control of traffic on public roads, the licensing of drivers, the registration and licensing of vehicles, the control and regulation of road transport 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.	Mitigation measures should be provided for, if the roads and traffic impact cannot be avoided, the relevant permits must be applied for.
Labour Act (No. 6 of 1992)	Ministry Of Labour, Industrial Relations and Employment Creation is aimed at ensuring harmonious labour relations through promoting social justice, occupational health and safety and enhanced labour market services for the benefit of all Namibians. This ministry insures effective implementation of the Labour Act no. 6 of 1992.	The Proponent should ensure that the prospecting and exploration activities do not compromise the safety and welfare of workers.

4.3 International Policies, Principles, Standards, Treaties and Conventions

The international policies, principles, standards, treaties, and conventions applicable to the project are as listed in **Table 3** below.

Table 3: International Policies, Principles, Standards, Treaties and Convention applicable to the project

Statute	Provisions	Project Implications
Equator Principles	<p>A financial industry benchmark for determining, assessing, and managing environmental and social risk in projects (August 2013). The Equator Principles have been developed in conjunction with the International Finance Corporation (IFC), to establish an International Standard with which companies must comply with to apply for approved funding by Equator Principles Financial Institutions (EPFIs). The Principles apply to all new project financings globally across all sectors.</p> <p>Principle 1: Review and Categorization</p> <p>Principle 2: Environmental and Social Assessment</p> <p>Principle 3: Applicable Environmental and Social Standards</p> <p>Principle 4: Environmental and Social Management System and Equator Principles Action Plan</p> <p>Principle 5: Stakeholder Engagement</p> <p>Principle 6: Grievance Mechanism</p> <p>Principle 7: Independent Review</p> <p>Principle 8: Covenants</p> <p>Principle 9: Independent Monitoring and Reporting</p> <p>Principle 10: Reporting and Transparency</p>	<p>These principles are an attempt to: ‘...encourage the development of socially responsible projects, which subscribe to appropriately responsible environmental management practices with a minimum negative impact on project-affected ecosystems and community-based upliftment and empowering interactions.’</p>
The International Finance Corporation (IFC) Performance Standards	<p>The International Finance Corporation’s (IFC) Sustainability Framework articulates the Corporation’s strategic commitment to</p>	<p>The Performance Standards are directed towards clients, providing guidance on how</p>

Statute	Provisions	Project Implications
	<p>sustainable development and is an integral part of IFC's approach to risk management. The Sustainability Framework comprises IFC's Policy and Performance Standards on Environmental and Social Sustainability, and IFC's Access to Information Policy. The Policy on Environmental and Social Sustainability describes IFC's commitments, roles, and responsibilities related to environmental and social sustainability.</p> <p>As of 28 October 2018, there are ten (10) Performance Standards (Performance Standards on Environmental and Social Sustainability) that the IFC requires a project Proponents to meet throughout the life of an investment. These standard requirements are briefly described below.</p> <p>Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts</p> <p>Performance Standard 2: Labour and Working Conditions</p> <p>Performance Standard 3: Resource Efficient and Pollution Prevention and Management</p> <p>Performance Standard 4: Community Health and Safety</p> <p>Performance Standard 5: Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement</p> <p>Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources</p>	<p>to identify risks and impacts, and are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations of the Client (Borrower) in relation to project-level activities. In the case of its direct investments (including project and corporate finance provided through financial intermediaries), IFC requires its clients to apply the Performance Standards to manage environmental and social risks and impacts so that development opportunities are enhanced. IFC uses the Sustainability Framework along with other strategies, policies, and initiatives to direct the business activities of the Corporation to achieve its overall development objectives.</p>

Statute	Provisions	Project Implications
	<p>Performance Standard 7: Indigenous Peoples/Sub-Saharan African Historically Undeserved Traditional Local Communities</p> <p>Performance Standard 8: Cultural Heritage</p> <p>Performance Standard 9: Financial Intermediaries (FIs)</p> <p>Performance Standard 10: Stakeholder Engagement and Information</p> <p>A full description of the IFC Standards can be obtained from</p> <p>http://www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-standards?cq_ck=1522164538151#ess1</p>	
<p>The United Nations Convention to Combat Desertification (UNCCD) 1992</p>	<p>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.</p> <p>The convention objective is to forge a global partnership to reverse and prevent desertification/land degradation and to mitigate the effects of drought in affected areas to support poverty reduction and environmental sustainability United Nation Convention</p>	<p>The project activities should not be such that they contribute to desertification.</p>
<p>Convention on Biological Diversity 1992</p>	<p>Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use.</p> <p>Promote the protection of ecosystems,</p>	<p>Removal of vegetation cover and destruction of natural habitats should be avoided and where not possible minimised</p>

Statute	Provisions	Project Implications
	natural habitats, and the maintenance of viable populations of species in natural surroundings	
Stockholm Declaration on the Human Environment, Stockholm (1972)	It 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.

Relevant international Treaties and Protocols ratified by the Namibian Government.

- Convention on International Trade and Endangered Species of Wild Fauna and Flora (CITES), 1973.
- Convention on Biological Diversity, 1992.
- World Heritage Convention, 1972.

5 ENVIRONMENTAL BASELINE

The proposed exploration programme will be undertaken in specific environmental and social conditions. Understanding the pre-project conditions of the environment will aid in laying down background "information" of the status quo and future projections of environmental conditions after proposed works on the EPL. This also helps the EAP in identifying the sensitive environmental features that may need to be protected through the recommendations and effective implementation of mitigation measures provided. The summary of selected biophysical and social baseline information about the prospecting area is given below.

The baseline information presented below is sourced from a variety of sources including reports of studies conducted in the Erongo Region, as well as those done in the surrounding areas. Further information was obtained by the Consultant during the site visit.

5.1 Climate

Okombahe is situated within a transition zone between a semi-arid climate and an arid climate due to its geographic location in the escarpment between the Namib Desert and the Central

Plateau. The arid conditions are as a result of dry descending air and upwelling of the cold Benguela Current (Erongo Consulting Group, 2020).

5.1.1 Rainfall

Rainfall in the Okombahe Area is mostly expected from December to March, with March experiencing the highest rainfall days at an average of about 19 days and February with the highest precipitation of about 190 mm. There is little or no rainfall is expected around April to October each year. Similarly, according to NamWater (2020), Okombahe receives rain in summer months, occurring usually between December and April. Rainfall ranges between 150mm and 200mm, and the relative humidity is 20% - 30%. **Figure 7** below shows the rainfall graphs for the project area.

The 12-year period of rainfall received, the highest was in 2011 which was recorded at about 410 mm that year and the second highest rainfall record was at 198 mm in 2021 as shown in the second graph of **Figure 7**

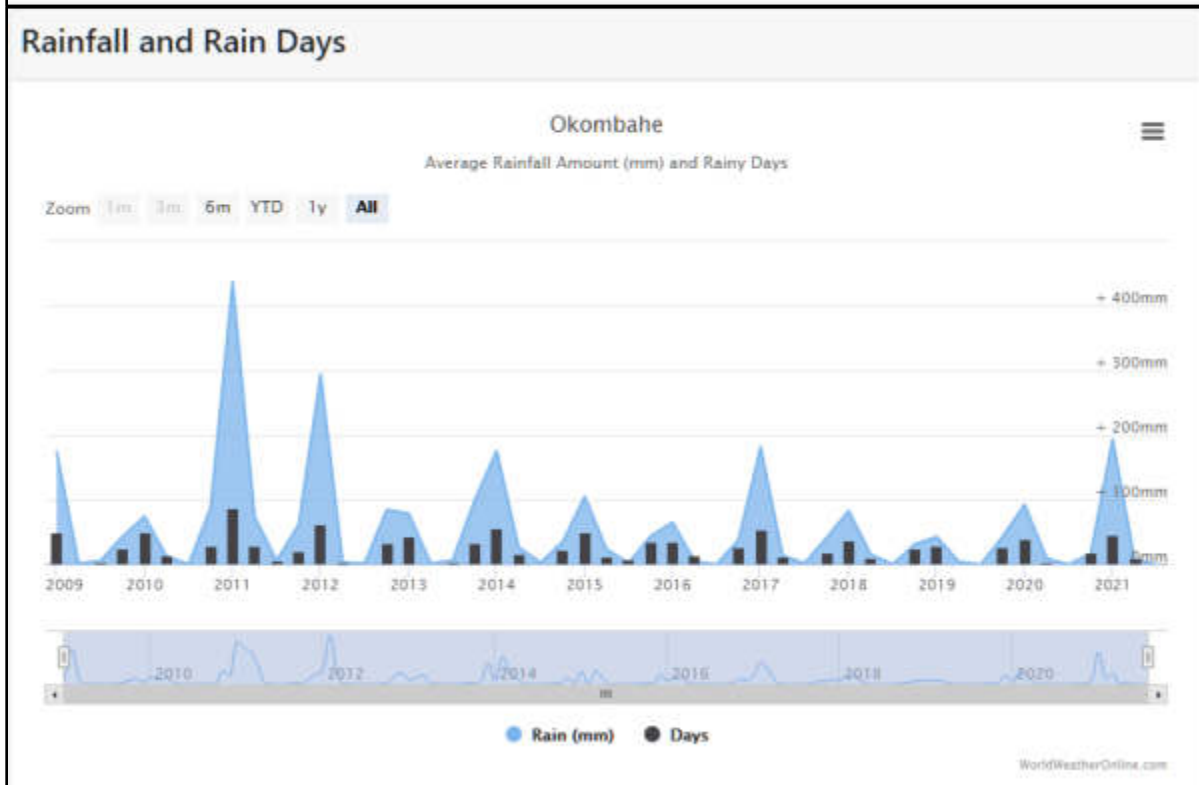
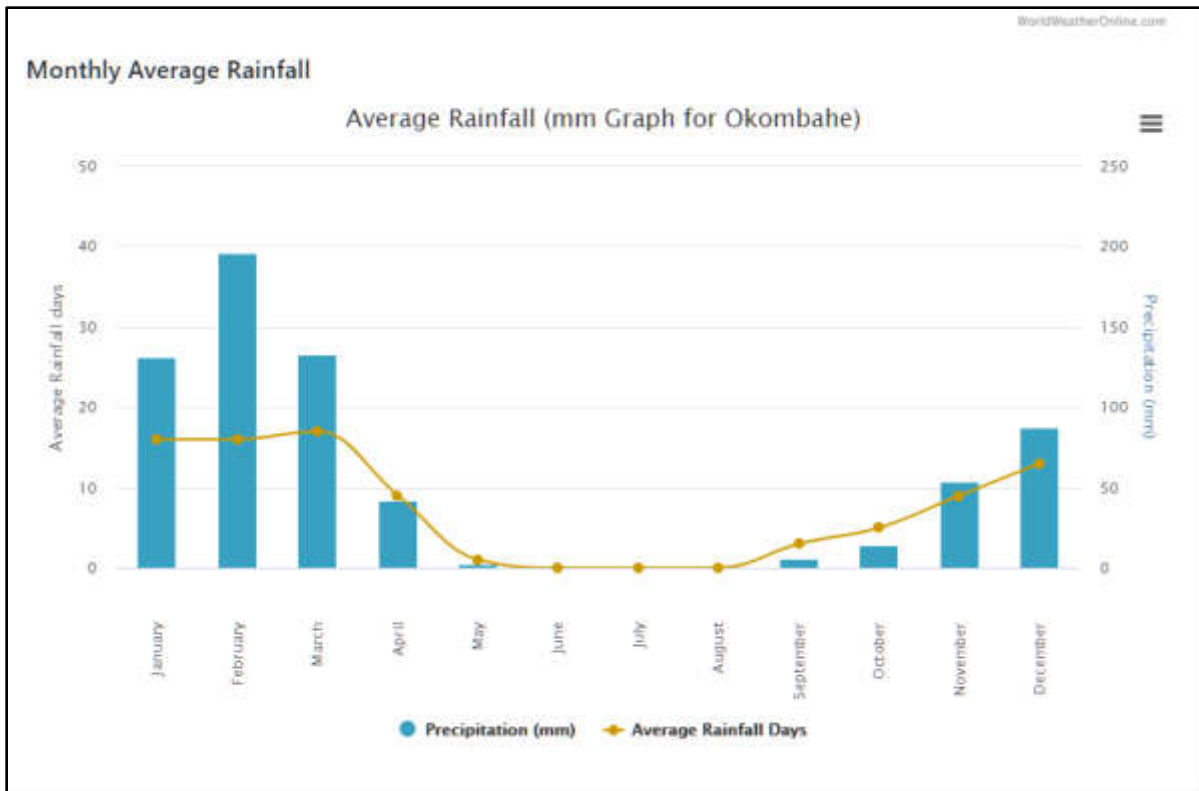


Figure 7: The monthly average rainfall, rainfall and rain days in Okombahe (Source: World Weather Online, 2021)

5.1.2 Temperature

The Okombahe area has average maximum temperatures ranging between 24 °C in March/April and 19.3 °C in September. The average minimum temperatures are between 16.5 °C in February and 9.1°C in August (Erongo Consulting Group, 2020). **Figure 8** below shows minimum and maximum temperature for a 12-year-period, i.e. 2009 to 2021.

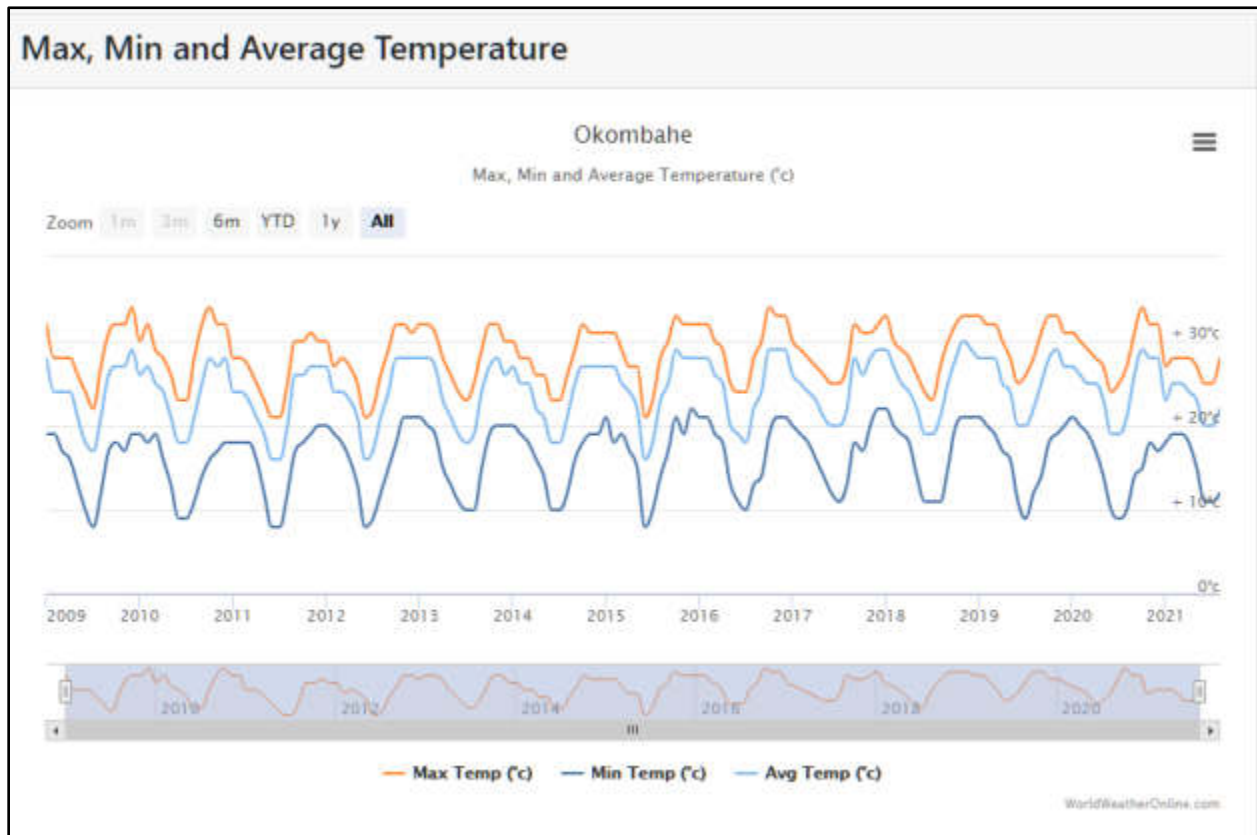


Figure 8: Maximum, minimum and average temperature patterns for Okombahe (Source: World Weather Online, 2021)

5.1.3 Air and Winds

According to Erongo Consulting Group (2020), as the Namibian interior is warm (particularly in summer), localised low-pressure systems are created which draws the cold southerly winds towards the inland desert areas, these winds manifest themselves in the form of strong prevailing south-westerly winds, which range from an average of 20 knots (37 km/h) during winter months to as high as 60 knots (110 km/h) during the summer. Winds near Okombahe area display two main trends; high velocity and frequency south to south-westerly winds in summer and high velocity, low frequency east to north-easterly winds during winter. During winter, the east winds generated over the hot Namib Desert have a strong effect on

temperature, resulting in temperature in the upper 30 degrees Celsius and tend to transport plenty of sand. The maximum, average wind speed and gust for Okombahe are shown in **Figure 9**.

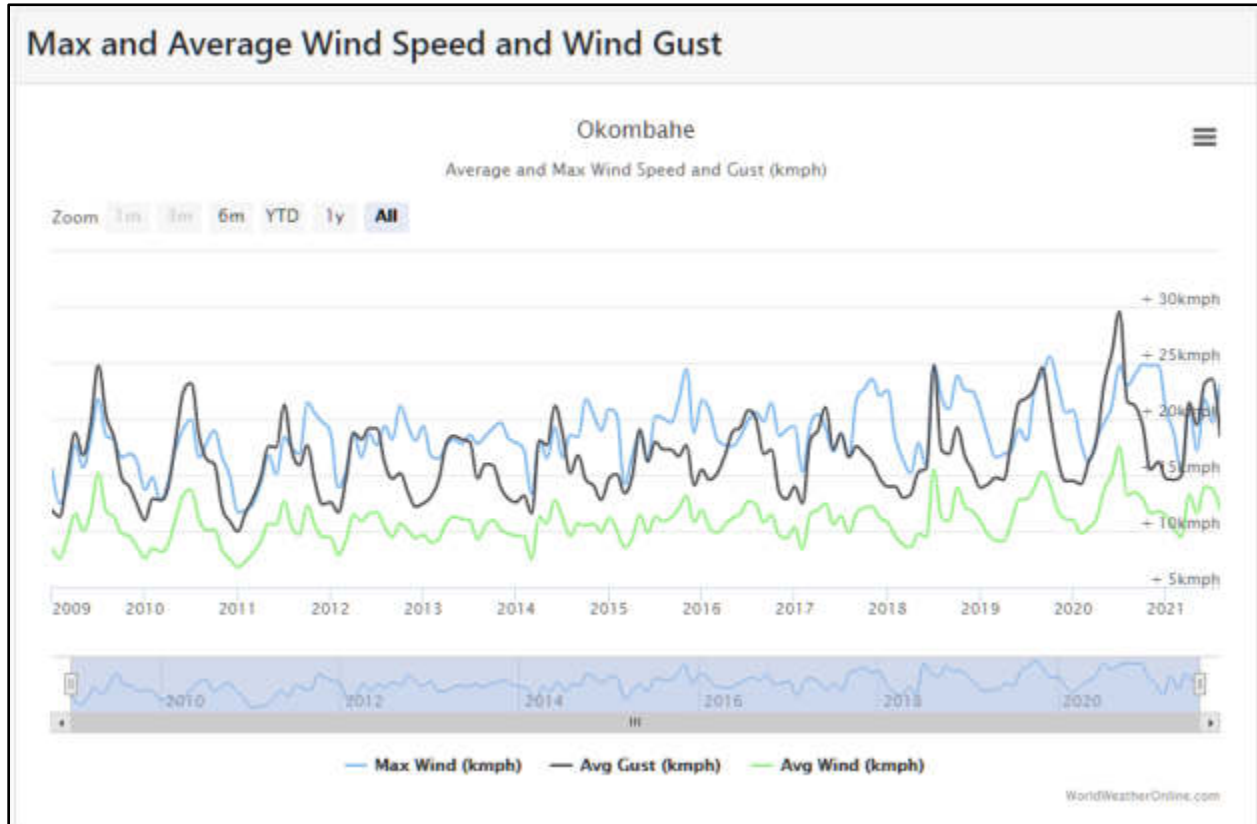


Figure 9: The maximum, average wind speed and gust for Okombahe (Source: World Weather Online, 2021)

With regards to wind, its predominant direction in the Region (as shown on the wind rose in **Figure 10**) is from western-south-west (WSW). Seasonal variations to the northeast (NE). The wind rose indicates that due to seasonal variations there is a significant amount of wind from east to the west. The speed at which the wind blows from the indicated directions is also shown. For instance, the predominant wind speed WSW blows within the speed range of 10 and 35 kilometres per hour (km/h).

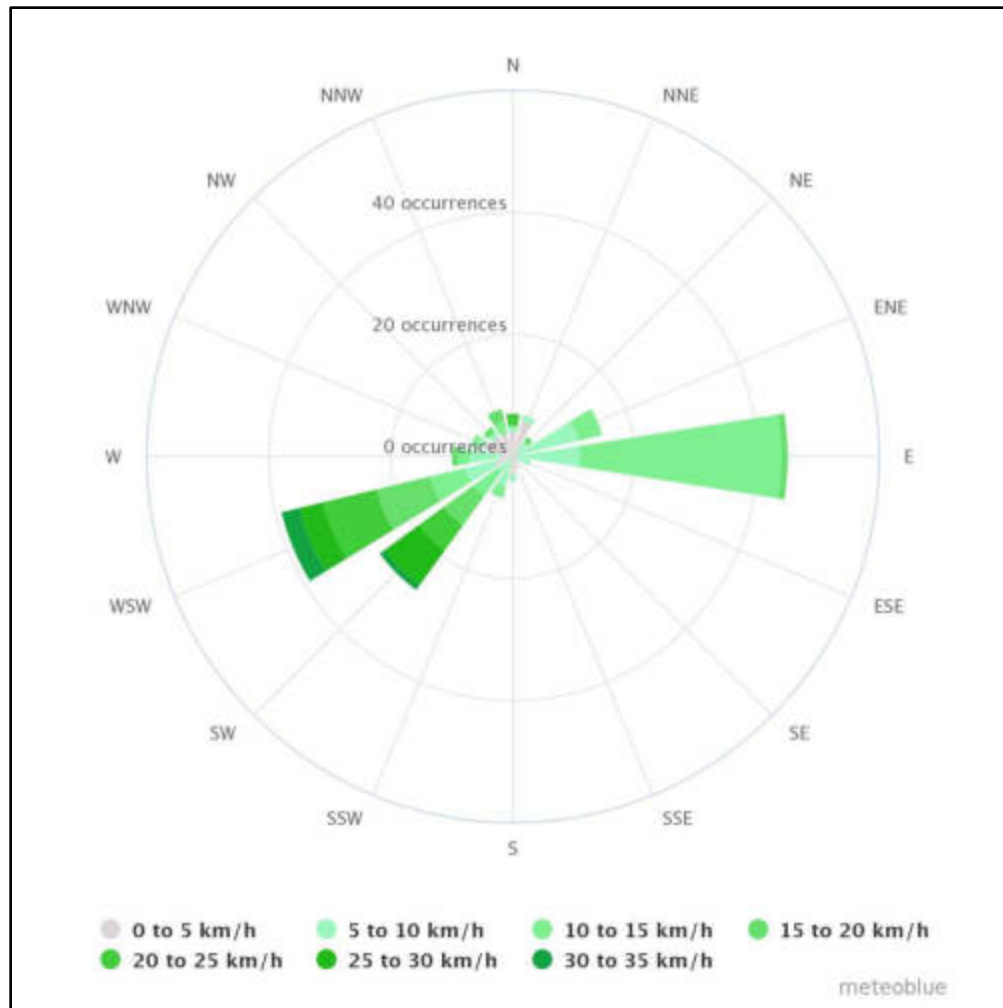


Figure 10: Wind rose for Okombahe (Source: Meteoblue, 2021)

5.2 Topography

The Erongo Region is characterised by gravel plains and rocky outcrops. According to Christelis and Struckmeier (2011), morphologically, the Central Namib is a steeply inclined plain, rising from sea level to 1 000 m in less than 100 km. There is a conspicuous gap in the Great Escarpment in this area and in its place are isolated mountains and inselbergs. **Figure 11** shows the Elevation Model of the EPL and surrounding areas.

