ENVIRONMENTAL SCOPING REPORT FOR THE PROPOSED MINERAL EXPLORATION ON EPL 7909 IN THE NAMIB NAUKLUFT NATIONAL PARK - WALVIS BAY DISTRICT, ERONGO REGION.

FOR

TUMAS GRANITE CC

APPLICATION NUMBER: APP - 240517003707

PREPARED BY:

outrun consultants cc

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PURPOSE OF THE DOCUMENT

The Environmental Scoping Report (ESR) was compiled as part of the Environmental & Social Impact Assessment (ESIA) for the proposed mineral exploration activities on EPL7909 in Walvis Bay District in Erongo Region. It describes the proposed studies and / or terms of reference of what will be assessed in the ESIA study for this project if necessary and the methodology to be followed. The ESR will be submitted to the Ministry of Mines and Energy (MME), Competent Authority and the Ministry of Environment, Forestry and Tourism (MEFT) for approval.

ENVIRONMENTAL SCOPING REPORT FOR THE PROPOSED MINERAL EXPLORATION ON EPL7909 IN THE NAMIB NAUKLUFT PARK WALVIS BAY DISTRICT IN ERONGO REGION, NAMBIA.

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LIST OF ABBREVIATIONS

Abbreviation	Full Name
BID	Background Information Document
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
ESIA	Environmental & Social Impact Assessment
ESMP	Environmental & Social Management Plan
GG	Government Gazette
GN	Government Notice
MAWLR	Ministry of Agriculture, Water and Land Reform
MEFT	Ministry of Environment, Forestry and Tourism

DEFINITION OF TERMS

"**Competent authority**" is defined as an organ of state which is responsible, under any law, for granting or refusing and authorisation; or the competent authority identified in terms of section 30 of the EMA, Act, 2007.

The **'Environment'** – this refers to the ecology, economy, society and politics.

"Human Poverty Index" (HPI) - is a composite index of poverty that focuses on deprivations in human lives, aimed at measuring poverty as a failure in capabilities in multiple dimensions.

"**Organ of state**" means any office, ministry or agency of State or administration the local or regional sphere of government or any other functionary or institution: exercising a power or performing a function in terms of the Namibian Constitution, or exercising a public power or performing a public function in terms of any law but does not include a a court or judicial officer.

"**Listed activity**" means an activity listed in terms of section 27 (1) or 29.

"**Proponent**" means a person who proposes to undertake a listed activity.

"Public" refers to the community or people in general.

The **'Stakeholders'** – this refers to the people, organisations, NGOs that are directly or indirectly affected by the project and / or have an interest in the project.

EXECUTIVE SUMMARY

This scoping study was undertaken for the proposed **MINERAL EXPLORATION ACTIVITIES ON EPL 7909 IN THE NAMIB NAUKLUFT NATIONAL PARK (NNNP) IN WALVIS BAY DISTRICT IN ERONGO REGION, NAMIBIA.** It was done in accordance with the requirements of the Environmental Impact Assessment Regulation, No. 30 of 2012, gazetted under the Environmental Management Act, No. 7 of 2007. Furthermore, it determines the potential need and structure of further environmental and social impact assessment, if any. The planned scope of this project comprises the desk study, electromagnetic survey, trenching, drilling and bulk sampling phases of the exploration activities for nuclear fuel, industrial and base metals and rare earth metals. Dimension stone will also be explored using the same techniques mentioned above and performing test cuts to complete the feasibility study. The scoping process was initialized by compiling a Background Information and invitation to participate Document (BID) followed by publishing notices of the Environmental and Social Impact Assessment (ESIA) in the national print media and posters pinned in public places in the Walvis Bay Area. Advertisements were published in the Villager and the Windhoek Observer newspapers during the period from the 29th of March 2024 to the 3rd of April 2024. The major issues identified for consideration in the ESIA and ESMP relate to short to medium term employment benefits linked to the exploration phase. Through the scoping process, it was found that there were no significant impacts emanating from this project that warrant conducting specialist studies except the Archaeological and Heritage Impact Assessment to comply with the National Heritage Act. Most of the potential negative impacts identified were short term and minor while a few major impacts related to aesthetic and visual impacts were raised by stakeholders in the Tourism sector. It is recommended that site specific subsidiary Environmental Management Plans (EMPs) are prepared by the Consultant as the exploration progresses when locations, number of holes and depths become