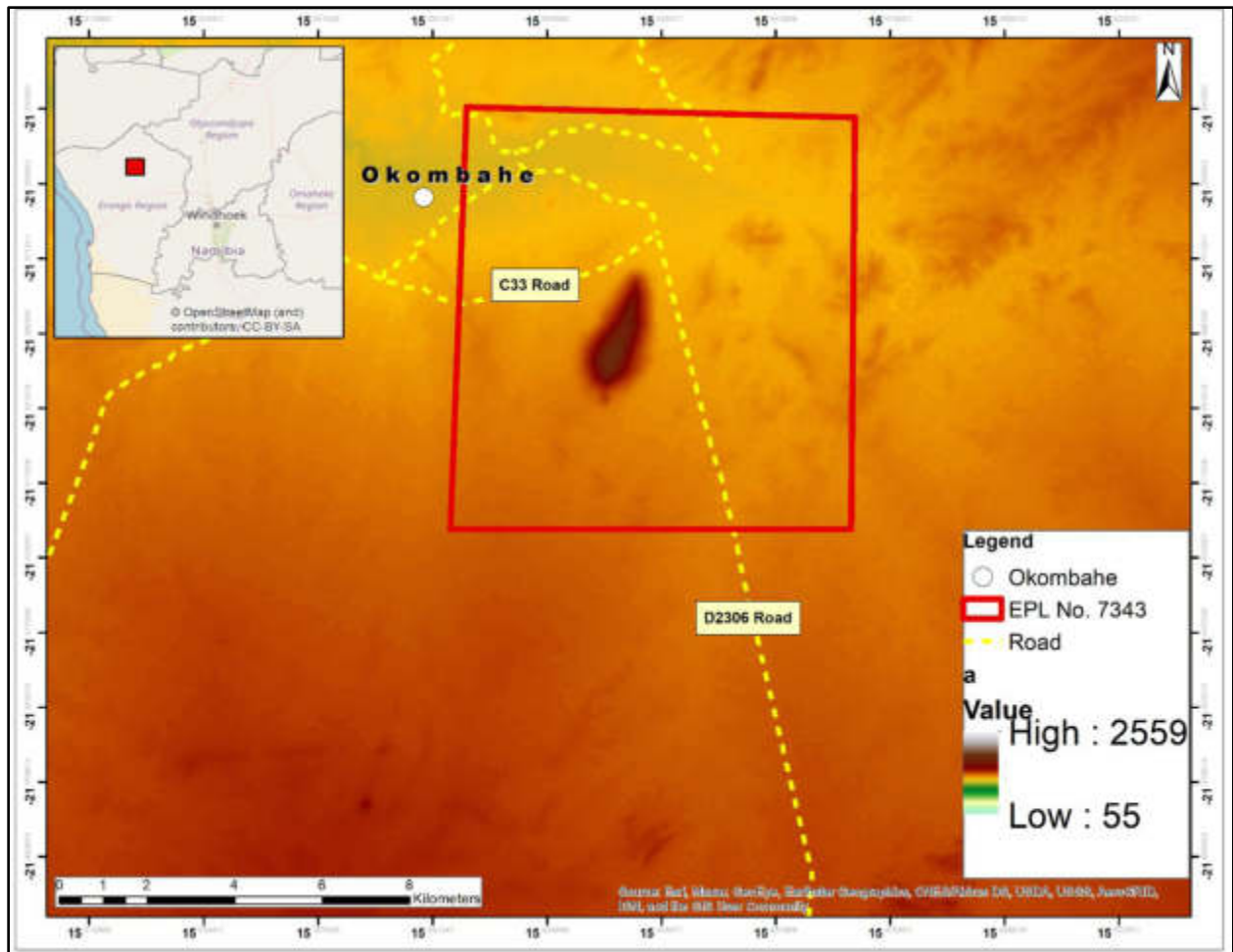


Figure 11: Elevation 3D Model of the project area (Source: EDS, 2021)

The simplified topographic image (with elevations) of Okombahe is shown in **Figure 12** below. The //Khan-hêb Mountain located in the middle of the EPL is enclosed by the brown ellipse west of Okombahe Settlement and the Settlement approximated by the black ellipse.

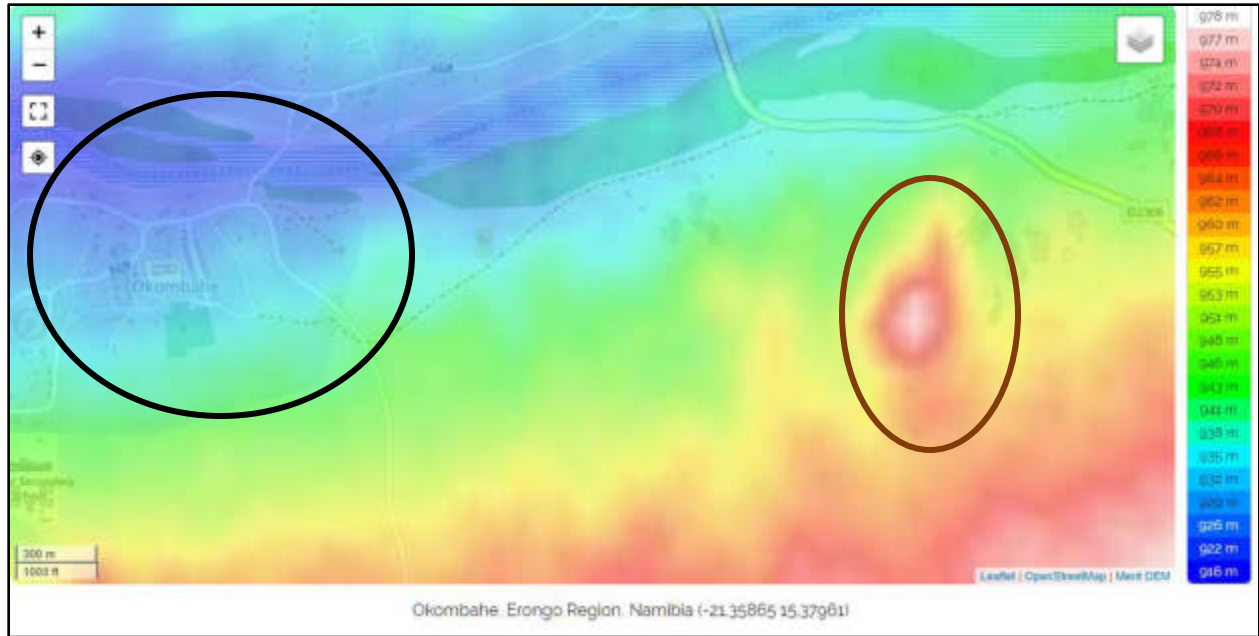


Figure 12: Topographic image of Okombahe and western part (Source: <https://en-gb.topographic-map.com/maps/oytr/Okombahe/>)

The Okombahe Area and project site are relatively flat with some random mountains overlooking the settlement to the east (the locally well-known //Khan-hêb Mountain), western and southern side (**Figure 13 -left photo**). The northern side of the EPL is characterized by flat areas with small inselbergs – **Figure 13 -right photo**.



Figure 13: Topography of the EPL area

5.3 Soils

The soils of the Namib Desert are known as “syrosem” and calcareous soils. The syrosem soils were formed when solid rock is exposed, mainly broken down by mechanical weathering). Rock fragments and exfoliation chips gather around the outcrops, where they undergo further processes of weathering. The calcareous (from limestone) soils were formed during a pluvial period when a minimum of groundwater was available (GCS Water & Environmental Consultants, 2017).

Soils are absent on rocky slopes, which are often covered with weathered material, while the soils of the Namib gravel plains are generally rich in gypsum. Calcretes cover a large part of the transition zone between desert and savanna (Christelis and Struckmeier, 2011).

According to the map in **Figure 14** below, the dominant soils on the EPL are petric Calcisols that cover about 90% of the EPL and the remaining 10% covered by eutric Regosols.

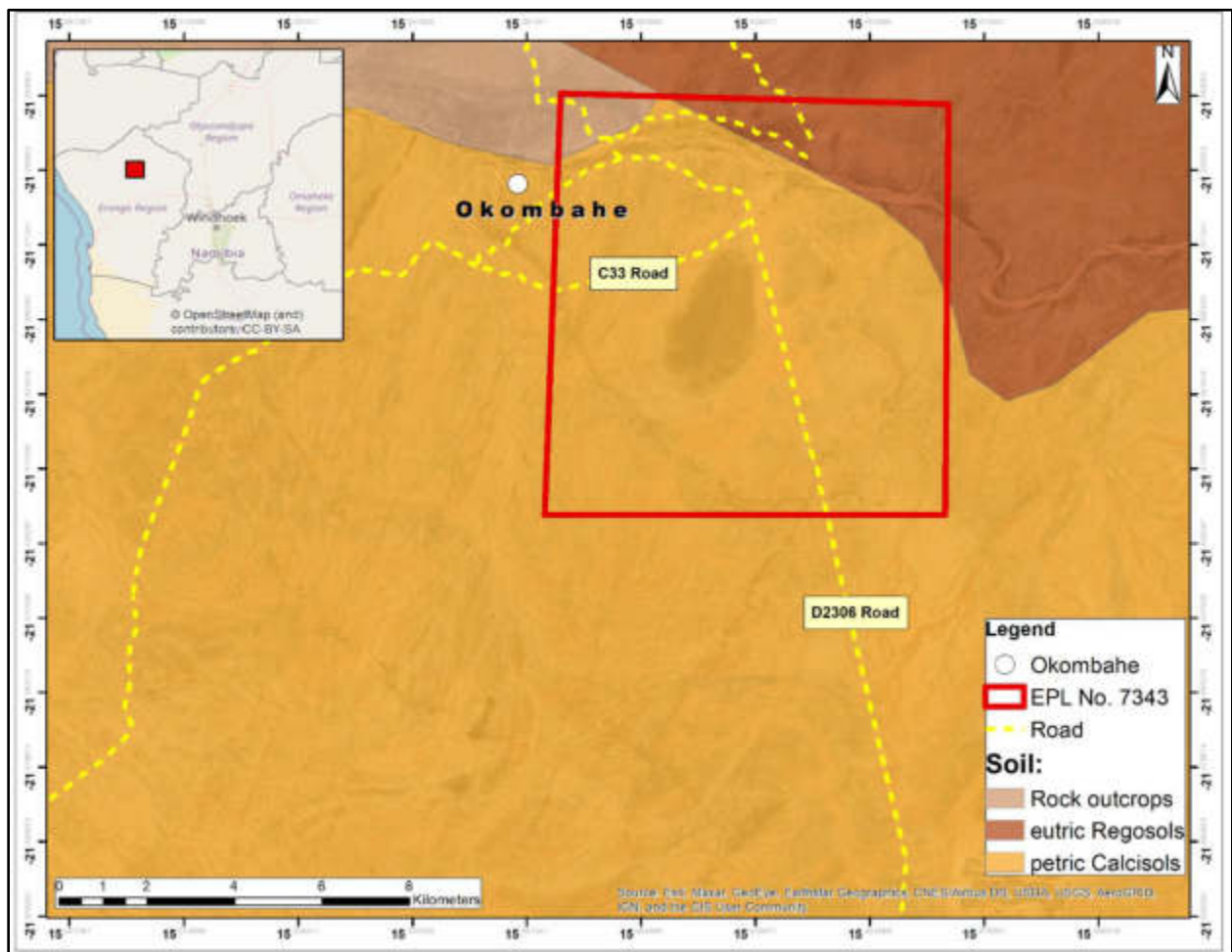


Figure 14: The map of dominant soil types found within the EPL (Source: EDS, 2021)

The site soils are light brown sand overlain by gravel and calcrete in some places with sparsely distributed grass cover (**Figure 15**). The soils close to the //Khan-hêb Mountain foot are highly influenced by the geology.



Figure 15: Common soils on the EPL (light brown sand and gravel)

5.4 Geology

The Central Namibia of which Okombahe is part is essentially underlain by the inland, northeast-trending, ensialic branch of the well-documented late Proterozoic/early Palaeozoic, Pan-African Damara Orogen.. Early Proterozoic (1.8-2.0 Ga) basement gneiss lithologies crop out in a series of inliers that floor the orogen, the most prominent being the Abbabis Inlier. The pre-Damaran basement comprises both meta-sedimentary and metavolcanic rocks, but the most common lithotype is granite gneiss. The Abbabis Inlier is cut by a metadolerite swarm that was probably intruded during the rifting that initiated the Damaran episode. The overlying Damara Sequence comprises the metamorphosed equivalents of fluvial quartzites, limestones, marls, turbidites and shales. Within the Damara Sequence, the proportion of mafic volcanics and banded iron formations, both well documented hosts of gold mineralisation, is small. The Central Namibia has been intruded by numerous granitoids which define the

magmatic belt of the orogen and are concentrated in the Central Zone. In the lower metamorphic grade terrane of the Northern Zone (NZ), the plutons have wide thermal aureoles. Intrusions range in composition from I-type diorites, through S-type granites to rare-element pegmatites, but the overwhelming number of plutons are granitic (*sensu lato*) in composition (Steven *et al.*, 1994).

According to NamWater (2020), intrusive rocks around Okombahe also includes; Erongo Granite, Dykes of Quartz Porphyrite, Quartz Porphyry and Granite-Porphyry.

The rock units underlying the EPL are of the Cambrian and Namibia Formations, that comprise marbles, schists, quartzite, graphitic schists and granites as shown on the map in **Figure 16**. The geology and nature of the rock units found around Okombahe, specifically the eastern side of Okombahe where the EPL lies make them favourable and of great potential to prospect and explore for the targeted commodities (Dimension Stone and Precious Metals).

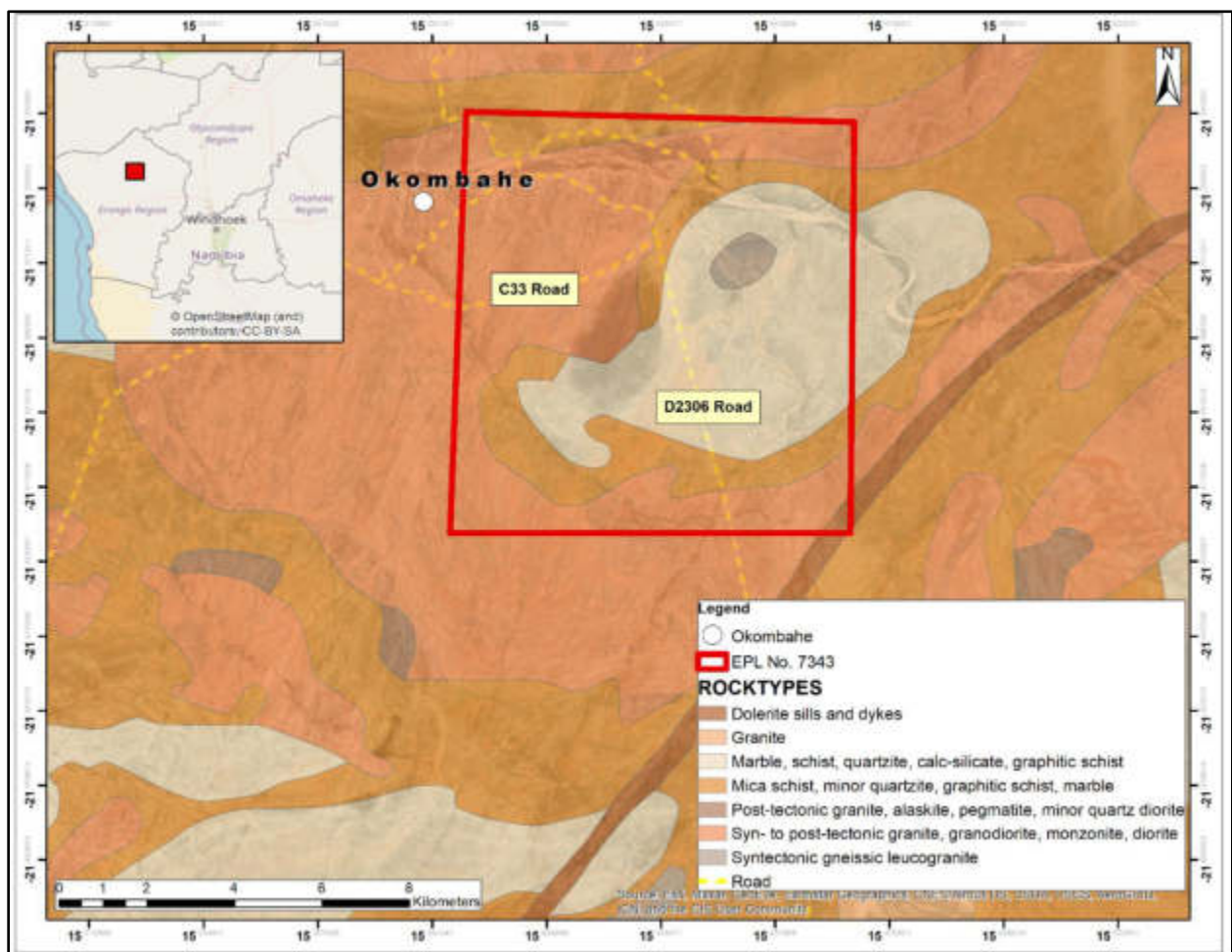


Figure 16: The geology map of the EPL and surrounding areas (Source: EDS, 2021)

5.5 Water Resources

5.5.1 Hydrology (Surface Water) and Hydrogeology (Groundwater)

The EPL lies within an area that is drained by ephemeral rivers within the Ugab catchment and Omaruru River. The noticeable ephemeral rivers running through or nearby the EPL include the major Omaruru (through the Okombahe Settlement in a easterly-westerly direction), Okahandja, Okahere, and Guanos rivers that flow in a westerly direction towards the Atlantic coast, and their tributaries. All the watercourses (ephemeral rivers) within the area can be expected to flow after an exceptional rainfall, but only for a short period of time.

In terms of groundwater, the Okombahe Area falls under the Central Namib-Windhoek Groundwater Basin. The Central Namib -Windhoek region extends from Windhoek in the east to the Atlantic Ocean in the west. The Ugab and Kuiseb rivers form the northern and southern boundaries (Christelis and Struckmeier, 2020).

The sand, gravel and silt deposits in the riverbeds of the Basin are usually 10-30 m thick and have moderate to high yields (Christelis and Struckmeier, 2020). The water resources, in terms of hydrology and hydrogeology) map of the Okombahe area indicates that in **Figure 17** below indicates that the upper part of the EPL is underlain by porous aquifers with the middle to lower parts of the EPL and surroundings underlain by rock units with little groundwater potential.

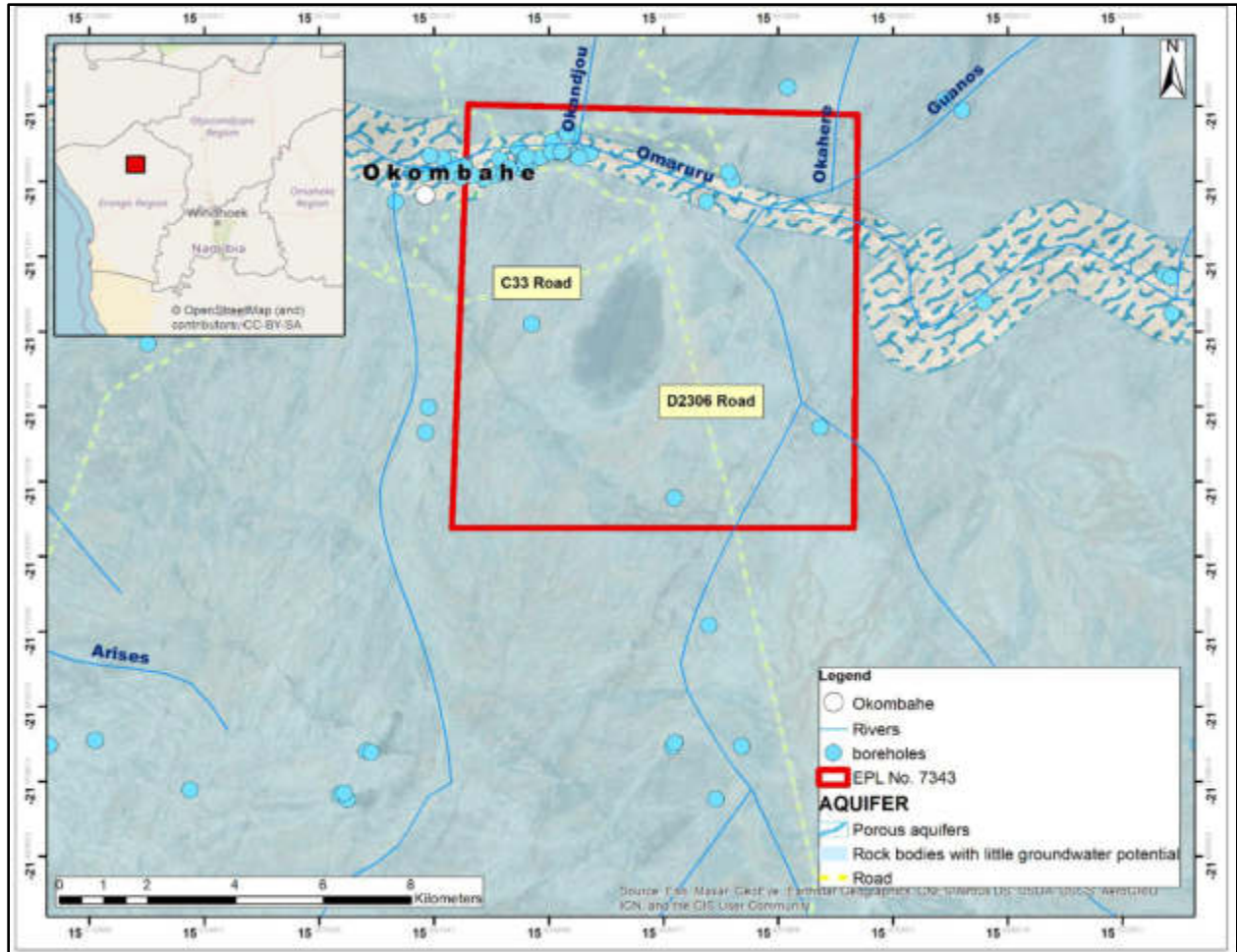


Figure 17: Water resources (hydrology and hydrogeological conditions) on and around the project area (Source: EDS, 2021)

5.5.2 Groundwater Risk to Drought

The use of water resources, particularly groundwater is at a potential risk, and that is from the quantity (abstraction) and quality (pollution) perspective. The potential risk of groundwater impact in the Okombahe Area is shown in **Figure 18** below. The map shows that there a high risk of groundwater drought to the western corner of the EPL boundary and this could be attributed to the fact that the aquifers are more porous on this side of the EPL as indicated in the Figure above). The groundwater risk on the rest of the EPL and surrounding areas is moderate

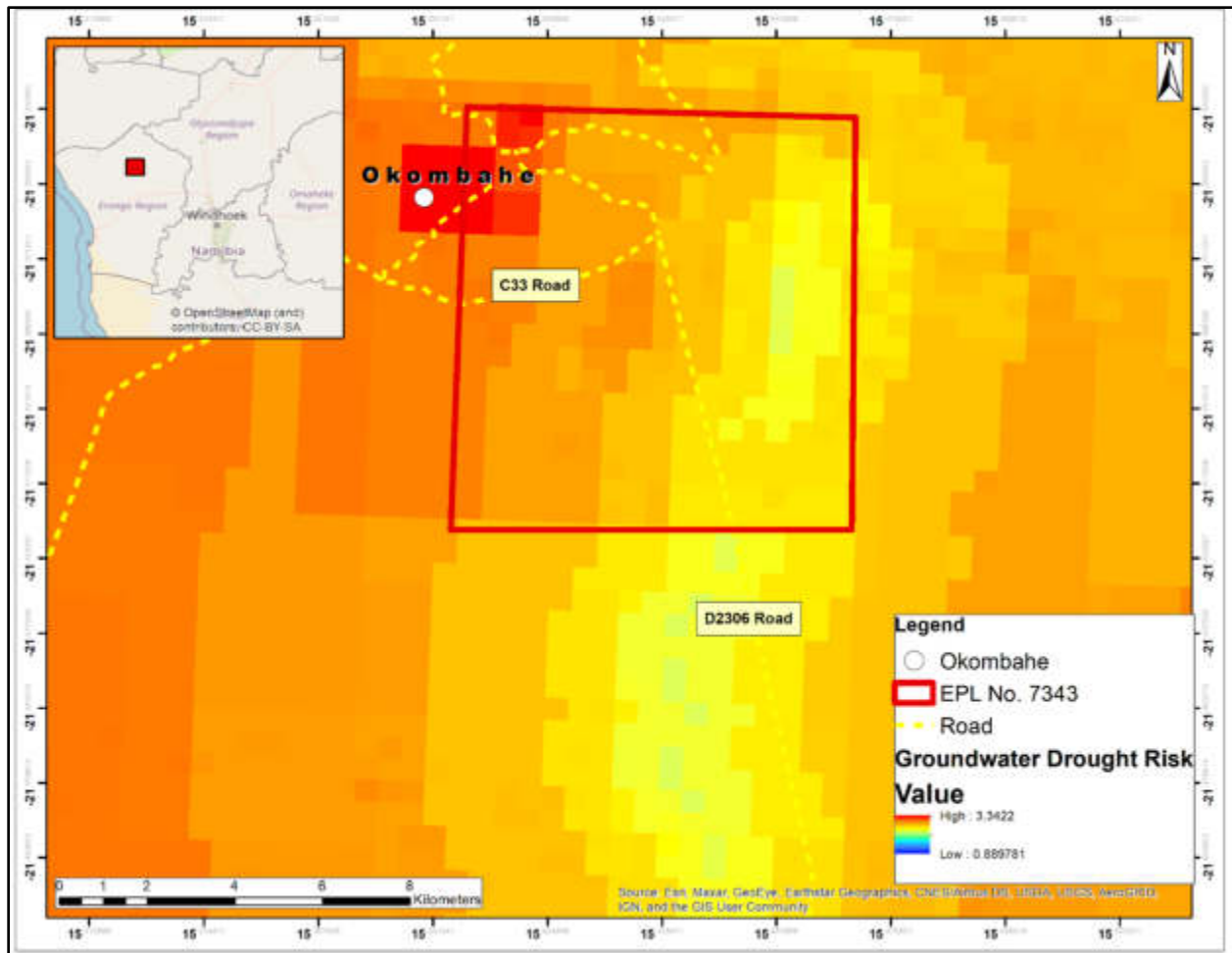


Figure 18: Groundwater Drought Risk map around the project area (Source: EDS, 2021)

5.5.3 Water Sources and Supply

In the Erongo Region, water is supplied in bulk to industries, municipalities by NamWater (the bulk water supplier). NamWater abstracts water from the large Kuiseb River and Omaruru delta (model) aquifers, which is then pumped to several reservoirs that provide water to towns in the Region such as Walvis Bay, Swakopmund, Henties Bay, Arandis and the mining industry. Water in the rural areas is either supplied by the Directorate of Rural Water Supply or through privately owned boreholes on farms (Erongo Regional Council, 2015).

Local Water Supply

In terms of water resources, the vicinity of the EPL and Okombahe are supplied by NamWater. through the Okombahe Water Supply Scheme. The Scheme consists of three boreholes (WW 25885, WW 25886 and WW 25887) that pump water into two reservoirs, one set of elevated

tanks and a concrete ground reservoir with capacities of 40 m³ and 1 000 m³, respectively. From here water is distributed to the consumer reticulation system. The boreholes are between 25 m and 26 m deep. The boreholes yield between 18 m³/h and 22 m³/h (NamWater, 2020. **Figure 19** shows the water supplying scheme around the vicinity of the project area.

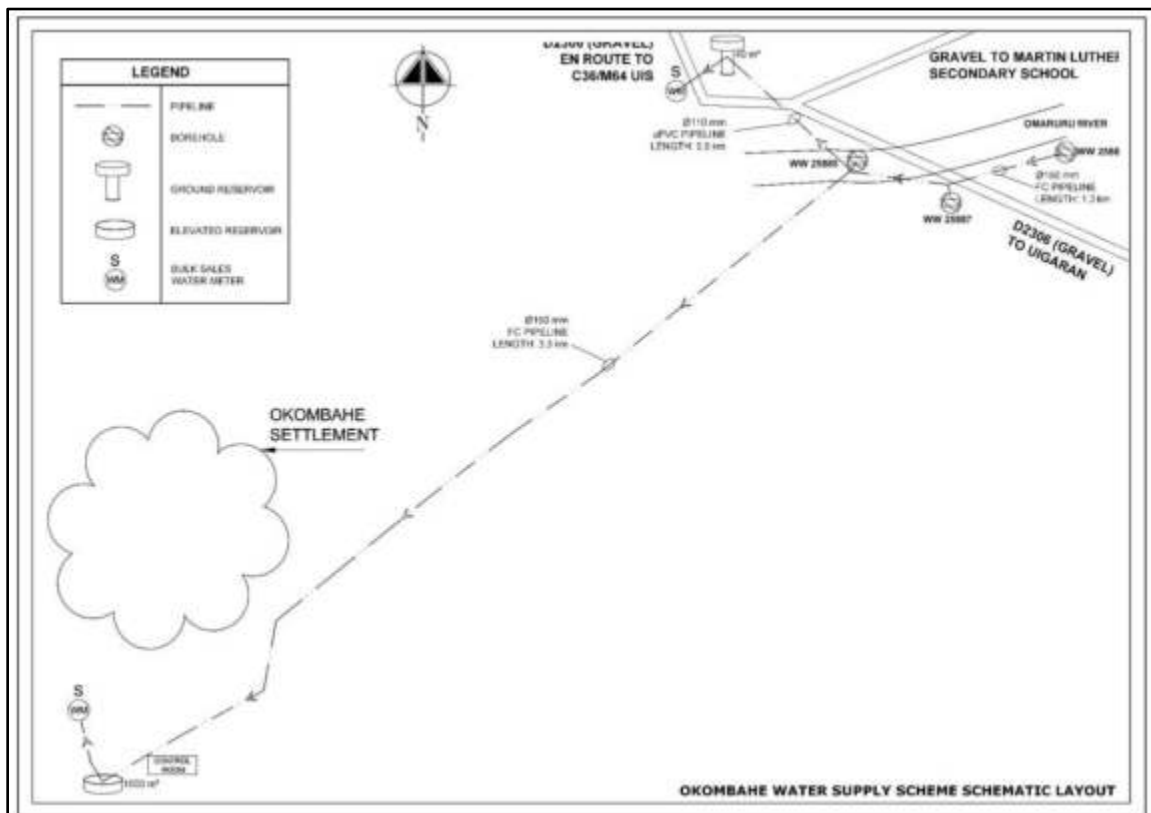


Figure 19: Okombahe Water Supply Scheme Layout (Source: NamWater, 2020)

5.6 Terrestrial Biodiversity: Flora and Fauna

5.6.1 Fauna

Okombahe is found in the western highlands biome regions. The area supports a variety fauna, which including kudu (*Tragelaphus strepsiceros*), springbok (*Antidorcas marsupialis*), gemsbok (*Oryx gazella*), and mountain zebra (*Equus zebra hartmannae*), lion (*Panthera leo*), leopard (*Panthera pardus*), cheetah (*Acinonyx jubatus*), spotted hyena (*Crocuta crocuta*), and brown hyena (*Hyaena brunnea*) (Mendelsohn *et al.*, 2009 as cited by NamWater, 2020). These wild fauna are part of the EPL area as it is located within the Okombahe Reserve, well known as the #Eseb Community Conservancy.

The site visit was conducted during the day and there was no wildlife observed. This however, does not mean that there was no wildlife in the EPL area, but it could be explained by the fact that wildlife was hiding (in shades) of the far vegetation and possibly under rock outcrops, out of sight and away from human presence.

5.6.2 Flora

This area is flatter, harsh and rugged and presents a harder surface than the Coastal Region. These soils have a surface capping scattered with many cobbles and pebbles. This delicate crust supports the small shrub *Arthroerua leubnitzia*, endemic to the Namib. The plant germinates with the occasional rain and is then supported by fog. There is also a diversity of fog-dependent lichens. If this crust is disturbed it may never recover, providing instead another place for erosion to begin when the rain eventually falls. In this area where the lichen crusts often constitute the dominant plant growth, any vehicle tracks seemingly last forever. Gray's lark (*Ammomanes grayi*), is endemic to the gravel plains (Erongo Consulting Group, 2020).

Mendelson 2009, as cited by NamWater (2020), around Okombahe, the dominant vegetation structure is known as varied shrubland and grasslands. It however supports a diversity of natural flora such as: the devil's claw (*Harpagophytum procumbens* subsp. *procumbens*), tsamma melon (*Citrullus lanatus*) welwitschia (*Welwitschia mirabilis*), quiver tree (*Aloe dichotoma*), and the red-thorn (*Acacia reficiens*).

Site vegetation

The EPL site area as indicated in the map below (**Figure 20**) and according to site observations on the northern, eastern and western side of the //Khan-hêb Mountain, is covered mainly by camelthorn shrubs (red-thorn (*Acacia reficiens*) and few trees in some areas (**Figure 21**). The areas on and close to the foot of the Mountain is dominated by thick trunk covered in creamy smooth bark young shrubs known as kobas (*Cyphostemma currorii*), commonly found along the foot (slope) of the mountains as shown in **Figure 22**.

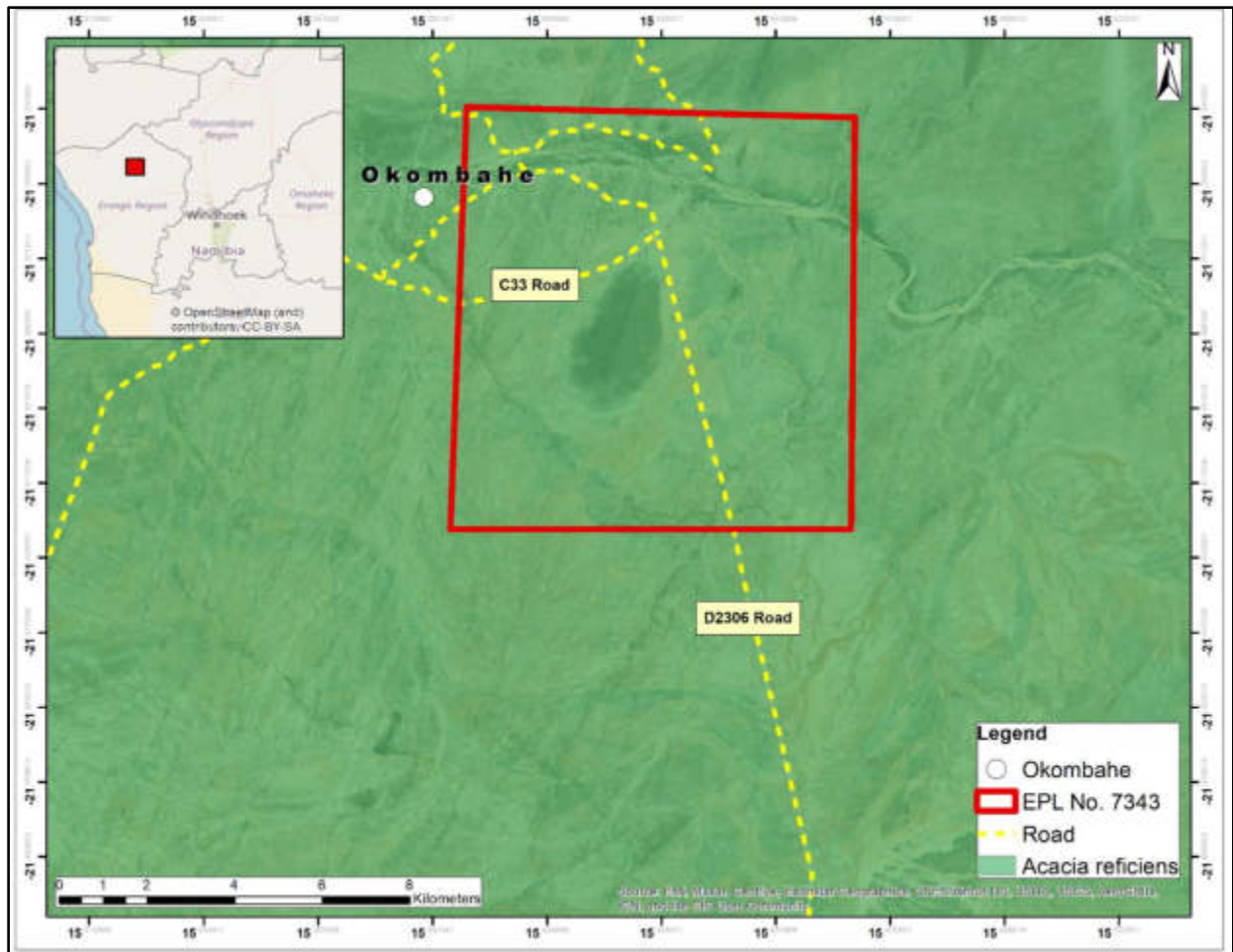


Figure 20: Dominant Vegetation (acacias) map within and around the EPL (Source: EDS, 2021)



Figure 21: The camelthorn shrubs on the northern and western side of the //Khan-hêp Mountain within the EPL



Figure 22: The young shrubs of the *Cyphostemma currorii* (Kobas) at the foot (northern side) of the //Khan-hêb Mountain within the EPL

5.7 Archaeology and Heritage

A Desktop Archaeological and Heritage Impact Assessment for the EPL was carried out by an Archaeologist on the 25th of August 2021 in a form of a site walkover survey. The survey was limited to the sampled northern side of the //Khan-hêb Mountain. Therefore, it did not represent the whole Mountain and its surrounding. The Desktop Report is attached for further reading as **Appendix H**.

5.7.1 Regional Context

Information from the existing literatures and historical records shows that the proposed project area falls under the cultural landscape occurring in the context of Erongo Region. Putting it in context, the Erongo Region is highly endowed with archaeological and cultural heritage sites. In most part the Stone Age, archaeology is prevalent in the larger geographical area. However, no systematic research has been carried out around the proposed project site area to determine the archaeological and heritage potential of the landscape. Notwithstanding, Kinahan has carried out comparative research on rock painting shelters in Erongo Region from ‘Snake Rock’ in Hungorob Gorge Brandberg Mountain, ‘Bushman Paradise’ in Pondok Mountain, Spitzkoppe Mountain and at “Rainman Shelter” in Upper Otjohorong Granite Hill in 1998 (Nankela, 2020), the large part of the proposed project area remains unexplored to the outsiders. About 150 sites are recorded in the Erongo Region, and the Region is also endowed with Iron Age and contemporary heritage that needs to be ascertained later. Currently, Erongo Region has about 37 heritage sites which are listed as national monuments (Mushi, 2021).

5.7.2 Local Context

An aerial view of the //Khan-hêb Mountain that is within the EPL 7343 boundaries, and it is part of landscape considered by community members to be of archaeological and cultural significance to the present and future generation. **Figure 23** below is the map created as a result of the sampled sites of the EPL during the site walkover for the desktop archaeological assessment.

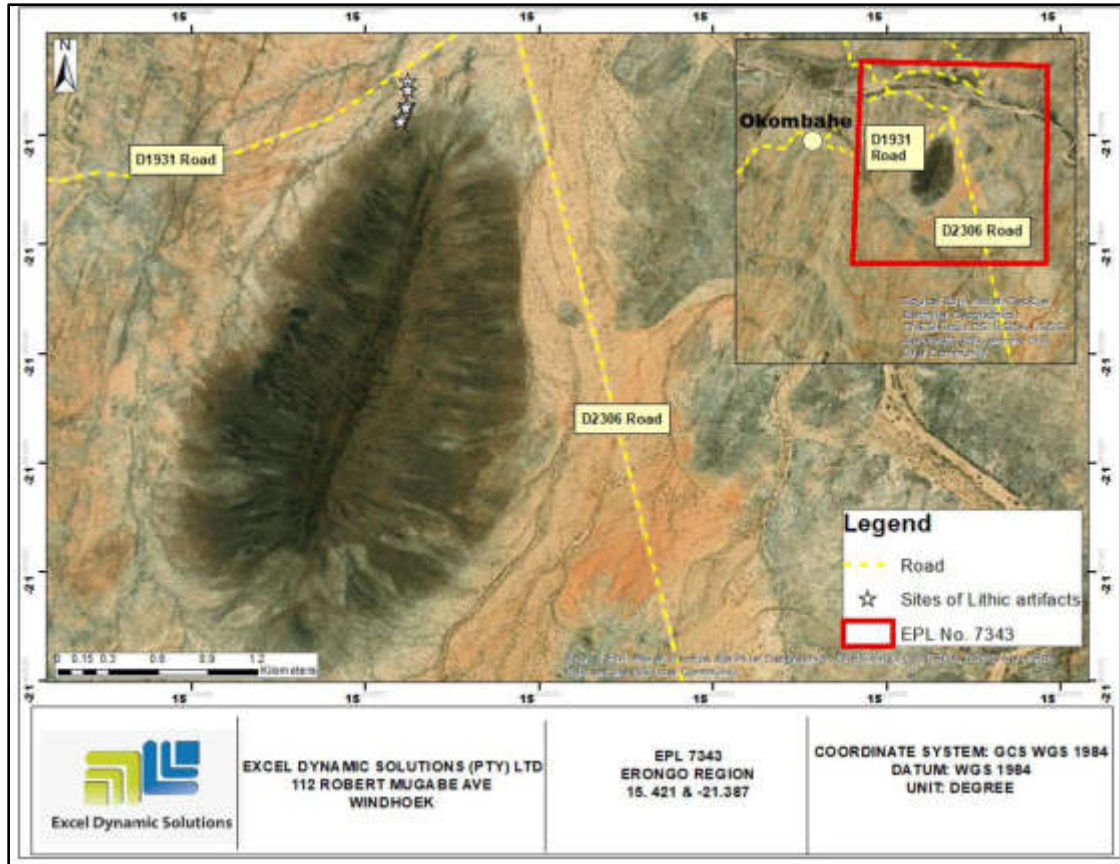


Figure 23: The desktop observed heritage/archaeological sites in the EPL area

5.7.3 Archaeological and Heritage Findings

The Mount //Khan-hêb which translates into “The Mountain that got burned” is an ancestral landmark. Geographically and historically these areas are linked to the Damara people, the Mountain is located at EPL 7343 where is subject to the proposed exploration of Dimension Stones and Precious Metals. The historical significance of the Mountain goes way back to pre-historical and pre-independence periods, and to the Okombahe community this Mountain is deemed to be a cultural heritage site as well as the natural landmark of the area. This mountain together with other small features around it have deep historical and cultural significance to

many people long before the colonial period. According to the narration of the Headman in the area, back in the days the Mountain was used as their reference point whenever one wants to go home or locate something or if someone gets lost this Mountain was their datum point to find their way back home safely.

Other significant activities that are associated with this Mountain is that whenever it rains on the Mountain, their (Damara community) ancestors used to go up there and collect some 'wild berries and some type of wild grasses' that was used to supplement their diets for their families. It is a tradition that they are still doing it even in modern days. On the archaeological part, according to the discussion conducted with the local community, the Mountain have some form of rock art paintings in some places. Culturally, the Mountain harbors the bones/remains of their ancestors who died and were buried there. The bones that are on the Mountain mostly belong to the Nama group of people who were hiding there from the natives of the area, and they were killed by the Damara people. There is a monument on the Western part of this Mountain that is honoring their heroes and heroines. And thus, the unmarked graves that are on the Mountain belong to these various groups of people whom the society think that they need to be highly respected. Again, culturally and spiritually speaking this particular feature belongs to a larger group of people some who are in far towns and city such as Walvis Bay and Windhoek, etc.

The conclusion reached was that regarding the proposed exploration activities on EPL 7343 at //Khan-hêb Mountain, the Okombahe community do not support the these activities specifically for Dimension Stone to take place or any activity that involves cutting of the Mountain. In other words, //Khan-hêb Mountain is 'NO-GO AREA' for Dimension Stone. However, the community did not have any objection on the exploration of Precious Metals (Gold & Silver) elsewhere far from the specific Mountain. The main concern is the disturbance and destruction of their traditional sites, routes of movements, archaeological and cultural heritage materials that are on the surface and sub-surface but also the total erasure of cultural and spiritual connection they have with this landscape. The issue of aesthetic environment outlook of the area is of significance to the community and was raised during the public consultation meeting.

Therefore, it is likely that during the Dimension Stone exploration activities on the //Khan-hêb Mountain (**Figure 24**), the archaeological and heritage resources will be damaged or destroyed, and the magnitude of this impact will likely be high. Such archaeological and heritage resources is of highly significance attachment to the People of Okombahe Settlement and the damage will be irreversible at both local and regional levels. It is recommended that if the proposed project

will get a green light, a detailed field investigation should be carried out while the management actions are adopted and adhered including the 'Chance Find Procedure' (Mushi, 2021).



Figure 24: View of the //Khan-hêb Mountain from the north

5.8 Surrounding Land Uses

The EPL falls within 100% of farmland and covering about three farms located to the north and eastern sides - **Figure 25** (also as indicated in Figure 2 under Chapter 1). Therefore, the EPL being mainly in a communal area and covering part of one commercial farm to the north, the Proponent will be required to secure signed agreements from the affected traditional authority as well as landowners/farmers to gain access to the areas of interest for prospecting and exploration investigations. This will need to be done as per Section 52 of the Minerals (Prospecting and Mining) Act No. 33 of 1992 and Section 2.2.3 of the Minerals Policy of Namibia.

1. *Section 52 (1) The holder of mineral licence shall not exercise any rights conferred upon such holder by this Act or under any terms and conditions of such mineral licence –*
 - (a) *In, on or under any and until such time as such holder has entered into an agreement in writing with the owner of such land containing terms and conditions relating to the payment of compensation, or the owner of such land has in writing waked any right to such compensation and has submitted a copy of such agreement or waiver to the Commissioner.*

2. Section 2.2.3 of the Draft Minerals Policy of Namibia states that the Licence Holder and/or mineral explorers currently have to negotiate a contract with landowners to gain access for or mining purposes.

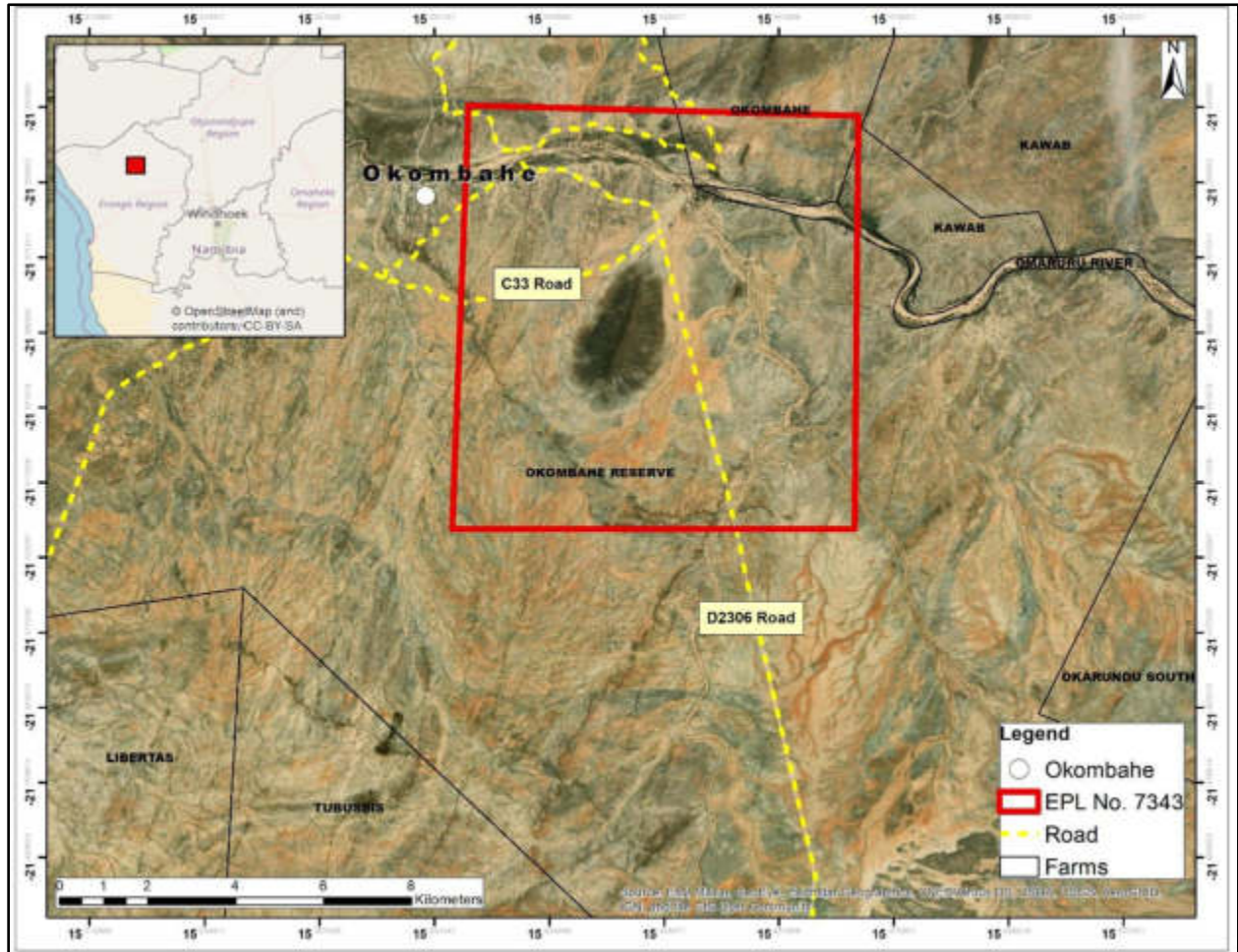


Figure 25: Land use map (farms) within and surrounding the EPL (Source: EDS, 2021)

The typical farming undertaken in the area include livestock (goats, sheep, cattle and horses). To the east of the EPL is the Okombahe Settlement and southern side which also include this side of the EPL is the Okombahe Reserve, well known as the #Eseb Community Conservancy.

5.8.1 Demography

The Erongo Region covers an area of 63,586 km², which comprises 7.7% of Namibia's total area of about 823,680 km². The Erongo Region stretches from the Central Plateau westwards across the Central-Western Plains and Escarpment to the Central Namibian coast, roughly over a distance between 200 and 350 km. Northwards the stretches from the Ugab River in the north

to the Kuiseb River in the south over up to 300 km. On the west it is flanked by the Atlantic Ocean (Erongo Regional Council, 2021).

The total population of the Erongo Region as per the 2011 National Population and Housing Census was recorded at 150 809, of which 70 986 were females and 79 823 males. The population density for the Region was 2.7 people per square kilometres (Namibia Statistics Agency, 2011). The population of the Daures constituency under which the project area falls was recorded at 11 350 in 2011.

5.9 Socio-Economic Status

5.9.1 Economy

According to Bender (1999), the Coastal Zone of the Erongo Region is predominantly urban, because of the unique character of the landscape, which precludes agriculture. The population is thus concentrated in the urban areas of Walvis Bay, Swakopmund, Arandis and Henties Bay and a few small settlements such as Langstrand and Wlotzkasbaken. The rural population in the coastal area includes a group of Topnaars (approximately 500 persons) residing along the Kuiseb River.

According to the Erongo Regional Council (2015), the economy of the Erongo Region mainly depends on mining, fishing, agriculture, and tourism.

The fishing industry is the third largest economic sector contributed about 6.6 percent cent to the Gross Domestic Product (GDP). The Region's whole eastern part and certain western parts are characterized by livestock farming on commercial farms in the districts of Karibib, Usakos and Omaruru, and in the communal areas (Erongo Regional Council, 2015).

According to the Namibia Statistics Agency (2011a), the main source of income in households in the Erongo Region comes from farming (3%), wages and salaries (73%), cash remittance (5%), business and non-farming (9%) and pension (8%).

5.9.2 Tourism

With regards to tourism, the Erongo Region offers some of the most spectacular and popular tourist destinations as well as a variety eco-, wildlife, cultural and adventure tourism opportunities.

5.9.3 Mining Activities

Mineral exploration and mining operations are moderately held activities in the Erongo Region. Exploration activities are common in the Erongo Region and provides livelihood to many of the Region's residents. There are already existing active mining licenses around the vicinity of the EPL.

According to the Erongo Regional Council (2015), the mining Sector in the Region has been characterized by the establishment and expansion of several Uranium mines over the past decade due to an increased demand for this energy source. The Erongo Region also accommodates the mining of commodities such as gold, marble, granite, salt, and semi-precious stones.

5.9.4 Infrastructure and Services

In terms of infrastructure, the Okombahe Settlement is well equipped, and the following crucial services are as follows:

- **Road network:** The Settlement is accessed from local main road C36 via D2315 road, with D2306 passing through the EPL.
- **Electricity supply:** The electricity system in the Settlement is run and supplied by the Namibia Power Corporation (NamPower).
- **Water Supply:** Water is supplied by the Namibian Water Utility (NamWater) through the Okombahe Water Supply Scheme. The Scheme consists of three boreholes (WW 25885, WW 25886 and WW 25887) that pump water into two reservoirs, one set of elevated tanks and a concrete ground reservoir with capacities of 40 m³ and 1 000 m³ respectively. From here water is distributed to the consumer reticulation system. The boreholes are between 25 m and 26 m deep. The boreholes yield between 18 m³/h and 22 m³/h.
- **Telecommunication services:** The Settlement is well connected to the rest of the country and world via local network service providers. The main providers of this service in the town are Telecom Namibia (through both landlines and cellular connection) and Mobile Telecommunications Company (MTC Namibia).
- **Other basic services:** There is a health centre (Clinic) in Okombahe. Among the main schools in the Okombahe Settlement, there is Martin Luther High School (northeast of Okombahe) and Dibasen Junior School are situated in the Settlement (southwest of the Settlement).

6 PUBLIC CONSULTATION PROCESS

Public consultation forms an important component of an Environmental Assessment (EA) process. It provides potential Interested and Affected Parties (I&APs) with an opportunity to comment on and raise any issues relevant to the project for consideration as part of the assessment process. The public consultation process assists the Environmental Assessment Practitioner (EAP) in identifying all potential impacts and to what extent further investigations are necessary. Public consultation can also aid in the process of identifying possible mitigation measures. Public consultation for this project has been done under the EMA and its EIA Regulations.

6.1 Pre-identified and Registered Interested and Affected Parties (I&APs)

The Consultant identified relevant and applicable national, regional, and local authorities, local leaders, and other interested members of the public. Pre-identified I&APs were contacted directly, while other parties who contacted the Consultant after project advertisement notices in the newspapers, were registered as I&APs upon their request. Newspaper advertisements of the proposed exploration activities were placed in two widely read national newspapers in the region (*The Namibia Media Holding's three newspapers*). The project advertisement/announcement ran for two consecutive weeks inviting members of the public to register as I&APs and submit their comments. The summary of pre-identified and registered I&APs is listed in **Table 4** below and the complete list of I&APs is provided in **Appendix D**.

Table 4: Summary of Interested and Affected Parties (I&APs)

National (Ministries and State-Owned Enterprises)
Ministry of Environment, Forestry and Tourism, Ministry of Works and Transport (Roads Authority), Ministry of Mines and Energy, Ministry of Education, Arts and Culture's National Heritage Council of Namibia, Ministry of Health and Social Services and Ministry of Agriculture, Water and Land Reform
Regional, Local and Traditional Authorities
Erongo Regional Council and Daures Constituency
!Oe-#Gan Gan Traditional Authority, affected landowners and members of the public.

6.2 Summary of Activities to Communicate with the I&APs

Regulation 21 of the EIA Regulations details the steps to be taken during a public consultation process and these have been used in guiding this process. Communication with I&APs with regards to the proposed development was facilitated through the following means and in this order:

- A Background Information Document (BID) containing brief information about the proposed facility was compiled (**Appendix E**) and hand delivered to relevant Authoritative Ministries, and upon request to all new registered I&APs,
- Project Environmental Assessment notices were published in *The Namibia Media Holdings newspapers (Die Republikein, Namibian Sun and Allgemeine Zeitung)* dated **09 August 2021** and **16 August 2021 (Appendix F)**, briefly explaining the activity and its locality, inviting members of the public to register as I&APs and submit their comments/concerns.
- Public Consultation Meeting held with the Community and some leaders in the Okombahe Settlement.
- Public notices were placed at frequented places in Okombahe Settlement such as the Okombahe Settlement and Daures Constituency Offices (**Figure 26 and Figure 27**) to inform members of the public of the EIA process and register as I&APs, as well as submit comments.

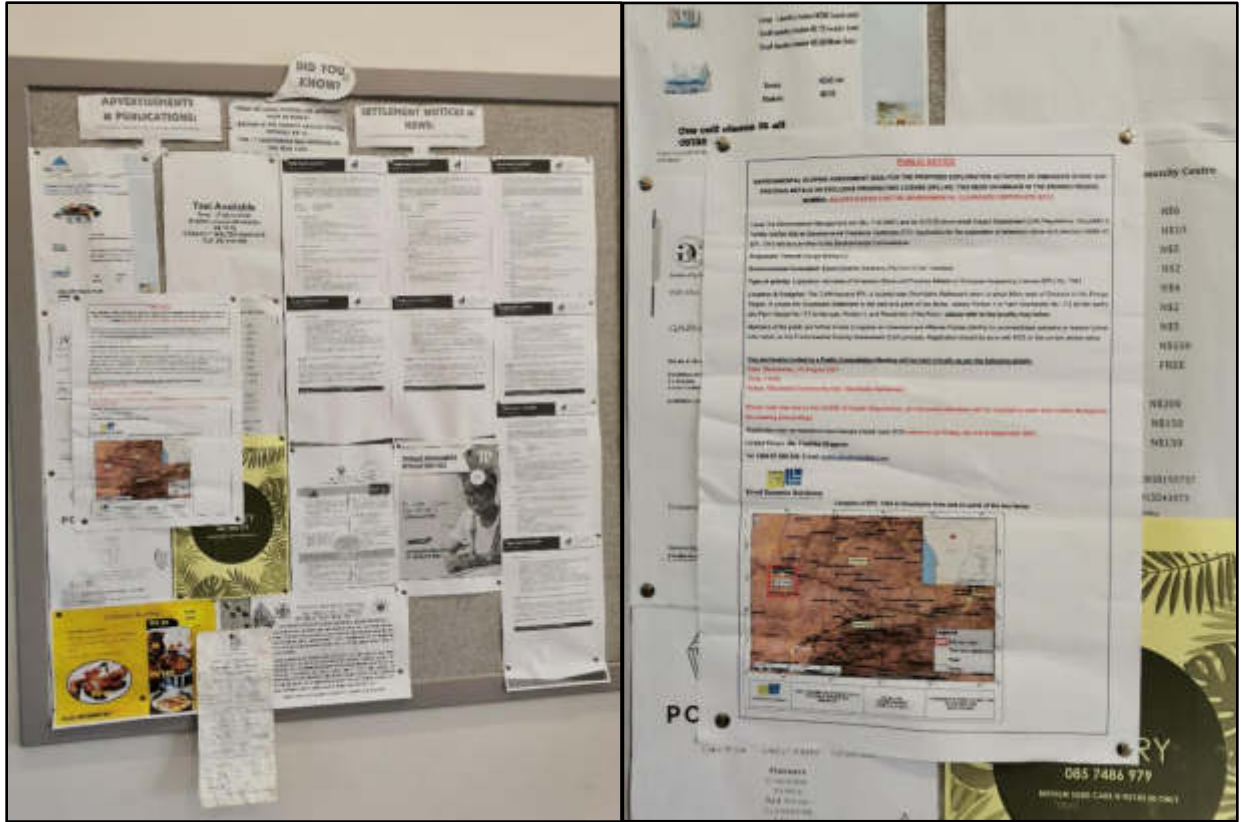


Figure 26: Public notice placed at the Okombahe Settlement Office notice board



Figure 27: Public notice at the Daures Constituency office notice board in Okombahe

6.2.1 Public Consultation Meeting in Okombahe Settlement

A public meeting was scheduled and held on the **25th of August 2021** at the Okombahe Community Hall (in Okombahe) next to the !Oe-#Gan Gan Traditional Authority (**Figure 29**) and was attended by forty-three (43), including three consultants from EDS. More photos from the public meeting are attached to the *Proof of Public Consultation* file (for upload as per the MEFT Portal requirements).

A. COVID-19 REGULATIONS ADHERENCE

Upon arrival at the Community Hall entrance, all the attendees were hand sanitized by one of the Consultants (given the COVID-19 Health Regulations). To ensure that the meeting, as a form of gathering complies with the COVID-19 Regulations, the chairs were set up in a way that social distancing between the people is observed and every attendee had a face mask on.

B. BRIEF SITE VISIT BY THE ENVIRONMENTAL CONSULTANT AND COMMUNITY MEMBERS (MEETING ATTENDEES)

The EDS Consultant presented the proposed exploration activities (where exploration would be carried out, what commodities would be explored for and their methodology briefly). However, soon after hearing that one of the potential target areas (within the EPL boundaries) for prospecting activities is the mountain to the southeastern side of the Okombahe Settlement, the Honorable Councilor and the community members requested that a brief visit should be made near or at that specific mountain before continuing with the rest of the meeting. This was requested with the aim of ensuring that the community would be able to have an idea of the proposed site area for exploration, confirm what the Consultant presented in terms of the project locality so that they could raise their concerns/issues accordingly. Therefore, a short site visit (**Figure 28** - about 15 minutes long) was undertaken by all the meeting attendees and returned to the meeting venue (Community Hall) to resume the meeting.



Figure 28: Some photos taken during the short pre-meeting site visit near the //Khan-hêb Mountain

C. TRANSLATION OR INTERPRETATIONS OF LANGUAGES (ENGLISH AND DAMARA-NAMA)

Given the fact that some of the meeting attendees were elders from the area who only spoke Damara-Nama language and to ensure transparency and effective communication in the meeting, Hon. Kennedy !Haoseb, Mr. Simson Ochurub and Mr. Rossly Otsub volunteered to translate for the elders (from English to Damara-Nama) provided translation to Ms. Shagama (from Damara-Nama to English) to make sure that all comments and other inputs presented in the local language were recorded in the minutes for consideration in the ESA Report.



Figure 29: Some photos taken from the public consultation meeting in Okombahe

Issues were raised by affected and interested parties and these issues have been recorded and incorporated in the environmental report and EMP. The summarized issues raised during the

public meeting are presented in **Table 5** below and the Meeting Minutes and responses provided thereto are attached as **Appendix G**.

Table 5: Summary of main issues and comments received during the public consultation meeting

Issue	Concern	Section where the issue has been addressed
Archaeology and Heritage	A potential high impact on the //Khan-hêb Mountain that is considered to be of high archaeological importance to the Damara community, i.e. it has significant importance to the livelihood of the Damara people.	Section 7.4.2 of the impact assessment chapter
Insufficient or lack consultation with the Traditional Authority when the EPL was applied for by and granted to the Proponent (there was no prior consultation with the Traditional authority before the EIA now)	The community and the leaders were concerned about the fact that the EPL was granted to the Proponent in 2019 but there were no prior consultations done with the traditional authority about this before the EPL was granted.	Addressed under Issue No. 25 of the Public Consultation Meeting Minutes (accompanying the ESA Report).
Rehabilitation issues and impacts on the communities, especially livestock loss	The community raised an issue about unrehabilitated explored and mined out areas as a result of Dimension Stone mining in the Daures Constituency to be specific. Therefore, they are concerned about the same thing to happen with the proposed exploration in Okombahe.	Section 7.4.5 and 7.6.
Impact on services infrastructure	Observations of road infrastructures getting damaged by project related heavy trucks.	Section 7.4.13
Impact on biodiversity and conservation	The community needs to know what measures will be implemented	Section 7.4.5

Issue	Concern	Section where the issue has been addressed
	<p>to mitigate the potential impact of the project activities on fauna and flora.</p> <p>The issue of the #Eseb Reserve that will be registered as a conservancy soon. There are zebras, kudus and other wildlife. So, these activities will potentially affect the grazing areas too.</p>	
Soil degradation	What measures will be recommended and implemented to address the impact of potential soil degradation?	Section 7.4.3
Pollution of soils and water resources	The spillage of oil would have a long-term impact on the soils and possibly water resources.	Section 7.4.4
Impact on Tourism and Visual	The area is one of the tourist destinations and working on the mountain would impact the visual side of the environment.	Section 7.4.6
Impact on grazing (pastoral) land	The proposed exploration will potentially affect the grazing area on the //Khan-hêb Mountain because this land is pastoral and grazing area is already limited in the area.	Section 7.4.1
Health and safety	The exploration boreholes, trenches and pits should be capped and backfilled, respectively to prevent livestock and wildlife from falling in and or cause injuries and mortalities.	Section 7.4.9
Impact of blasting	The radius of impact for blasting should be defined.	Section 7.4.11
Corporate Social	When the project	Section 7.3.1

Issue	Concern	Section where the issue has been addressed
Responsibility (CSR): Inconsideration of communities by project owners)	owners/companies work in the areas, the communities do not benefit anything. The Proponent should consider providing or donating services such as water supply boreholes to the community they are operating in through the identification of people in need. This can be done by drilling a water borehole for the community before they even start with their own project activities.	
Lack of opportunities to the locals (jobs and tenders)	Some companies come with their own workforce and neglecting the locals for job opportunities and or allocating/awarding tenders to outsiders, leaving local communities out with no opportunity for skills transfer and development.	Section 7.3.1
Unemployment	The concerns about unemployment in the community, therefore, if the project gets approved, more opportunities should be created for the local youth by the Proponent.	

6.3 Feedback from the I&APs (Post-Public Consultation Meeting)

The Minutes from the Public Consultation Meeting were shared with the registered I&APs via emails for comments. Some responses were shared with EDS, in a form of email communication, media news (written article) and letters. The feedback shared by the responding I&APs are presented in the **Table 6** below.

Table 6: Feedback received by EDS (directly and indirectly) issues and comments received during the public meeting

Issue	Concern	Section where the issue has been addressed
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Issue	Concern	Section where the issue has been addressed
Archaeology and Heritage (by the National Heritage Council of Namibia)	A need for a detailed Archaeology and Heritage Assessment Study given the high concerns raised in the Consultation Meeting.	Section 7.4.2 (with a recommendation for further/detailed impact assessment study)
Location of the proposed project activities	The planned project is too close to the community and surrounding farms (Article in the <i>New Era</i> newspaper online, dated 7 September 2021)	This is within the granted EPL (tenement) that cannot be relocated, unfortunately. However, relevant management and mitigations have been provided to address the potential impacts.
Impact on cultural heritage, tourism and grazing areas	The project threatens the community's cultural heritage, tourist attraction sites and grazing (Article in the <i>New Era</i> newspaper online, dated 7 September 2021).	Section 7.4.1 and 7.4.1
Rehabilitation issues	In the same <i>New Era</i> Article, the Dâures councillor Kennedy Haoseb (making reference to the consultation meeting) said marble mining has become a challenge for his constituency as some companies never rehabilitated the mines when they left.	Section 7.4.5 and 7.6.
Insufficient consultation prior to EPL approval and granting between EPL holders, community, community leaders and relevant governmental representatives	The community needs a consultation between the community representatives, EPL holder(s), Chief of the !Oe-#Gan Traditional Authority, Representatives from the Ministry of Mines & Energy and Office of the Environmental Commissioner.	This is more of a request to the government officials and the EPL holder(s)/Proponent. Therefore, the letter submitted to EDS MME (with this request) and copying in some official from the will be submitted to the Office of the Environmental Commissioner together with the Final ESA Report.

The issues raised during the public consultation meetings and follow-up communications have been incorporated into the project baseline environment and addressed under the next chapter (impact assessment).

6.3.1 Second Round of Public Consultation: Draft ESA Report Review

The draft ESA Report was circulated to all registered I&APs for review and comments for a period of nine days (6 October to 14 October 2021).

There was no further comment received on the draft ESA Report. This was confirmed via EDS Consultants emails because there were no emails received on the draft Report.

7 IMPACT IDENTIFICATION, ASSESSMENT AND MANAGEMENT & MITIGATION MEASURES

7.1 Impact Identification

Proposed developments/activities are usually associated with different potential positive and/or negative impacts. For an environmental assessment, the focus is placed mainly on the negative impacts. This is done to ensure that these impacts are addressed by providing adequate mitigation measures such that an impact's significance is brought under control, while maximizing the positive impacts of the development. The potential positive and negative impacts that have been identified from the prospecting activities are listed as follow:

Positive impacts:

- Socio-economic development through employment creation (primary, secondary, and tertiary employment) and skills transfer,
- Open other investment opportunities and infrastructure-related development benefits,
- Produce a trained workforce and small businesses that can service communities and may initiate related businesses,
- Boosting the local economic growth and regional economic development.
- Improved geological understanding of the area regarding Dimension Stone and Precious Metals, and
- Increased support for local businesses through the procurement of consumable items such as Personal Protective Equipment (PPE), machinery spare parts, lubricants, etc

Negative impacts:

- Potential disturbance of existing pastoral systems,
- Physical land / soil disturbance: The invasive exploration activities could potentially lead to site soils' disturbance. The potential damage to subgrade due to traffic compaction along tracked / haul access roads,
- Impact on local biodiversity (fauna and flora) and habitat disturbance: some vegetation may need to be removed to create access roads and working spaces. Some exploration activities such as drilling may disturb local / farm and potential illegal wildlife hunting (poaching) in the area.
- Potential impact on water resources and soils particularly due to pollution,
- Air quality issue: potential dust generated from surface excavation, drilling, and diamond wire sawing from could temporarily compromise the surrounding air quality,
- Visual impacts due to scars on landscape and relief, especially by Dimension Stone test quarrying on the affected sites of the EPL,
- Impact on Tourism as result of affected visual/sense of place owing to Dimension Stone exploration leaving scars on the land, particularly the //Khan-hêb Mountain and eye sore to travellers due to visibly altered landscape.
- Potential occupational health and safety risks associated with the movement / operating of machinery and equipment on site.
- Vehicular traffic safety and impact on services infrastructure such as local roads: the temporary potential increase in vehicular traffic during exploration may exert additional pressure on the local roads, especially by heavy vehicles such as trucks carrying project materials and equipment (drilling rig),
- Vibrations and noise associated with drilling and Dimension Stone test quarrying cutting activities may be a nuisance to locals,
- Environmental pollution through different types of waste generated on the site, particularly from the mishandling of hydrocarbons (fuels) and wastewater,
- Archaeological or cultural heritage impact through unintentional uncovering of unknown archaeological objects or sites by certain project activities such as exploration drilling and excavation as well as known/unknown and marked/unmarked heritage sites on targeted sites on the EPL and surroundings,
- Potential social nuisance and conflicts between affected farmers / landowners and or neighbouring land users and Proponent due to the lack of communication or cooperation on raised issues and land use during exploration.

7.2 Impact Assessment Methodology

The Environmental Assessment is primarily a process used to ensure that potential impacts that may occur from project activity are identified and addressed with environmentally cautious approaches and legal compliance. The impact assessment method used for this project is in accordance with Namibia's Environmental Management Legislation (Environmental Management Act No. 7 of 2007) and its Regulations of 2012, as well as the International Finance Corporation (IFC) Performance Standards.

The identified impacts were assessed in terms of probability (likelihood of occurring), scale/extent (spatial scale), magnitude (severity) and duration (temporal scale) as presented in **Table 7, Table 8, Table 9** and **Table 10**.

To enable a scientific approach to the determination of the environmental significance, a numerical value is linked to each rating scale. This methodology ensures uniformity and that potential impacts can be addressed in a standard manner so that a wide range of impacts are comparable. It is assumed that an assessment of the significance of a potential impact is a good indicator of the risk associated with such an impact. The following process will be applied to each potential impact:

- Provision of a brief explanation of the impact.
- Assessment of the pre-mitigation significance of the impact; and
- Description of recommended mitigation measures.

The recommended mitigation measures prescribed for each of the potential impacts contribute towards the attainment of environmentally sustainable operational conditions of the project for various features of the biophysical and social environment. The following criteria were applied in this impact assessment:

7.2.1 Extent (spatial scale)

Extent is an indication of the physical and spatial scale of the impact. **Table 7** shows rating of impact in terms of extent of spatial scale.

Table 7: Extent or spatial impact rating

Low (1)	Low/Medium (2)	Medium (3)	Medium/High (4)	High (5)
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Low (1)	Low/Medium (2)	Medium (3)	Medium/High (4)	High (5)
Impact is localized within the site boundary: Site only	Impact is beyond the site boundary: Local	Impacts felt within adjacent biophysical and social environments: Regional	Impact widespread far beyond site boundary: Regional	Impact extend National or over international boundaries

7.2.2 Duration

Duration refers to the timeframe over which the impact is expected to occur, measured in relation to the lifetime of the project. **Table 8** shows the rating of impact in terms of duration.

Table 8: Duration impact rating

Low (1)	Low/Medium (2)	Medium (3)	Medium/High (4)	High (5)
Immediate mitigating measures, immediate progress	Impact is quickly reversible, short term impacts (0-5 years)	Reversible over time; medium term (5-15 years)	Impact is long-term	Long term; beyond closure; permanent; irreplaceable or irretrievable commitment of resources

7.2.3 Intensity, Magnitude / severity

Intensity refers to the degree or magnitude to which the impact alters the functioning of an element of the environment. The magnitude of alteration can either be positive or negative. These ratings were also taken into consideration during the assessment of severity. **Table 9** shows the rating of impact in terms of intensity, magnitude or severity.

Table 9: Intensity, magnitude or severity impact rating

Type of criteria	Negative				
	H- (10)	M/H- (8)	M- (6)	M/L- (4)	L- (2)
Qualitative	Very high deterioration, high quantity of deaths, injury of illness / total loss of habitat, total	Substantial deterioration, death, illness or injury, loss of habitat / diversity or resource,	Moderate deterioration, discomfort, partial loss of habitat / biodiversity or resource,	Low deterioration, slight noticeable alteration in habitat and biodiversity. Little loss in	Minor deterioration, nuisance or irritation, minor change in species / habitat /

Type of criteria	Negative				
	H- (10)	M/H- (8)	M- (6)	M/L- (4)	L- (2)
	alteration of ecological processes, extinction of rare species	severe alteration or disturbance of important processes	moderate alteration	species numbers	diversity or resource, no or very little quality deterioration.

7.2.4 Probability of occurrence

Probability describes the likelihood of the impacts occurring. This determination is based on previous experience with similar projects and/or based on professional judgment. **Table 10** shows impact rating in terms of probability of occurrence.

Table 10: Probability of occurrence impact rating

Low (1)	Medium/Low (2)	Medium (3)	Medium/High (4)	High (5)
Improbable; low likelihood; seldom. No known risk or vulnerability to natural or induced hazards.	Likely to occur from time to time. Low risk or vulnerability to natural or induced hazards	Possible, distinct possibility, frequent. Low to medium risk or vulnerability to natural or induced hazards.	Probable if mitigating measures are not implemented. Medium risk of vulnerability to natural or induced hazards.	Definite (regardless of preventative measures), highly likely, continuous. High risk or vulnerability to natural or induced hazards.

7.2.5 Significance

Impact significance is determined through a synthesis of the above impact characteristics. The significance of the impact “without mitigation” is the main determinant of the nature and degree of mitigation required. As stated in the introduction to this section, for this assessment, the significance of the impact without prescribed mitigation actions is measured.

Once the above factors (**Table 7, Table 8, Table 9** and **Table 10**) have been ranked for each potential impact, the impact significance of each is assessed using the following formula:

$$\text{SIGNIFICANCE POINTS (SP)} = (\text{MAGNITUDE} + \text{DURATION} + \text{SCALE}) \times \text{PROBABILITY}$$

The maximum value per potential impact is 100 significance points (SP). Potential impacts were rated as high, moderate, or low significance, based on the following significance rating scale (Table 11).

Table 11: Significance rating scale

Significance	Environmental Significance Points	Colour Code
High (positive)	>60	H
Medium (positive)	30 to 60	M
Low (positive)	<30	L
Neutral	0	N
Low (negative)	>-30	L
Medium (negative)	-30 to -60	M
High (negative)	>-60	H

Positive (+) – Beneficial impact

Negative (-) – Deleterious/ adverse Impact

Neutral – Impacts are neither beneficial nor adverse.

For an impact with a significance rating of high (-ve), mitigation measures are recommended to reduce the impact to a medium (-ve) or low (-ve) significance rating, provided that the impact with a medium significance rating can be sufficiently controlled with the recommended mitigation measures. To maintain a low or medium significance rating, monitoring is recommended for a period to enable the confirmation of the significance of the impact as low or medium and under control.

The assessment of the exploration phases is done for pre-mitigation and post-mitigation.

The risk/impact assessment is driven by three factors:

- **Source: The cause or source of the contamination**
- **Pathway: The route taken by the source to reach a given receptor**

- **Receptor: A person, animal, plant, eco-system, property or a controlled water source. If contamination is to cause harm or impact, it must reach a receptor.**

A pollutant linkage occurs when a source, pathway and receptor exist together. Mitigation measures aim firstly, avoid risk and if the risk cannot be avoided, mitigation measures to minimize the impact are recommended. Once mitigation measures have been applied, the identified risk would reduce to lower significance (Booth, 2011).

This assessment focuses on the three project phases namely, the prospecting, drilling, sampling (and possible analysis) and decommissioning. The potential negative impacts stemming from the proposed activities of EPL are described, assessed and mitigation measures provided thereof. Further mitigation measures in a form of management action plans are provided in the Draft Environmental Management Plan.

7.3 Assessment of Potential Positive Impacts

7.3.1 Socio-economic development (Employment) and Corporate Social Responsibility (CSR)

The exploration phase will create temporary job opportunities for the locals (both skilled, semi and unskilled), resulting in socio-economic development through employment creation and skills development and transfer.

The skills transferred to these workers (existing and new ones) will ensure improved employability for those workers in the industry or at other similar project operations in future (even after the Proponent ceases operations). The income earned by the employed locals (workers) will positively impact their lives, individually and that of their households (families).

This impact is assessed as follows.

- **Impact type:** positive
- **Extent:** Local to regional
- **Duration:** short-term for exploration only
- **Probability:** Probable
- **Significance (no mitigation):** Low, Significance (post-mitigation): medium

- **Mitigation measures:** Preference of local people for employment for jobs should be implemented, i.e., permanent residents from the local area (in and around Okombahe) should be employed for the unskilled labour preferentially to out-of-area people (outsiders) where possible. Out-of-area employment should be justified, for example by the unavailability of local skills only.
 - Equal opportunity should be provided for both men and women, when and where possible.
 - Opportunities such as small tenders for instance should be awarded through the established committee.

In terms of Corporate Social Responsibilities (CSR):

- The Proponent should consider providing and or donating services such as water supply boreholes to the community they are operating in through the identification of people in need. This can be done by drilling a water borehole for the communities.
- Infrastructure should be donated to the community through the Traditional Authority or the Regional Council post-exploration for distribution/allocation to the needy communities.
- The project owner (Proponent) should fulfil their promises of CSR, upon proper consultation with the local development committees to establish what the community really needs.

7.3.2 Improved geological understanding of the site

The geological information reviewed and gathered during the exploration phase and eventual mining will be made available to the Ministry of Mines and Energy. The Ministry would then consolidate the information as a public institution for archiving and future use a baseline for projects or educational research. This impact is assessed as follows:

- **Impact type:** positive
- **Extent:** Local to national
- **Duration:** Long-term
- **Probability:** Probable
- **Significance:** medium
- **Mitigation measures:** The Proponent to ensure availability and accessibility of exploration findings to the responsible department at the Ministry of Mines and Energy (Mines Department and possibly Geological Survey of Namibia) for archiving.

7.3.3 Investment opportunities

The exploration activities leading to potentially economic feasible findings may potentially attract international investment not just for the project area but elsewhere outside the project site area where the Precious Metals and Dimension Stone deposit may occur. More investors may develop interests to invest further in the Namibia's exploration and mining sector. The impact assessment is as follows:

- **Impact type:** positive
- **Extent:** national to international
- **Duration:** Long-term
- **Probability:** Probable
- **Significance:** medium
- **Mitigation measures:** Not applicable.

7.4 Assessment of Potential Negative Impacts: Surveys, Drilling, Sampling and Test Quarrying Phase

The main potential negative impacts associated with the exploration activities (or operation and maintenance of the site) are identified and assessed below:

7.4.1 Disturbance to the Pastoral System (Grazing Areas)

As an aspect of local culture, pastoral farming is vital, as it serves as livelihood for local communities who greatly depend on livestock farming for subsistence and commercial purposes. These societies are, to a large extent, built around a pastoral economic specialization.

The effect of exploration work on the land may hinder animal husbandry in the area and its surrounding. Exploration works may pose a risk (disturbance) to grazing pastures for local livestock, and if exploration occur over a wider spatial extent, the project area might experience loss of its pastoral system over time. Losing grazing pastures for livestock minimizes the amounts of livestock and overall farming activity in the area, leading to loss of livelihoods and household level income.

Without any management and mitigation implemented on site during exploration, the impact can be rated as slightly high to medium. However, upon the implementation of appropriate mitigation

measures, the rating will be reduced to a lower significance rating. The impact is assessed in **Table 12** below.

Table 12: Assessment of the impacts of exploration on the Pastoral system

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M - 3	M/H - 4	L/M - 4	M/H - 4	M - 44
Post mitigation	L/M - 2	L/M - 2	L - 2	L/M - 2	L - 12

Mitigations and recommendation to lower the possibility of disturbance and loss of the Pastoral system

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

7.4.2 Impact on Archaeological and Heritage Resources

During exploration works, potential archaeological and heritages sites and objects (resources) located on and or around the //Khan-hệb Mountain may be severely impacted through inadvertent destruction or damage. This may include the excavation of subsurface graves or other archaeological objects. It should however be noted that the absence of other confirmable and significant archaeological and cultural heritage resources during the deskop site visit, is not evidence that these such sites and objects did not exist at the Mountain or within the proposed EPL site area.

A Desktop Archaeological and Heritage Assessment was undertaken for the EPL. However, given the magnitude of the issues raised by the community in the public consultation meeting on the 25th of August 2021 and lack of information/comprehensive research on the Mountain, the impact is considered very high. Therefore, there are no management and mitigation measures to mitigate this impact. A Comprehensive Specialist

Assessment is therefore highly recommended to understand the impact' significance in detail and only then measures can be provided by the Specialist (Archaeologist). The assessment of this impact at a Desktop level is shown in **Table 13** below.

Table 13: Assessment of the impacts of exploration on archaeological and heritage resources

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M/H - 4	H - 5	M/H - 8	H - 5	L – 85
Post mitigation	Impact Extent, Duration, Intensity, Probability and overall Significance unknown pending a Comprehensive Archaeology and Heritage Assessment				

Please note that management and mitigations or recommendation provided below are based on the Dsktop Study and basic site walkover at the EPL and around the Muntain, pending a Detailed/Comprehensive Specialist' Study.

The only provisional recommendations to the impact are as follows:

- The targeted area on EPL 7343 should be declared as a NO-GO-ZONE
- A detailed field investigation within the EPL 7343 must be carried out to confirm existing findings and determine of any other possible archaeological, cultural or heritage features.
- A landscape approach of the site management must consider culture and heritage features in the overall planning of exploration infrastructures within and beyond the License (EPL) boundaries.
- The Proponent is advised to make an application to the National Heritage Council for a Consent to allow detailed assessment of the area in relation to the proposed activity or development believed to be an archaeological site.
- The Project Proponent should engage an archaeologist to survey the area in advance before the issuing of clearance for the explorations to proceed; and e) The Proponent and contractors should be made aware of the provisions of Section 55 of the National Heritage Act in event significant heritage and culture features are discovered while carrying out the exploration activities operation.

7.4.3 Land (Soil) Degradation

The exploration activities such as excavations, land clearing to enable siting of project structures and equipment as well as the actual exploration invasive activities such as soil sampling, trenching and drilling will potentially result in soil disturbance. This could potentially leave the site soils exposed to erosion. This impact would be probable at site areas with no to little vegetation cover that would hold the soils in place with their roots. However, most parts of the EPL are covered by grass, shrubs, and trees. Therefore, the vulnerability to erosion impact is minimal.

Regardless, the impact can be rated as medium if no mitigation measures are implemented. However, with the effective implementation of mitigation measures and monitoring, the impact significance will be reduced to low as shown in the impact assessment **Table 14**.

Table 14: Assessment of the impacts of exploration on site soils

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M: -3	M: -3	M/L: -4	M/H: 4	M: -40
Post mitigation	L/M: -2	L/M: -2	L/M: -4	L/M: 2	L: -16

Mitigations and recommendation to minimize the impact on site soils

- Overburden should be handled more efficiently during exploration works to avoid erosion when subjected erosional processes.
- Prevent creation of huge piles of waste rocks by performing sequential backfilling, especially for Dimension Stone test quarrying exploration.
- Stockpiled topsoil and overburden waste rocks should be used to backfill the explored and disturbed site areas/spots.
- Soils that are not within the intended and targeted footprints of the site areas should be left undisturbed and soil conservation implemented as far as possible.
- Project vehicles/machinery should stick to access roads provide and or meant for the project operations but not to unnecessarily create further tracks on site by driving everywhere resulting in soil compaction.

7.4.4 Soil and Water Resources Pollution

The proposed exploration activities are associated with a variety of potential pollution sources (i.e. lubricants, fuel and wastewater) that may contaminate/pollute soils and eventually

groundwater and surface water. The anticipated potential source of pollution to water resources from the project activities would be hydrocarbons (oil) from project vehicles, machinery, and equipment as well as potential wastewater/effluent from exploration related activities.

The spills (depending on volumes spilled on the soils) from these machinery, vehicles and equipment could infiltrate into the ground and pollute the fractured or faulted aquifers on site, and with time reach further groundwater systems in the area. However, it should be noted that the scale and extent/footprint of the activities where potential sources of pollution will be handled is relatively small. Therefore, the impact will be moderately low.

Pre-mitigation measure implementation, the impact significance is low to moderate and upon implementation, the significance will be reduced to low. The impact is assessed in **Table 15** below.

Table 15: Assessment of the project impact on soils and water resources (pollution)

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M - 3	M/H - 4	M - 6	M - 3	M - 39
Post mitigation	L - 1	L - 1	L - 2	L/M - 2	L - 8

Mitigations and recommendation to manage soil and water pollution

- Spill control preventive measures should be in place on site to management soil contamination, thus preventing and or minimizing the contamination from reaching water resources bodies. Some of the soil control preventive measures that can be implemented include:
 - Identification of oil storage and use locations on site and allocate drip trays and polluted soil removal tools suitable for that specific surface (soil or hard rock cover) on the sites.
 - Maintain equipment and fuel storage tanks to ensure that they are in good condition thus preventing leaks and spills.
 - The oil storage and use locations should be visually inspected for container or tank condition and spills.
 - Maintain a fully provisioned, easily accessed spill kit. Spill kits should be located throughout the active project sites contain the floor dry absorbent material and absorbent booms, pads, mats. These would be suitable for ground surface areas that are covered mainly by hard rocks.

- All project employees should be sensitized about the impacts of soil pollution and advised to follow appropriate fuel delivery and handling procedures.
- The Proponent should develop and prepare countermeasures to contain, clean up, and mitigate the effects of an oil spill. This includes keeping spill response procedures and a well-stocked cache of supplies easily accessible.
- Ensure employees receive basic Spill Prevention, Control, and Countermeasure (SPCC) Plan training and mentor new workers as they get hired.
- Exploration site areas where hydrocarbons will be utilized, the surface should be covered with an impermeable plastic liner (e.g., an HDPE liner), carefully placed to minimize risk of puncturing, to prevent any spillages from getting into direct contact with the soils and prevent eventual infiltration into the ground.
- Project machines and equipment should be equipped with drip trays to contain possible oil spills when operated on site.
- In cases of accidental fuel or oil spills on the soils from site vehicles, machinery and equipment, the polluted soil should be removed immediately and put in a designate waste type container for later disposal as per the preceding bullet point. The removed polluted soil should either be completely disposed of or cleaned and returned to where it was taken from on site or can be replaced with a cleaner soil. This is to ensure that the pollutants contained in the soil does not infiltrate into the site soils and eventually reach to groundwater.
- Although fuel (diesel) required for exploration equipment will be stored in a tank mounted on a mobile trailer, drip trays must be readily available on this trailer and monitored to ensure that accidental fuel spills along the tank trailer path/route around the exploration sites are cleaned on time (soon after the spill has happened).
- Polluted soil must be collected and transported away from the site to an approved and appropriately classified hazardous waste treatment facility.
- Washing of equipment contaminated hydrocarbons, as well as the washing and servicing of vehicles should take place at a dedicated area, where contaminants are prevented from contaminating soil or water resources.
- Toilet water should be treated using one of the following methods:
 - Discharged into chemical toilets and periodically emptied out before reaching capacity and transported to a wastewater treatment facility.
 - A type of pit latrine (where excreta in the pit is treated to prevent the waste from being a water pollution risk).

7.4.5 Loss of Biodiversity: Fauna and Flora

Fauna: The earthworks, drilling activities, and test quarrying done to uncover the mineral bearing rock units could result in land degradation, leading to habitat loss for a diversity of flora and fauna ranging from microorganisms to large animals and vegetation. Endemic species are most severely affected since even the slightest disruption in their habitat can result in extinction or put them at high risk of being wiped out.

Another potential impact of the project activities is the faunal habitat loss of reptiles and small mammals that live under the targeted rock units on the EPL. Although this impact may not be entirely avoidable, the workers will be educated on the importance of conserving faunal biodiversity by not killing any of the small mammals or reptiles encountered at site. These animals may be trying to migrate from the targeted and disturbed rocks to seek shelter and habitat elsewhere, therefore, they would not be harmed in any way.

The presence and movement of the exploration workforce and operation of project equipment and heavy vehicles would disturb not only the domestic animals (livestock) grazing at the explored sites of the EPL, but also the wildlife present in Community Reserve from the centre of the EPL to its south. Not only the disturbance due to human and vehicle movements, but also potential illegal hunting (poaching) of local wildlife by project related workers. This could lead to loss or number reduction of specific faunal species which also impacts tourism in the community (for tourists who are interested in wildlife seeing when driving through the area).

Another potential activity that will impact the faunal community is the unrehabilitated and or unfenced boreholes, trenches and pits used for exploration (once they are no longer in use). If these holes and pits/trenches are not fenced off or closed off by rehabilitating them, they could pose a high risk of site domestic and wild animals falling into these holes and pits, causing injuries and potentially mortalities.

Flora: According to Kanime and Kamwi (2021), the direct impacts on flora and vegetation communities will mainly occur through clearing for the exploration access roads and associated infrastructure. The dust emissions from drilling and possibly test quarrying may affect surrounding vegetation through the fall of dust. Some loss of vegetation is an inevitable consequence of the development. However, given the abundance of the shrubs and site specific areas of exploration on the EPL, the impact will be localized, therefore manageable.

Under the status, the impact can be of a medium significance rating. With the implementation of appropriate mitigation measures, the rating will be reduced to a low significance rating. The impact is assessed in **Table 16** below.

Table 16: Assessment of the impacts of exploration on biodiversity

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M: -3	M: -3	M/L: -4	M/H: 4	M: -40
Post mitigation	L/M: -2	L/M: -2	L/M: -4	L/M: 2	L: -16

Mitigations and recommendation to minimize the loss of biodiversity (fauna and flora)

- The Proponent should avoid unnecessary removal of vegetation, thus promoting a balance between biodiversity and their operations.
- Vegetation found on the site, but not in the targeted exploration site areas should not be removed but left to preserve biodiversity on the site.
- Shrubs or trees found along drilling or sampling spots on sites should not be unnecessarily removed. Care should be taken when extracting mineral species without destroying the vegetation.
- Movement of vehicle and machinery should be restricted to existing roads and tracks to prevent unnecessary damage to the vegetation.
- No onsite vegetation should be cut or used for firewood related to the project's operations. The Proponent should provide firwood for his onsite camping workers from authorized firewood producer or seller.
- Even if a certain shrub or tree is found along exploration sites, this does not mean that it should be removed. Therefore, care should be taken when exploring without destroying the site vegetation.
- Design access roads appropriately in a manner that disturbs minimal land areas as possible.
- Make use of the existing road network as much as possible and avoid off-road driving.
- Vegetation clearing to be kept to a minimum. The vegetation of the site is largely low and open and therefore whole-sale vegetation clearing should only be applied where necessary and within the development footprint.

- Formulate and implement suitable and appropriate operational management guidelines for the cleared areas. Incorporated in the guidelines are the progressive rehabilitation measures. These should consider:
 - Post closure land-use measures and/or establishment of self-sustaining indigenous vegetation
 - Erosion management measures,
- Vegetate the top surface of the cleared areas as soon as it is practicably possible.
- Cleared areas should be revegetated with seed or plants of locally occurring species.
- Regular monitoring for alien plants within the project's footprint during operations/exploration.
- No muddy and dirty equipment should be brought onto site as this is likely to carry seed of alien species.
- No litter or throwaway any waste on the site.
- Workers should refrain from disturbing, killing or stealing locals' animals and killing small soil and rock outcrops' species found on sites.
- Poaching (illegal hunting) of wildlife from the area is strictly prohibited.
- Environmental awareness on the importance of biodiversity preservation should be provided to the workers.

7.4.6 Visual Impact and Tourism

Surface mining as well as intense invasive exploration activities usually leave scars on the local landscape, attributed to Dimension Stone exploration. If the exploration sites are located close to or along roads or frequented areas, these scars in many cases contrasts the surrounding landscape and thus may potentially become a visual nuisance, especially in tourist-prone areas (Excel Dynamic Solutions, 2019). The project is located close to the C36 and D2306 road that is used not only by local travelers and local holiday makers, but tourists too. The sight of the mined-out areas of the site may be an eyesore to those people.

According to Chetty (2021), the visual receptors are grouped according to the similarities in views. The visual receptors included in this study are:

- **Residents:** static views from buildings that have visual exposure tend to have a relatively wide cone of vision as the viewer tends to scan back and forth across the landscape. Residents and tourists staying within the affected zone of influence are therefore classified as visual receptors of high sensitivity owing to their sustained visual

exposure to the proposed development as well as their attentive interest towards their living environment

- **Tourists:** tourists would be travelling as motorists and have therefore been included in the motorist receptor categorisation. Tourists are regarded as visual receptors of exceptionally high sensitivity. Their attention is focused on the landscape which they essentially utilise for enjoyment purposes and appreciation of the quality of the landscape. While there may not be any tourist attractions in proximity to the project area, tourists may use the C36, D2315, and D2306 and nearby access roads to travel to tourist destinations around Okombahe and the rest of the Erongo Region.
- **Motorists:** they are generally classified as visual receptors of low sensitivity due to their momentary views and experience of the proposed development. Under normal conditions, views from a moving vehicle are dynamic as the visual relationship between the activity is constantly changing as well as the visual relationship between the activity and the landscape in which they are seen. The view cone for motorists, particularly drivers, is generally narrower than for static viewers. Motorists will therefore show low levels of sensitivity as their attention is focused on the road and their exposure to roadside objects is brief.

The short-term impact on the local sight would also be the presence of drilling rigs, trucks, campsites, ablution facilities, etc. that may be visible to travelers and tourists in the area. Therefore, contrasting the local landscape and causing a visual nuisance, especially for any tourism significant parts of the EPL such as neighboring roads. Currently or without implementing any mitigation measures, the visual impact can be rated as medium and can be reduced to low significance upon effectively implementing the measures. The assessment of the impact is shown in **Table 17** below.

Table 17: Assessment of the impacts of exploration on visual (sense of place) and tourism

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M - 3	M/H - 4	L/M - 4	M/H - 4	M - 44
Post mitigation	L/M - 2	L/M - 2	L - 2	L/M - 2	L - 12

Mitigations and recommendation to minimize dust

- The Proponent should consider the implementation of continuous rehabilitation programme, by using overburden waste rocks from exploration works, particularly rest quarrying.

- The Proponent to utilize waste rubble to rock blind exposed rock faces and stockpiled topsoil to partially back fill site areas used for test quarrying.
- The Proponent should carry out progressive working and restoration/rehabilitation over the shortest timescale possible, to avoid excessive areas of disturbance.
- Consider a phased exploration and direct placement of overburden (topsoil and waste rocks) and other site-derived materials to allow progressive restoration around the margins of the explored-out site areas.
- Drilling/cutting for Dimension Stone exploration should be done away from the crests of the mountain and outcrops as possible particularly for the EPL areas where test quarrying will be undertaken.
- Consider setting up the campsite and associated facilities further from the roads' parts of the EPL to reduce the structure sight from road users.
- All vehicles, equipment, and machinery that do not need to be parked within direct sight of the roads close to exploration sites are not visible to travelers by parking them further from or behind site vegetation nearby working sites.
- The temporary exploration structures such as campsites and field offices should be set up further from the roads and should in a colour that is not too distinct from the surrounding environment (to maintain the natural appearance of the area).

7.4.7 Generation of Dust (Air Quality)

Dust emanating from site access roads when transporting exploration equipment and supply (water) to and from site (time-to-time) may compromise the air quality in the area. Vehicular movements create dust even though it is not always so severe. Not only dust but also the possible emissions of gases from heavy vehicles and machinery. These sources of dust and emissions may lead to air pollution, thus decreasing the air quality in the areas of operations. The hot and dry environment, loose and in some places, sandy nature of the substrate and low vegetation cover causes ambient fugitive dust levels. Majority of the dust would be generated during the detailed exploration stage, i.e., at the drilling and test quarrying sites, and this could contribute to short-term decrease in air quality around the working site areas of the EPL.

Dust emanating from site access roads when transporting project equipment and supply (water) to and from site (time-to-time) would be likely on bare site soils (very little to no vegetation cover), especially during dry seasons.

According to Resilient Environmental Solutions (2019), dust generated from operating the geological drill rigs could result in the production of respirable dust (particulate matter smaller than 50 µm or even 10 µm in size), which could impact the respiratory health of the drill rig operators/workers. The dust produced might also settle on nearby vegetation and may affect rates of photosynthesis and transpiration. The settled dust on plant leaves may not only affect the vegetation's functionality but livestock that feed on the vegetation (i.e., browsing) too.

Furthermore, the main respiratory diseases related to inhaled mineral dusts include, pneumoconiosis (which includes silicosis, asbestosis, and coal miner's pneumoconiosis), and cancer (including bronchogenic carcinoma and malignant mesothelioma). It should be noted however that the scale and nature of the operation (i.e., drilling and test quarrying for exploration purposes only) is such that prolonged and continuous exposure to mineral dust (as experienced during a full production mining operation) is not expected. Furthermore, the work environment – i.e., open air, is of such a nature that particulate matter is freely dispersed, as opposed to mineral dust generation within a confined space (Resilient Environmental Solutions, 2019).

The dust generated and fumes emissions do not only impact people (health and visual) and fauna but also flora. Mainly for nearby flora, the fallout dust could affect the rates of photosynthesis and transpiration in a long-terms due to the duration of exploration activities. The settled dust on plant leaves may not only affect the vegetation's functionality but also livestock that feed on the vegetation (i.e. browsing).

The impact can be rated as medium (significance) if no mitigation measures are implemented. However, once this is done, the impact significance can be reduced to low - please refer to the assessment below (**Table 18**).

Table 18: Assessment of the impacts of exploration on air quality

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M - 3	M/H - 4	M - 6	M - 3	M - 39
Post mitigation	L - 1	L - 1	L - 2	L/M - 2	L - 8

Mitigations and recommendation to minimize dust

- Exploration vehicles should not drive at a speed more than 40 km/h to avoid dust generation around and within the site area.

- The Proponent should ensure that the exploration schedule is limited to the given number of days of the week, and not every day. This will keep the vehicle-related dust level minimal in the area.
- Dust control measures such as reasonable amount of water spray should be used on gravel roads and near exploration sites to suppress the dust that may be emanating from certain exploration areas on the EPL such as drilling, trenching and test quarrying sites.
- Dust masks, eye protective glasses and other respiratory personal protective equipment (PPE) such as face masks should be provided to the workers on site drilling areas, where they are exposed to dust.
- The impact mitigation measures should be covered in the relevant farm access agreement as required by law on commercial farms. This should also apply to resettled/communal farms, if any.
- Drilling and excavating equipment should be regularly maintained to ensure drilling and excavation efficiency and so to reduce dust generation and harmful gaseous emissions.

7.4.8 Waste Generation

During the prospecting and exploration phase, domestic and general waste is produced on site. If the generated waste is not disposed of in a responsible way, land pollution may occur on the EPL or around the sites. The EPL is located in an area of moderate sensitivity to pollution. Improper handling, storage and disposal of hydrocarbon products and hazardous materials at the site may lead to soil and groundwater contamination, in case of spills and leakages. Therefore, the exploration programme needs to have appropriate waste management for the site. To prevent these issues, biodegradable and non-biodegradable wastes must be stored in separate containers and collected regularly for disposal at a recognized landfill/dump site. Any hazardous waste that may have an impact on the animals, vegetation, water resources and the general environment should be handled cautiously. Without any mitigation measures, the general impact of waste generation has a medium significance. The impact will reduce to low significance, upon implementing the mitigation measures. The assessment of this impact is given in **Table 19**.

Table 19: Assessment of waste generation impact

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M/H - 4	M - 3	M - 6	M - 3	M – 39

Post mitigation	L - 1	L - 1	L - 2	L/M - 2	L - 8
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Mitigations and recommendation to waste management

- Workers should be sensitized to dispose of waste in a responsible manner and not to litter.
- After each daily works, the Proponent should ensure that there are no wastes left on the sites.
- All domestic and general operational waste produced daily should be contained until such that time it will be transported to designated waste sites.
- No waste may be buried or burned on site or anywhere else.
- The exploration site should be equipped with separate waste bins for hazardous and general/domestic waste.
- Hazardous waste, including emptied chemical containers should be safely stored on site where they cannot be accessed and used by uniformed locals for personal use. These containers can then be transported to the nearby approved hazardous waste sites for safe disposal. No waste should be improperly disposed of on site or in the surroundings, i.e., on unapproved waste sites.
- Sewage waste should be stored as per the portable chemical toilets supplied on site and regularly disposed of at the nearest treatment facility.
- Oil spills should be taken care of by removing and treating soils affected by the spill.
- A penalty system for irresponsible disposal of waste on site and anywhere in the area should be implemented.
- Careful storage and handling of hydrocarbons on site is essential.
- Potential contaminants such as hydrocarbons and wastewater should be contained on site and disposed of in accordance with municipal wastewater discharge standards so that they do not contaminate surrounding soils and eventually groundwater.
- An emergency plan should be available for major/minor spills at the site during operation activities (with consideration of air, groundwater, soil and surface water) and during the transportation of the products(s) to the sites.
- All wastewater and hydrocarbon substances and other potential pollutants associated with the project activities should be contained in designated containers on site and later disposed of at nearby approved waste sites in accordance with MAWLR's Water Environment Division standards on wastewater discharge into the environment. This is

to ensure that these hazardous substances do not infiltrate into the ground and affect the local groundwater quality.

7.4.9 Occupational and Community Health and Safety Risks

Project personnel (workers) involved in the exploration activities may be exposed to health and safety risks. These are in terms of accidental injury, owing to either minor (i.e., superficial physical injury) or major (i.e., involving heavy machinery or vehicles) accidents. The site safety of all personnel will be the Proponent's responsibility and should be adhered to as per the requirements of the Labour Act (No. 11 of 2007) and the Public Health Act (No. 36 of 1919). The heavy vehicle, equipment and fuel storage area should be properly secured to prevent any harm or injury to the Proponent's personnel or local domestic animals.

The use of heavy equipment, especially during blasting and the presence of hydrocarbons on sites may result in accidental fire outbreaks. This could pose a safety risk to the project personnel and equipment and vehicles too.

If machinery and equipment are not properly stored and packed, the safety risk may not only be a concern for project workers but residents too, especially children, given the fact that the project sites are within farms, where children reside too. This is true because, the local children may try to access the active site areas and play with dangerous materials and equipment.

Another potential health risk stemming from the proposed project is the handling of project hazardous waste on site in relation to the local community. The impact is likely because some of the unsuspecting and uniformed local people may be wandering around and if they see improperly stored or kept empty hazardous containers on site, they may be tempted to take these containers without the site workers or Proponent's knowledge. The locals may then use the containers for domestic use like water and/or food storage without proper container treatment or cleaning. The storage of and eventual consumption of water and/or food from such containers may lead to serious health risks to the locals.

The impact is probable and has a medium significance rating. However, with adequate mitigation measures, the impact rating will be reduced to low. This impact is assessed in **Table 20** below and mitigation measures provided.

Table 20: Assessment of the impacts of exploration on health and safety

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M - 3	M - 3	M - 6	M/H - 4	M – 48

Post mitigation	L/M - 2	L/M - 2	L - 2	L/M - 2	L - 12
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Mitigations and recommendation to minimize health and safety issues

- The Labour Act’s Health and Safety Regulations should be complied with.
- The Proponent should commit to and make provision for bi-annual full medical check-up for all the workers at site to monitor the impact of project related activities on them (workers).
- As part of their induction, the project workers should be provided with an awareness training of the risks of mishandling equipment and materials on site as well as health and safety risk associated with their respective jobs.
- When working on site, employees should be properly equipped with adequate personal protective equipment (PPE) such as coveralls, gloves, safety boots, earplugs, dust masks, safety glasses, etc.
- Heavy vehicle, equipment and fuel storage site should be properly secured, and appropriate warning signage placed where visible.
- Drilled boreholes that will no longer be in use or to be used later after being drilled should be properly marked for visibility and capped/closed off.
- Ensure that after completion of exploration holes, drill cuttings are put back into the hole and the holes filled and levelled.
- An emergency preparedness plan should be compiled, and all personnel appropriately trained.
- Workers should not be allowed to drink alcohol prior to and during working hours nor allowed on site when under the influence of alcohol as this may lead to mishandling of equipment which results into injuries and other health and safety risks.
- The site to be equipped with "danger" or "cautionary" signs for any potential danger or risk area identified on site.

7.4.10 Vehicular Traffic Use and Safety

The district roads such as D2315, and D2306 are the main transportation routes for all vehicular movement in the area, and provide access to the EPL and connect the project area to other towns such as Omaruru and Uis via C36. Therefore, traffic volume will increase on these district roads during exploration as the project would need a delivery of supplies and services on site.

These service and supplies will include but not limited to water carting, waste removal, procurement of exploration machinery, equipment, and others.

Depending on the project needs, trucks, medium and small vehicles will be frequenting the area to and from exploration sites on the EPL. This would potentially increase slow moving heavy vehicular traffic along these roads. The impact would not only be felt by the district road users but also the local road users such as farms (via local access gravel and single-track roads). This would add additional pressure on the roads.

However, only so many times a week or even monthly that the exploration related heavy trucks will be transporting materials and equipment from and to site during exploration. Therefore, the risk is anticipated to be short-term, not frequent, and therefore of medium significance. Pre-mitigation, the impact can be rated medium and with the implementation of mitigation measures, the significance will be low as assessed in **Table 21** below.

Table 21: Assessment of the impacts of exploration on road use (vehicular traffic)

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M - 3	M/H - 4	L/M - 4	M/H - 4	M - 44
Post mitigation	L/M - 2	L/M - 2	L - 2	L/M - 2	L - 12

Mitigations and recommendation to minimize impact on road safety and related vehicular traffic issues.

- The transportation of exploration materials, equipment and machinery should be limited to once or twice a week only, but not every day to reduce the 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 potential carted water to the site (from other source of water supply) should be done once or twice a week in container that can supply and store water for most of the week, thus reducing the number of water-carting trucks on the road daily.
- Drivers of all project phases' vehicles should be in possession of valid and appropriate driving licenses and adhere to the road safety rules.
- Drivers should drive slowly (40km/hour or less) and be on the lookout for livestock and wildlife as well as residents/travellers.

- 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.
- Sufficient parking area for all project vehicles should be provided for and clearly demarcated on sites.
- The Proponent should make provision for safe materials and equipment offloading and loading areas on sites.
- No heavy trucks or project related vehicles should be parked outside the project site boundary or demarcated areas for such purpose.
- To control traffic movement on site, deliveries from and to site should be carefully scheduled. This should optimally be during weekdays and 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 and access permits obtained from the Roads Authority.

7.4.11 Noise and vibrations

Prospecting and exploration works (especially drilling and test quarrying) may be a nuisance to surrounding communities who are in close proximity of the active exploration sites due to the noise produced by the activity. Excessive noise and vibrations can be a health risk to workers on site. The exploration equipment used for drilling on site is of medium size and the noise level is bound to be limited to the site only, therefore, the impact likelihood is minimal. Without any mitigation, the impact is rated as of medium significance. To change the impact significance from the pre-mitigation significance to low rating, the mitigation measures should be implemented. This impact is assessed in **Table 22** below.

Table 22: Assessment of the impacts of noise from exploration

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
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Pre mitigation	M/H - 4	M - 3	M - 6	M - 3	M - 39
Post mitigation	L - 1	L/M - 2	L - 2	L/M - 2	L - 10

Mitigations and recommendation to noise

- Noise from project vehicles and equipment on the working sites of the EPL should be at acceptable levels.
- Exploration hours should be restricted to between 08h00 and 17h00 to avoid noise and vibrations generated by exploration equipment and the movement of vehicles before or after hours, thus disturbing the tranquillity in the area during the night or early morning hours.
- When operating the drilling machinery onsite, workers should be equipped with personal protective equipment (PPE) such as earplugs to reduce exposure to excessive noise.
- The transportation of exploration materials, equipment and machinery should be limited to once or twice a week only, but not every day.
- Target exploration sites that may be found to be within less than 1 km from the residences (farmhouses) should be avoided at all costs. This is done to preserve tranquillity of the residents.

7.4.12 Water Resources Use

Water resources is impacted by project developments/activities in two ways, namely through pollution (water quality) or over-abstraction (water quantity) or at times both.

Based on the groundwater potential map of Namibia, the area is found in a low to moderate groundwater potential areas. The area has no permanent surface water source such as rivers therefore it relies on schemes and privately drilled boreholes for water supply. The abstraction of more water than it can be replenished from low groundwater potential areas would negatively affect the local communities (communal farmers and livestock) that depend on the same low potential groundwater resource (aquifer).

The impact of the project activities on the resources would be dependent on the water volumes required by each project activity. Commonly exploration activities use a lot of water, mainly drilling. However, this depends on the type of drilling methods employed (diamond drilling is more water-consuming compared to drilling methods such as reverse circulation for instance) and the type of mineral being explored for.

The drilling method to be employed for this project's exploration activities is Reverse Circulation. The required water for exploration is about 20,000 litres per month amounting to an average of 645 litres per day. This water will be used for drilling purposes such cooling and washing drilling & test quarrying equipment, drinking and other domestic purposes. Given the low to medium groundwater potential of some project site areas, the Proponent may consider carting some of the water volumes from outside the area and stored in industry standard water reservoirs/tanks on site. Although exploration may be requiring this much water, this would also be dependent on the duration of the exploration works and number of exploration boreholes and test quarries required to make reliable interpretation on the commodities explored for. The exploration period is limited timewise, therefore, the impact will only last for the duration of the exploration activities and ceases upon their completion.

Without the implementation of any mitigation measures, the impact can be rated as medium, but upon effective implementation of the recommended measures, the impact significance would be reduced to low as presented in the **Table 23** below.

Table 23: Assessment of the project impact on water resource use and availability

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M - 3	M/H - 4	L/M - 4	M/H - 4	M - 44
Post mitigation	L/M - 2	L/M - 2	L - 2	L/M - 2	L - 12

Mitigations and recommendation to manage water use

- Water abstracted from boreholes or supplied from other local water sources such as schemes (boreholes) as well as carting should be used efficiently, and recycling and re-using of water on certain site activities should be encouraged, where necessary and possible.
- In an event that the abstraction of water from onsite sources is not sustainable, the Proponent should consider carting water from elsewhere outside the site area to relieve pressure of the available resources. Agreements of water supply should be made between the willing water supplier and the Proponent.
- Water reuse/recycling methods should be implemented as far as practicable such that the water used to cool off exploration equipment should be captured and used for the cleaning of project equipment, if possible.

- Water storage tanks should be inspected daily to ensure that there is no leakage, resulting in wasted water on site.
- Water conservation awareness and saving measures training should be provided to all the project workers in both phases so that they understand the importance of conserving water and become accountable.

7.4.13 Impact on Local Resources and Services (roads and water)

These type of projects are usually associated with movements of heavy trucks and equipment ro machinery that use locals frequently. The heavy trucks travelling on the locals roads and exert more pressure on them. These local roads in remote areas are normally not in a good condition already for light vehicles, and the additional vehicles such as heavy ones may make it worse and difficult to be used by small (vehicles) that already struggled on the roads before they got worse. This will be a concern if maintenance and care is not done during the exploration phase. The impact would be short-term (during exploration only) and therefore, manageable.

Without any management and or mitigation measures, the impact can be rated as medium and to reduce this rating to low, the measures will need to be effectively implemented. The assessment of this impact is presented in **Table 24**.

Table 24: Assessment of exploration on local services (roads and water)

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M/H - 4	M - 3	M - 6	M - 3	M – 39
Post mitigation	L - 1	L - 1	M/L - 4	M/L -2	L - 12

Mitigations and recommendation to minimize the impact on local services

- The Proponent should consider re-using and recycling water on site to reduce the abstraction of fresh water from the local sources.
- The heavy trucks transporting materials and services to site should be scheduled to travel at least twice or thrice a week to avoid daily travelling to site, unless on cases of emergencies.
- The Proponent should consider frequent maintenance of local roads in the area of operation to ensure that the roads are in a good condition for other roads users from and outside the area.

7.4.14 Social Nuisance: Property intrusion and Disturbance or Damage (Land Use)

The presence of some out-of-area workers may lead to social annoyance to the local community. This could particularly be a concern when they or some of those workers enter or damage properties of the locals. The locals' private properties could be homes, yards/fences, vegetation, or domestic animals (livestock) or any properties of economic or cultural value to the farm/landowners or occupiers of the land. The damage or disturbance to properties may not only be private but local public properties. The unpermitted and unauthorized entry to private properties may cause social crashes between the local community (affected property owners) and the Proponent (being responsible for the overall project activities).

Pre-implementation of mitigation measures, the impact is rated as of medium significance. However, upon mitigation (post-mitigation), the significance will change from medium to low rating. The impact is assessed below (**Table 25**).

Table 25: Assessment of social impact of community property damage or disturbance

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M/H - 4	M - 3	M - 6	M - 3	M - 39
Post mitigation	L - 1	L - 1	M/L - 4	M/L -2	L - 12

Mitigations and recommendation to minimize the issue of damage to or intrusion of properties

- The Proponent should inform their workers on the importance of respecting the locals' properties by not intruding or damage their homes, fences or snaring and killing their livestock.
- Any workers or site employees that will be found guilty of intruding peoples 'privately owned properties should be called in for disciplinary hearing and/or dealt with as per their employer' (Proponent)'s code of employment conduct
- Site workers should be advised to respect the community and local's private properties, values, and norms.
- No worker should be allowed to wander in people's private yards or fences without permission.
- Site workers are not allowed to kill or in any way disturb local livestock.

- No worker should be allowed to, without permission cut down or damage trees belonging either the farm owner, the neighbouring farms or in the already scarce community vegetation.

7.4.15 Social Nuisance: Job seeking and Differing Norms, Culture and Values

Like it is will any new development or project of that nature in an area, the proposed project activities may attract a potential influx of people from outside the project area in search of job opportunities. Such influxes during the exploration phase may lead to social annoyance to the local community as well as conflicts. This is generally considered a concern given the current unemployment rate of youth in Namibia, that people from other areas in different regions may learn of the project intentions (especially from the ESA newspaper adverts) and be forced to go look for work opportunities in Okombahe without considering the locals. Different people may come with different ways of living to the area, which could interfere with the local norms, culture, and values. This could potentially lead to social crashes between the locals and outsiders (out-of-area job seekers).

The influx of people into the project area may also lead to sexual relations between these out-of-area workers and the locals. This would lead to the spreading of sexual transmitted diseases (i.e., HIV/AIDS) when engaging in unprotected sexual intercourse.

Pre-implementation of mitigation measures, the impact is rated as of slightly high to medium significance. However, upon mitigation (post-mitigation) – see mitigation measures below, the significance will change from medium to low rating. The impact is assessed in Table 26 below.

Table 26: Social impact assessment of outsiders' influx into the area (job seeking related)

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M - 3	M/H - 4	L/M - 4	M/H - 4	M - 44
Post mitigation	L/M - 2	L/M - 2	L - 2	L/M - 2	L - 12

Mitigations and recommendation measure to reduce the influx of outsiders into the area

- The Proponent should prioritize the employment of more local people, and only if necessary and due to lack of skills in the area, out-of-area people can be given some of the work. This is to avoid the influx of outsiders into the area for works that can be done the locals.

- The locals to be employed during the project phases should be provided with the necessary training of skills required for the project to avoid bringing in many out-of-area employees. This way, skills development and transfer is ensured in the Okombahe community.
- The workers should be engaged in health talks and training about the dangers of engaging in unprotected sexual relations which results in contracting HIV/AIDS and other sexual related infections.
- Out-of-area workers that may be employed (due to their unique work skills) on site should be sensitized on the importance of respecting the local values and norms, so that they can co-live-in harmony with the local communities during the duration of their employment on site.

7.5 Cumulative Impacts Associated with Proposed Exploration

According to the International Finance Corporation (2013), cumulative impacts are defined as “those that result from the successive, incremental, and/or combined effects of an action, project, or activity (collectively referred to in this document as “developments”) when added to other existing, planned, and/or reasonably anticipated future ones”.

Similarly, to many other exploration projects, one cumulative impact to which the proposed project and associated activities potentially contribute is the:

- **impact on road infrastructure:** The proposed exploration activity contributes cumulatively to various activities such as commuting of project personnel to and from site throughout the two stages of exploration (mainly during detailed exploration), farming activities and travelling associated with tourism. The contribution of the proposed project to this cumulative impact is however not considered significant given the scale, duration, and extent of the intended mineral exploration activities.
- **The use of water:** While the contribution of this project will not be significant, mitigation measures to reduce water consumption during exploration are essential.

7.6 Mitigations and Recommendations for Rehabilitation

Rehabilitation of the exploration sites will include but not limited to the following:

- Revegetation of bare areas with species consistent with surrounding vegetation, where possible;
- Refilling of trenches and or pits in such a way that subsoil is replaced first, and topsoil replaces last.
- Carrying away all waste generated from the last disposal to the last days on site.
- Closing off and capping of all exploration drilling boreholes. The boreholes should not only be filled with sand alone, as wind will scour the sand and re-establish the holes.
- Necessary landscaping of exploration areas should be undertaken upon completion of each phase of exploration (drilling, sampling, test quarrying, etc.).

8 RECOMMENDATIONS AND CONCLUSIONS

8.1 Recommendations

The key potential impacts associated with the proposed exploration activities and its associated activities on EPL were identified and assessed. It is found that most of the identified potential negative impacts are rated as medium significant. Therefore, these medium rated potential negative impacts identified in this study can be avoided and minimised (where impacts cannot be avoided) by implementing the mitigation measures given herein, as well as those provided in the management action and monitoring plans provided in the Draft EMP to reduce the significance rate from medium to low. **However, one of the potential negative impacts (archaeological impact) having a very concerning significance rating (high).**

A desktop Archaeological Report has been compiled as part of the ESA, but this is not sufficient to make an informed decision on practical practical management and mitigations to address the impact. Therefore, triggers a Detailed Archaeological and Heritage Assessment

A public consultation meeting in a form of an interaction session was held with the public, specifically some of the affected farm owners and community members on the 25th of August 2021 in Okombahe. The interested and affected parties raised their comments and concerns on the proposed project activities, and these were noted down during the meeting. The concerns and comments received from the public and the local community members formed the basis for this Report and development of the Draft EMP.

The following recommendations are made as condition to consideration of ECC for the proposed exploration on EPL 7343:

- **A Detailed (Comprehensive) Archaeological & Heritage Assessment should be done to ascertain the actual impact of the proposed exploration activities, particularly Dimension Stone on the archaeological sites and objects on the //Khan-hệb Mountain as the main concern from the archaeology perspective.**

Once the Detailed Archaeological Assessment and the ESA Report updated with the findings and recommendations of the Archaeologist, the following recommendations will be made:

- All required permits, licenses and approvals for the proposed activities should be obtained as required (please refer to the Permitting and Licensing Table in the Draft Environmental Management Plan. These include permits and licenses for land/farm access agreements to explore and ensuring compliance with these specific legal requirements.
- The Proponent complies with the legal requirements governing this type of project and its associated activities.
- All mitigations provided in this Report and the management action plans in the EMP should be implemented and monitoring conducted as recommended.
- All the necessary environmental and social (occupational health and safety) precautions provided should be adhered to.
- Site areas where exploration activities have ceased should be rehabilitated, as far as practicable, to their original state.
- The monitoring of the implementation of mitigation measures should be conducted, applicable impact's actions taken, reporting done and recorded as recommended in the Draft EMP (upon updating the EMP with / incorporating management and mitigation measures from an Archaeologist).

8.2 Conclusion

The potential positive and negative impacts stemming from the proposed exploration activities were identified, assessed and mitigation measures made thereof. For some potential impacts management and mitigation measures were recommended for implementation to avoid and/or reduce (where impact avoidance impossible) the risks to acceptable levels.

However, given the significant of the potential impact on the archaeology environment and desktop-level recommendations only for the archaeological study, Excel Dynamic Solutions (Pty) Ltd, under the specialist (Archaeologist) recommends that a Detailed Archaeological & Heritage Assessment Study should be done. This is vital in ascertaining the actual and extent of the impact of the proposed exploration activities, particularly Dimension Stone on the archaeological and herigate resources (sites and objects) potentially on and around the Mountain of concern, i.e. the //Khan-hêb. In other words, a detailed field investigation within the EPL 7343 must be carried out to confirm existing findings and determine of any other possible archaeological, cultural or heritage features

The Detailed Archaeological & Heritage Assessment would then ensure that the potential impact is sufficiently understood to enable the recommendation of practical and site-specific management and mitigation measures.

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**APPENDIX A: COPY OF THE ENVIRONMENTAL CLEARANCE
CERTIFICATE (ECC) APPLICATION FORM 1**



ANNEXURE 1

FORMS

Form 1

REPUBLIC OF NAMIBIA

ENVIRONMENTAL MANAGEMENT ACT (No. 7 of 2007)

(Section 32)



APPLICATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATE (APPLICATION NO. 002907)

PART A: DETAILS OF APPLICATION

1. Name: Timecall Erongo Mining CC
2. Business Registration: CC/2015/12836
3. Correspondence Address: PO Box 219 Windhoek
4. Name of Contact Person: Excel Dynamic Solutions (Environmental Consultant)
5. Position of Contact Person: Environmental Assessment Practitioner
6. Telephone No.: +264 (0) 61 259 530
7. Fax No: Fax2email: +264 (0) 886 560 836
8. E-mail Address: info@edsnamibia.com

PART B: SCOPE OF THE ENVIRONMENTAL CLEARANCE CERTIFICATE

1. THE ENVIRONMENTAL CLEARANCE CERTIFICATE IS FOR:

The 'listed activities' that might be affected are listed below:

MINING AND QUARRYING ACTIVITIES

3.1 The construction of facilities for any process or activities which requires a license, right or other form of authorization, and the renewal of a license, right or other form of authorization, in terms of the Minerals (Prospecting and Mining Act), 1992.

2. DETAILS OF THE ACTIVITY(S) COVERED BY THE ENVIRONMENTAL CLEARANCE CERTIFICATE:

2.1 Title of Activity

Environmental Clearance Certificate (ECC) for the Proposed Exploration Activities of Dimension Stone and Precious Metals on Exclusive Prospecting License (EPL) 7343 near Okombahe in the Erongo Region, Namibia

2.2 Location of Activity

EPL is located on the immediate east direction of the Okombahe Settlement, which is about 60km west of Omaruru in the Erongo Region. The EPL covers the Okombahe Settlement to the east and two farms, namely Portion 1 of Farm Okombahe No. 112 (to the north) and Farm Kawab No.117 (to the east, Portion 1, and Remainder of the Farm). The locality map and the map showing EPL 7343 and the farms it covers are shown in Figure 1 and Figure 2 of the Background Information Document (BID) attached hereto.

2.3 Nature of Activity

The nature of the activity is that associated with the planned exploration activities. The main activities are as follows, with further details in the BID:

For Dimension Stone

- Desktop study.
- Field evaluation.
- Detailed exploration.
- Feasibility study: test quarrying; and
- Rehabilitation of explored sites.

For Precious Metals

- Phase 1: Non-invasive techniques (prospecting) - This will include geological field mapping and ground-based surveys, reviewing of existing geological maps and historical drilling data as well as field evaluation and sampling,
- Phase 2: Invasive techniques (detailed exploration) – the techniques involved herein include soil geochemistry survey and rock sampling, trenching, and/ or pitting and detailed exploration drilling. The preferred drilling technique for this exploration programme is Reverse Circulation (RC) Drilling. However, if found to be necessary, diamond drilling may also be considered for this exploration programme, during advanced stages of exploration.

Please refer to the attached EPL 7343's BID for more details on the project description and activity requirements.

2.4 Scale and Scope of the Activity

The proposed activity will only entail the detailed exploration for economic feasible good quality dimension stone and precious metals on the EPL. The proposed exploration activities are anticipated to last for about three years (36 months). The planned activities and required resources and infrastructure are briefly described below and more details are in the BID.

The following resources will be required for the proposed project activities in terms of vehicles and equipment includes the following:

The following equipment and machinery will be required for the exploration of dimension stone:

- 4X4 pickup trucks
- Butterfly cutter
- Long distance haulage and dump trucks
- Diamond wire-saw cutter and coring equipment
- Excavator / front-end loader to scoop up sandy overburden
- Dozers (to clear vegetation along planned drilling site access roads)
- Down-The-Hole (DTH) Drilling rig
- Drilling fluids stored in manufacturers approved containers
- Air compressors
- Diesel generator for power supply
- Two-way radios for constant communication on site.

The following equipment and machinery will be required for the exploration of precious metals:

- Two 4X4 vehicles
- One truck
- Two 10,000-litre water tanks
- RC Drill rigs, and drilling machines
- Drilling fluids stored in manufacturers approved containers
- A power generator
- Diesel generator for power supply
- Two-way radios for constant communication on site.

These equipment, machinery and vehicles will be kept at a storage site that will be established within the EPL. In terms of project services infrastructure, please refer to the BID.

PART C: DECLARATION BY APPLICANT

I hereby certify that the particulars given above are correct and true to the best of my knowledge and belief. I understand the environmental clearance certificate may be suspended, amended, or cancelled if any information given above is false, misleading, wrong or incomplete. Agulhas Mineral Resources cc



_____ **FREDRIKA N. SHAGAMA** Environmental Assessment Practitioner

Signature of Applicant Full Name in Block letters Position

on behalf of Timecall Erongo Mining CC 19 August 2021
Date

Appendix B: Environmental Management Plan (EMP) –
uploaded to the Portal separately as required

Appendix C: Curriculum Vitae (CV) of the Environmental
Assessment Practitioner (EAP) - **uploaded to the Portal
separately as required**

Appendix D: List of Interested and Affected Parties
(I&APs) - **uploaded to the Portal separately as required
(part of the “Proof of Consultation” file)**

Appendix E: Background Information Document (BID) -
**uploaded to the Portal separately as required (part of
the “Proof of Consultation” file)**

Appendix F: EIA Notification in the newspapers (*Die
Republikein, Namibian Sun and Allgemeine Zeitung*) -
**uploaded to the Portal separately as required (part of
the “Proof of Consultation” file)**

Appendix G: Public Consultation Meeting Minutes –
**uploaded to the Portal separately as required (part of
the “Proof of Consultation” file)**

**APPENDIX H: DESKTOP ARCHAEOLOGY & HERITAGE
ASSESSMENT REPORT**

ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT REPORT

FOR THE PROPOSED PROSPECTING AND EXPLORATION ACTIVITIES ON EXCLUSIVE PROSPECTIVE LICENCE (EPL) NO. 7343 LOCATED NEAR OKOMBAHE SETTLEMENT IN THE ERONGO REGION, NAMIBIA.

Compiled by

Roland Mushi (Archaeologist)



Prepared for

Timecall Erongo Mining CC

Email: Aune.hebei@gmail.com

Project Details

Item	Description
Title	Archaeological and Heritage Impact Assessment Report for the Proposed Exploration Activities on Exclusive Prospecting License (EPL) No. 7343, Located near Okombahe Settlement in THE Erongo Region, Namibia.
Project Location & Site name	EPL 7343, Near Okombahe Settlements, Erongo Region-Namibia
Targeted Commodity	Dimension stone and Precious Metals
Granted & Expiry Date	28 August 2019 & 27 August 2022
Size of application area (EPL 7343)	7,464.7 ha
Purpose of the Study	The focus of study is to identify and record areas of the archaeological and cultural heritage significance, this include sites, artifacts, graves, features, paleontological, structures, buildings, landscape etc. that might be impacted by the proposed project.
Proponent	Timecall Erongo Mining CC Contact person: Ms. Aune Hebei Email: Aune.hebei@gmail.com
Practitioner	Excel Dynamics Solutions (Pty) Ltd 112 Robert Avenue, Windhoek Central Email: info@edsnamibia.com
Report Author(s)	Roland Mushi (Archaeologist) +264 85 3332373
Report Date	06-09-2021

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Authorship: This Archaeological and Heritage Impact Assessment Report has been prepared by Roland Mushi (Archaeologist). This report is for the review of the National Heritage Council of Namibia in accordance with the National Heritage Act No. 27 of 2004.

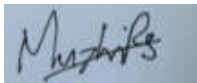
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Disclaimer: The Author(s) are not responsible for omissions and inconsistencies that may result from information not available at the time this report was prepared. This report may contain information of a specialized and/or highly technical nature and the Client is advised to seek clarification on any elements which may be unclear to it. Information, advice, recommendations and opinions in this document should only be relied upon in the context of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment.

The Archaeological and Heritage Impact Assessment was carried out within the context of tangible and intangible cultural heritage resources as defined by the National Heritage Council, Regulations and Guidelines as to the authorization of proposed exploration project being proposed by Timecall Erongo Mining CC.

Signed by



Roland Mushi (Archaeologist)

Memberships – Association of Southern African Professional Archaeologist – ASAPA (#480)

Society of Africanist Archaeologists - SAfA

South African Museums Association – SAMA (NCM 008)

Museums Association of Namibia - MAN

EXECUTIVE SUMMARY

A heritage and archaeological field survey was carried out on Exclusive Prospecting License (EPL) No. 7343 which is situated near Okombahe Settlements in the Erongo Region. The EPL is close to and slightly cover some private farms and communal lands. The field survey observed several archaeological artefacts such as lithic implements near and within the proposed area of exploration of Dimension stone. This part of the landscape is of very significant heritage to the Damara people, as it is intrinsically connected to their ancestral life ways and spiritual belonging.

The focus of this report/study is the Mountain //Khan-hêb or //Ganeb in Damara language) as it was called by their ancestors, which they consider to be a heritage site and natural landmark for the community. It is around this specific mountain where the Dimension stone exploration is supposed to take place. The historical accounts gathered suggest that this particular landscape requires special mitigation measures to be put in place. It is suggested that if the proposed project has to go on, the Proponent should fully adopt 'Chance Find Procedure' as devised for mining related projects (see *Appendix 1*).

Furthermore, a desk study was conducted to compliment the claims made from the public consultation meeting (on 25 August 2021 in Okombahe Settlement) but found nothing more regarding archaeological/cultural and heritage materials that are believed to be in the specific area of Mountain //Khan-hêb even though there are extensive archaeological works done in the Erongo Region. However, in the localized context, previous archaeological surveys also did not cover the whole of the area of the proposed exploration activities even though it is true that much of Namibia's archaeological sites are known, but many of them still remains relatively unregistered and un-researched. Therefore, it is strongly recommended that the area around Mountain //Khan-hêb be designated as a '**No-Go Area**' for the proposed Dimension stone exploration activities until a detailed investigation has been conducted.

***In this report the name //Khan-heb and //Ganeb are used interchangeably to refer to the same piece of landscape or geologic feature that underlies the focus of this study.**

Table of contents

EXECUTIVE SUMMARY	iv
1. Introduction.....	1
2. Background information	2
3. Scope of the Study	2
4. Terms of Reference	3
5. Methodology	3
6. Limitations and Assumptions	4
7. Legislative context.....	5
8. Geographical Location	6
8.1. Biophysical Environment.....	6
9. Settings of the Proposed Project Area	7
10. Desktop Assessment results.....	8
An Overview distribution of Archaeological Sites in Namibia	8
11. Archaeological Sequence in Namibia and Southern Africa in General.....	9
12. Archaeological, Cultural and Heritage Significance	10
13. Impact on the Lithic Artefacts	12
14. Impact Assessment on Archaeological artifacts and Heritage resource	15
15. Management Actions and Recommendation.....	16
16. References.....	17
Appendix 1	18
Chance Find Procedure	18

1. Introduction

Timecall Erongo Mining CC (*hereinafter referred to as The Proponent*) has been granted an Exclusive Prospecting Licence (EPL) No. 7343 by the Ministry of Mines and Energy (MME). The tenure of the licence is from the 28th of August 2019 to the 27th of August 2022. The 7,464.7-hectare (ha) EPL is just on the immediate east direction of the Okombahe Settlement, which is about 60km west of Omaruru in the Erongo Region. The EPL covers the Okombahe Settlement to the east and two farms, namely Portion 1 of Farm Okombahe No. 112 (to the north) and Farm Kawab No.117 (to the east, Portion 1, and remainder of the farm). EPL 7343 has potential for base & rare metals, dimension stone, industrial minerals, and precious metals. However, the targeted commodities for this project are dimension stone and precious metals (gold and silver) only (*see Figure 1*). Therefore, the Proponent intends to conduct mineral exploration activities within the EPL leading to the estimation and delineation of the target resources (commodities).

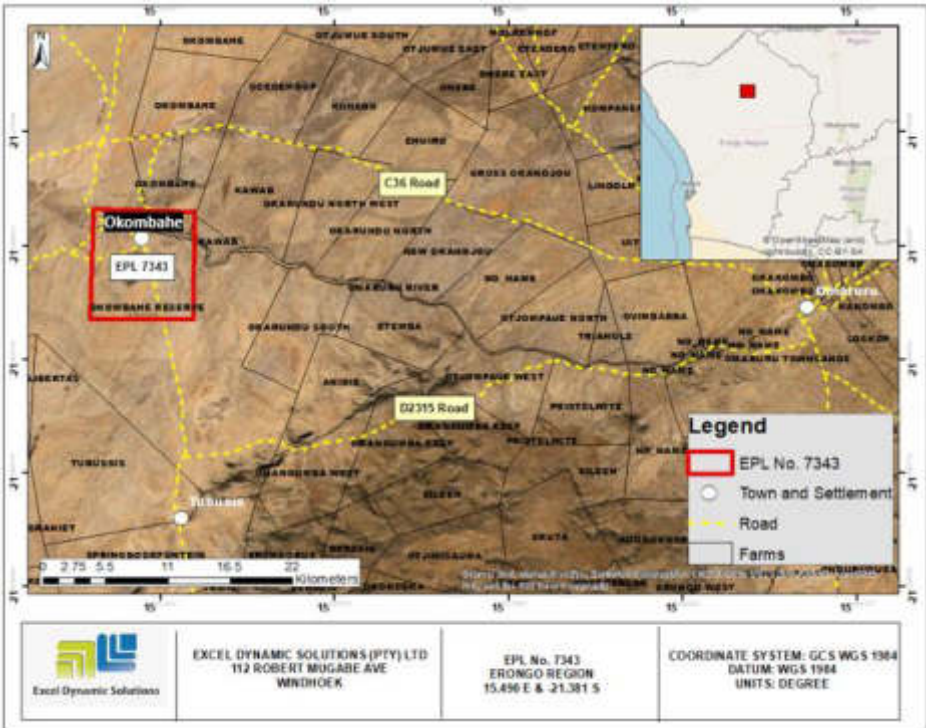


Figure 1: A Detailed location of EPL showing access roads, farms and land covered by the EPL 7343

In accordance with the Environmental Management Act (EMA) No. 7 of 2007, and its 2012 EIA Regulations, as well as National Heritage Act No. 27 of 2004, Timecall Erongo Mining CC has appointed Excel Dynamics Solutions to carry out an EIA study, and subsequently as a part of EIA report, Archaeological and Heritage Impact Assessment (AHIA) as required by the National

Heritage Act (No. 27 of 2004). Archaeological remains and Heritage resources in Namibia are as well protected under the same National Heritage Act (2004) and National Heritage Regulations (Government Notice 106 of 2005), and projects of this magnitude are also subject to archaeological assessment prior to the issuance of Environmental Clearance Certificate. Therefore, it is against this background that, Excel Dynamic Solutions was appointed to carry out this heritage impact assessment in the EPL 7343 on behalf of the Proponent.

2. Background information

Erongo Region is very important in terms of archaeological findings in Namibia, and its archaeological records are reported to have evidence of human occupation dating during the Pleistocene and Holocene periods approximately from 800,000 years ago to 2000 BP (Kinahan, 2012). Archaeological and cultural materials recorded in this region ranges from lithic artefacts, rock art paintings, rock shelters, graves, hunting blinds and huts as well as colonial battlefields. These material remains demonstrate the evidence of human evolutionary and technological advancement and manifested with their adaptation ways in this extreme arid environment of Central Namib which is attributed to the hunter and gatherers and nomadic pastoral societies (Kinahan, 2012). The archeology of the Okombahe and those of nearby constitute characteristic of Later Stone Age (LSA) hunter-gatherer rock art environments in central Namibia and comparable to those recorded in the key Erongo archaeological areas of Brandberg, Erongo Mountains and Spitzkoppe mountains (Mauran, G *et al* 2020).

3. Scope of the Study

The aim of the baseline study is to identify areas of archaeological and cultural heritage significance, this includes sites, structures, graves, artefacts, buildings, and landscape, document and assess their importance to the community and national at large. The study serves to assess the impact of non-renewable archaeological and heritage resources, and provide appropriate recommendations about the responsible cultural heritage management with measures that might be required to assist the Proponent in managing and safeguarding the discovered heritage sites in a conscious and responsible manner. It is also conducted to protect, preserve and develop such resource as stipulated by the National Heritage Council Act No. 27 of 2004.

4. Terms of Reference

The main task of this heritage and archaeological assessment reported was to identify sensitive archaeological and heritage sites that could be affected by the proposed exploration activities within the boundaries of EPL 7343. The assessment forms the basis of recommended management actions to be followed and strictly adhered to by the Proponent (as part of the environmental impact assessment) thus to avoid or reduce negative impacts that might occur. This study is therefore intended to satisfy the requirements of the applicable relevant legislation and regulations that are in place, in which the process of review and clearance may require further, or different mitigation measures to be adopted. Specifically, the heritage and archaeological assessment addresses the following primary elements to the proposed project activities, and these are to:

- (a) Identify and document the heritage, cultural and archaeological resources occurring in the proposed EPL.
- (b) To assess the potential impacts on archaeological/heritage resources of the proposed exploration activities.
- (c) suggest some specific mitigation measures and conservation strategies for the archaeological and cultural heritage resources that might occur in the area proposed for exploration which can be potentially destroyed during the detailed exploration; hence the project be considered by the authorities for the support and issuance of the Environmental Clearance Certificate.

5. Methodology

In Namibia, archaeological assessment typically combines three standardized methodologies. Desktop study, followed by field/foot survey and detailed field investigations. These are recognized by The International Council on Monuments and Sites (ICOMOS), international guidelines as well as those formulated by the Quaternary Research Services (QRS) in Namibia by Kinahan (2012). For this Heritage and Archaeological Impact Assessment followed a two-based process of evaluation: desktop and field-based survey. These methodologies were adopted in line with the standards for environmental assessment and the protocol developed for archaeological heritage assessment in Namibia devised by Quaternary Research Services (QRS) to reflect Namibian conditions and are accepted as a basis of evaluation by the National Heritage Council. Field-walking has been shown to be successful in identifying and delimiting areas of historical, archaeological, and cultural significances.

To supplement this assessment study, readily available information from the existing historical and desk study was sourced and utilized. This includes information on archaeological geospatial data, historical records of known archaeological and heritage sites conducted in or near Okombahe Settlements with regards to previous exploration and mining activities.

To establish the heritage significance of the resources, and their vulnerability to possible disturbance during the planned exploration, the assessment criteria below developed by QRS (Kinahan, 2012) established parallel 0-5 scales, summarized in (*Table 1*) below.

6. Limitations and Assumptions

The archaeological and heritage impact assessment reported herein relies on the indicative value of surface finds and desktop study. Also, due to the lack or insufficient existing documentation for archaeological and cultural heritage materials for the specific area, this makes it a bit difficult to establish a valid baseline against which to assess the potential impacts as discussed in public meeting, and insufficient time allocated for the field survey. As a result, the survey was only restricted to the northwest part of the //Ganeb Mountains. Hence, it is necessary to realize that the archaeological and heritage resources located during the desktop research and fieldwork do not necessarily represent all the possible heritage resources present within the area. Based on this assumption, it is possible to predict the likely occurrence of further archaeological or heritage sites, and to present a general statement of the local archaeological site distribution. Therefore, it is necessary to caution the Proponent that hidden, or buried archaeological and cultural materials might be exposed during the prospecting and exploration activities.

Table 1: Archaeological Significance and Vulnerability Rankings (Kinahan, 2012)

Scale	Significance Ranking	Scale	Vulnerability Ranking
0	no significance	0	Not vulnerable
1	Disturbed or secondary context, without diagnostic material	1	No threat posed by current or proposed development activities
2	Isolated minor find in undisturbed primary context, with diagnostic material	2	low or indirect threat from possible consequences of development (e.g. soil erosion)
3	Archaeological site (s) forming part of an identifiable local distribution or group	3	Probable threat from inadvertent disturbance due to proximity of development
4	Multi-component site (s), or central site (s) with high research potential	4	High likelihood of partial disturbance or destruction due to close proximity of development
5	Major archaeological site (s) containing unique evidence of high regional significances	5	Direct and certain threat of major disturbance or destruction

Table 2: Assessment criteria for the evaluation of cumulative impacts on archaeological sites devised by the QRN.

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

Table 3: Reversibility Ratings Criteria

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

7. Legislative context

During exploration or alteration of land for any uses of any place the soil disturbances is inevitable. In this regard, the presence of archaeological, historical, cultural and heritage resources (if there is any) of that place might be facing a serious threat of being destroyed either partially or completely and consequently destroy the evidence of the past societies and their life ways altogether. Such a risk occurrence and possibilities are so high especially in areas that had not been explored or mined before as the exploration and its associated activities will involve earth moving activities and changing of the landscape.

In Namibia, the principal instrument of legal protection for heritage resources is the National Heritage Act (No. 27 of 2004). However, no regulations have been formulated for the implementation of the National Heritage Act provisions concerning impact assessment. Heritage and Archaeological impact assessments therefore take place under the rubric of the Environmental Management Act (7 of 2007), which specifically includes cultural heritage elements in its definition of environment. The List of activities that may not be undertaken without Environmental Clearance Certificate: Environmental Management Act, 2007 (Government Notice 29 of 2012), and the Environmental Impact Assessment Regulations: Environmental Management Act, 2007 (Government Notice 30 of 2012) both apply to the management of impacts on heritage and archaeological sites and remains whether these are considered in detail by the environmental assessment or not. In its application, the National Heritage Act (27 of 2004) defines heritage resources as those of paleontological; archeological; ethnographic objects; historical objects/sites (military objects; wartime weapon, historic graves, cemeteries, or sacred sites), underwater heritage; rare geological objects including meteorites; built heritage such as industrial and mining sites as well as possible objects of scientific interests.

Burial Place Ordinance 27 of 1966

This Ordinance prohibits the desecration or disturbances of graves and regulate how bodies might be exhumed/unearthed or dug up.

8. Geographical Location

8.1. Biophysical Environment

The Geology of the area is underlain by Paleoproterozoic metamorphic rocks of the Huab Metamorphic Complex, which outcrop as an inlier of the Congo Craton surrounded by stratified rocks of the Damaran Orogen (Miller, 2008). The Okombahe Settlement is situated in the North-Western part of the Dâures Constituency in the Erongo Region of Eastern Central Namibia. The Settlement is situated within a transition zone between a semi-arid climate and an arid climate due to its geographic location in the escarpment between the Namib Desert and the Central Plateau. The arid conditions are because of dry descending air and upwelling of the cold Benguela Current. Soil condition consists of compressed barren and holomorphic soils. Perennial plants grow slowly while annual ones can only grow in the years with adequate rain.

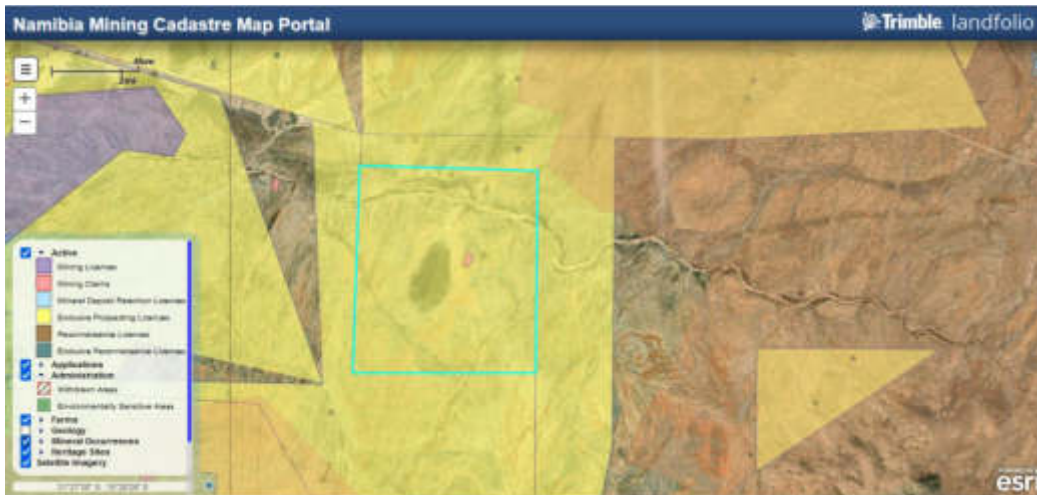


Fig 2: Map of EPL 7343 showing boundary of the proposed exploration activities. (Sourced from Namibia Mining Cadastre Portal)

9. Settings of the Proposed Project Area

An aerial view of the //Khan-hêb Mountain that is within the EPL 7343 boundaries, and it is part of landscape considered by community members to be of archaeological and cultural significance to the present and future generation (**Figure 3**).

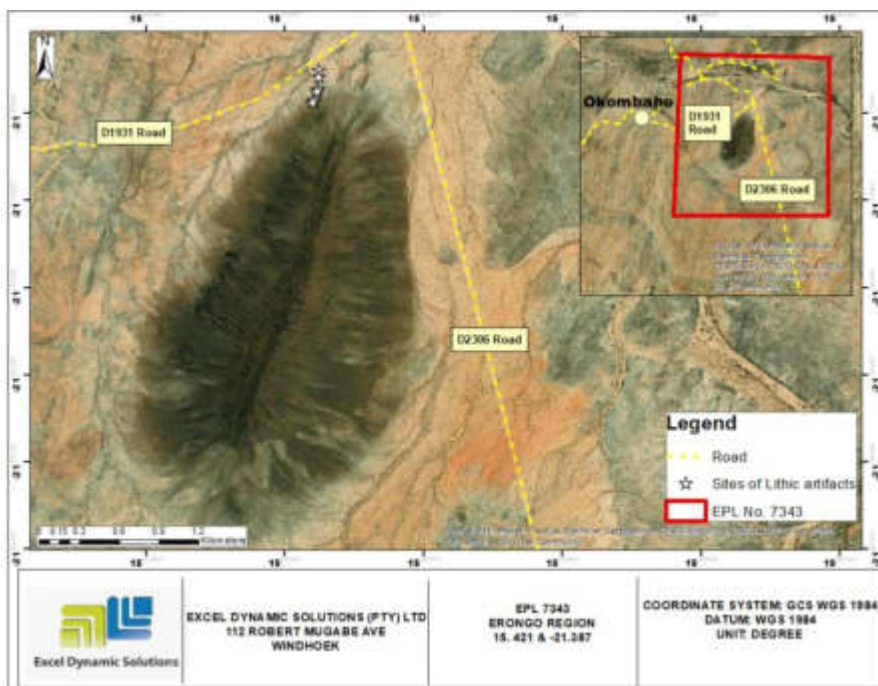


Figure 3: A map showing EPL 7343 boundaries near Okombaha Settlements in Erongo Region, Namibia

10. Desktop Assessment results

Information from the existing literatures and historical records shows that the proposed project area falls under the cultural landscape occurring in the context of Erongo Region. Putting it in context, the Erongo Region is highly endowed with archaeological and cultural heritage sites (**Figure 4**). In most part the Stone Age, archaeology is prevalent in the larger geographical area. However, no systematic research has been carried out around the proposed project site area to determine the archaeological and heritage potential of the landscape. Notwithstanding, Kinahan has carried out comparative research on rock painting shelters in Erongo Region from ‘Snake Rock’ in Hungorob Gorge Brandberg Mountain, ‘Bushman Paradise’ in Pondok Mountain, Spitzkoppe Mountain and at “Rainman Shelter” in Upper Otjohorong Granite Hill in 1998 (Nankela, 2020), the large part of the proposed project area remains unexplored to the outsiders. About 150 sites are recorded in the Erongo Region, and the Region is also endowed with Iron Age and contemporary heritage that needs to be ascertained later. Currently, Erongo Region has about 37 heritage sites which are listed as national monuments.

An Overview distribution of Archaeological Sites in Namibia

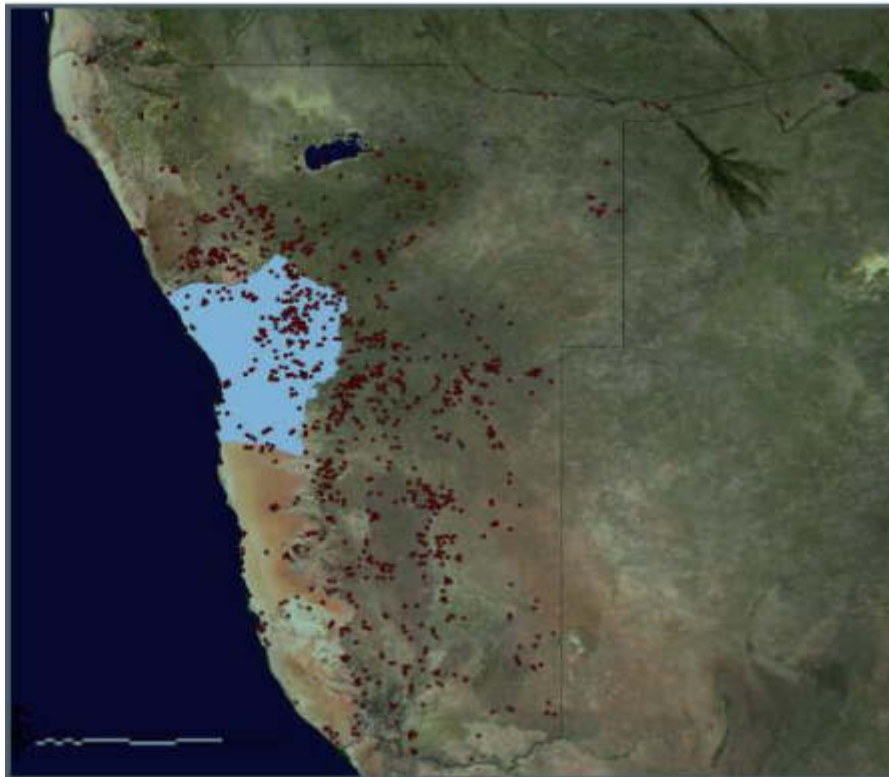


Figure 4: The above figure shows the distribution of the archaeological sites with focus in Erongo Region highlighted in blue color. Source: (Kinahan, J. 2012)

11. Archaeological Sequence in Namibia and Southern Africa in General

In order to put Namibian heritage and archaeological contexts into perspective, the following information is crucial to the general understanding of the occurrence and the associated period in different time-frames that would represent the known human occupation sequence in Namibia and Southern Africa in general (*Table 4*). This helps in building knowledge about past adaptations and cultural dynamics. According to Nankela (2017), the archaeological sequences of Namibia can be summarized as follow (*Table 5*):

Table 4: Archaeological sequences in Namibia

Period	Year	Area/Location	Evidence	Description
Pleistocene	400 000- 100 000	Namib Plains, Namib Desert & Lower Kuiseb	Bone fragments of extinct elephant and stone tools	
Holocene	10 000- 1 000	Around Namibia	Scattered artefacts, rock art sites, potsherds, beads, grave cairns, hut circles, human remains, axes, pointed flakes, cleavers and blades.	Sites are fragile, inaccessible and due to inadequate archaeological investigations in some sites.
Historic Period	500	Around Namibia	Cemeteries, old mine workings, waste rock walling, architectural heritage and WWI military engagements.	Namibia has an indication of intensive settlements between indigenous people and Europeans.

The General Archaeological Environment Sequences of the Southern Africa.

The Southern African archaeological environment is divided into the Stone Age, the Iron Age and the Historical Period. The (*Table 6*) below summaries different period in relation to the technological advancement and cognitive evolution.

Table 5: The Archaeological context: Sequence and definitions

Period	Approximate Dates
--------	-------------------

Early Stone Age	> 2 600 000 years ago – 250 000/200 000 years ago
Middle Stone Age	250 000/200 000 years ago – 40/25 000 years ago
Later Stone Age	25 000 years ago – AD 200 (up to historic times in certain areas)
Early Iron Age	AD 200 – AD 900/1000
Middle Iron Age	AD 900/1000 – AD 1300
Late Iron Age	AD 1300 – AD 1850

Source: (Sampson, 1974).

12. Archaeological, Cultural and Heritage Significance

The Mount //Khan-hêb which translates into “*The Mountain that got burned*” is an ancestral landmark. Geographically and historically this area is linked to the Damara tribe, the Mountain is located at EPL 7343 where is subjected to the proposed exploration of Dimension stones and Precious metals. The historical significance of the Mountain goes way back to pre-historical and pre-independence times, and to the Okombahe community this particular place is deemed to be a cultural heritage site as well as the natural landmark of the area. The mountain together with other small features around it have deep historical and cultural significance to many people long before the colonial period. According to the historical accounts and narration from the Headman of the area, back in the days the Mountain was used as their reference point whenever one wanted to go home or locate something or if someone gets lost this mountain was their datum point to find their way back home safely.

Other significant activities that are associated with this Mountain is that whenever it rains on the Mountain, their (Damara community) ancestors used to go up the Mountain and collect some ‘wild berries and some type of wild grasses’ that was used to supplement their diets for their families. It is a traditional norms that they are still practicing it even in modern days. On the archaeological part, according to the discussion held with the local community, the Mountain have some form of rock paintings in some places.

According to the elders of Okombahe community, on spiritual and cultural levels, the Mountain harbors the bones/remains of their ancestors who died and were buried there. These bones that are on the Mountain some belong to the Nama tribe people who used to hide there from the natives of the land, and from the known historical accounts, the Nama groups were sporadically attacked and killed by the people of Damara origin. Also, there is a monument on the western part of the Mountain that commemorates the heroes and heroines. And thus, the prevailing

unmarked graves belong to these various groups of people whom the society now think that they need to be highly respected and not disturbed. This particular place belongs to a larger group of people of Damara tribe origin, some are in Walvis Bay, Windhoek and elsewhere in the country.

The conclusion reached was that regarding the proposed exploration activities on EPL 7343 at //Khan-hêb Mountain, the Okombahe community do not support the activities such as dimension stone to take place or any activity that involves cutting of the Mountain. In other words, //Khan-hêb Mountain is a **'No-Go-Area'** for Dimension stone exploration. However, the community did not have any objection on the exploration of precious metals (gold & silver) elsewhere far from the specific Mountain. The main concern is the disturbance and destruction of their traditional site, routes of movements, archaeological and cultural heritage materials that are on the surface and sub-surface but also the total erasure of cultural and spiritual connection they have with this particular landscape. The issue of aesthetic environmental outlook of the area is of significance to the community and was raised during the stakeholder consultation meeting.

Therefore, it is likely that during the Dimension stone exploration activities on the Mount //Khan-hêb, the archaeological and heritage resources that are believed to be in this locality will be damaged or destroyed permanently, and the magnitude of this impact will likely be **HIGH**. Such archaeological and heritage resources is of highly significance to the people of Okombahe settlement, and the damage will be irreversible at both local and regional levels. It is recommended that if the proposed project will get a green light, a detailed field investigation should be carried out while the management actions are adopted and adhered including the 'Chance Find Procedure'.



Figure 5: General view of the Mount //Ganeb (Photo credit: Mushi, R.)

13. Impact on the Lithic Artefacts

During the surface observations which started from the foothill of EPL 7343 of the //Khan-hêb Mountain on the Eastern side, a densely scattered lithic artefacts could be easily observed lying everywhere. These Stone tools were of different shapes and size, most prevalent were the crushing and grindstone tools such as hammer-stones, flakes, cores, and hand-stone (*see figure 8, 9 & 10*) mostly made of granite, etc. Archaeologically speaking, the surface deposits observed constitute the abundance of the material artefacts that will allow further investigation in the area. While surface archaeology usually cannot address the issue of chronology, it however allows to get insight into past human behavioral organization at large spatial scale that cannot be achieved with a focus on a stratified sites (Marks, P. T, 2015).

The evidence of artefact workshops is prevalent in most of the area close and within the EPL 7343 and especially on the foothill of the //Khan-hêb Mountain, probably they were used and discarded. According to Sandelowsky (0000), the archaeological time scale used in Namibia is derived from that of sub-Saharan Africa, with the early stone age (ESA) covering the longest period of approximately 2,500 000- 150,000 years before present (BP). During this time, early human started to fashion tools out of stones according to distinctive patterns, the hand axes and cleavers are well known examples. The Middle Stone Age (MSA) (approximately 150,000-30,000 years BP) is typified by a triangular pointed tools possibly used as a lance head. During the Late

Stone Age (LSA approximately 30,000-2,000 BP) finely made small tools or microliths were hafted and used with non-lithic materials to make composite tools as bows and arrows (Sandelowsky, B. H. 1983).

The assessment of the level of lithic assemblage disturbances especially the artefacts occurring at the foothill of the mountain is likely going to be medium to high for the surface and sub-surface materials. The extent of impact is site-specific (localized). The vulnerability is also regarded as medium to high due to proximity of the EPL 7343. It is therefore possible that buried archaeological remains (*if any*) are likely to be destroyed or exposed during the exploration phase and in these scenarios, permanent loss of heritage is inevitable if extra care is not taken as per mitigation measures.



**Figure 6: Scattered and exposed lithic artifacts at the foothill of the Mountain within EPL 7343
(Photo: Mushi, R. 2021)**



Figure 7: A dense of lithic artefacts spread across the foothill of the //Ganeb Mountain



Figure 8 & 9: (Left) lithic artifacts, Hammer-stone and other debitage



Figure 10: A granitic grinding/crushing stone tool. (Photo: Mushi, R. 2021)

14. Impact Assessment on Archaeological artifacts and Heritage resource

This assessment has mainly identified some scatter lithic artifacts within the footprint of the EPL 7343 especially on the sides of foothill of the mountain (*see Figure 6, 7, 8, 9 & 10*), the archaeological artifacts identified are vulnerable since no detailed survey has been carried out in this EPL and the fact that archaeological remains are highly mobile in nature, the possibility of finding other features is very possible and therefore their historical and cultural settings can easily be disturbed or worse destroyed since exploration activities may be also extensive. The targeted EPL 7343 falls within the ancestral landmark which is the Mountain //Khan-hêb, and this part of landscape has a traditional and cultural significance to the people, more so the Damara people. The place is highly respected and protected by the community as it deemed to be a heritage landmark containing not only the remains of their ancestors but bones, graves, rock paintings, shelters/caves, and significance archaeological materials that might be buried or on surface, and it is the same locality where the Dimension stone exploration is targeted to take place.

Therefore, this specific area requires further a detailed investigation to identify, locate, record, interpret, and estimate heritage significance and other possible features within the footprint of the proposed exploration area as well as to develop mitigation measures to be adopted in the event of encroachment by the exploration activities. If no further field survey is carried out to either confirm or dismiss this assumption, the expected nature of impact would be in the form of direct physical disturbance and irreversible. It is therefore recommended that before exploration works/activities commence, a detailed field investigation is carried out targeting the specific Mountain while the management actions are adopted including the '*Chance Find Procedure*' approach.

15. Management Actions and Recommendation

The Proponent must be advised on the following recommended actions below:

- The targeted area on EPL 7343 should be declared as a **NO-GO-ZONE**.
- A detailed field investigation within the EPL 7343 must be carried out to confirm existing findings and determine of any other possible archaeological, cultural or heritage features.
- A landscape approach of the site management must consider culture and heritage features in the overall planning of exploration infrastructures within and beyond the License (EPL) boundaries.
- The Proponent is advised to make an application to the National Heritage Council for a Consent to allow detailed assessment of the area in relation to the proposed activity or development believed to be an archaeological site.
- The Project Proponent should engage an archaeologist to survey the area in advance before the issuing of clearance for the explorations to proceed; and e) The Proponent and contractors should be made aware of the provisions of Section 55 of the National Heritage Act in event significant heritage and culture features are discovered while carrying out the exploration activities operation.

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Appendix 1

Chance Find Procedure

Purpose of the chance find procedure

According to IFC Performance Standard 8 of law on Cultural. The chance find procedure is a project-specific procedure that outlines actions required if previously unknown heritage resources, particularly archaeological resources, are encountered during project construction or operation. A Chance Find Procedure is described a process that prevents chance finds from being disturbed until an assessment by a competent specialist is made and actions consistent with the requirements are implemented. Scope of the chance find procedure.

This procedure is applicable to all activities conducted by the personnel, including contractors that have the potential to uncover archaeological and heritage item/site. The procedure details the actions to be taken when a previously unidentified and potential heritage item/site is found during construction activities. Procedure outlines the roles and responsibilities and the response times required from both project staff, and any relevant heritage authority.

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

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

Manager/Supervisor must report the finding to the following competent authorities:

- National Heritage Council of Namibia (061 244 375)
- National Museum (+264 61 276800),
- National Forensic Laboratory (+264 61 240461).

Archaeological material must NOT be touched. Tempering with the materials is an offence under the heritage act and punishable upon conviction by the law.

Actions to be taken by person identifying archaeological or heritage material:

- If operating machinery or equipment - stop work immediately,
- Identify the site with flag tape,
- Determine GPS position if possible; and
- Report findings to foreman.

Action by Foreman:

- Report findings, site location and actions taken to superintendent; and
- Cease any works in immediate vicinity.

Action by Mine Manager / Environmental Officer:

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

Action by Archaeologist:

- Inspect site and confirm addition to project GIS,
- Advise NHC and request written permission to remove findings from work area; and
- Recovery, packaging and labelling of findings for transfer to National Museum.

In the event of discovering human remains:

- Actions as above,
- Field inspection by archaeologist to confirm that remains are human; and
- Advise and liaise with NHC and Police.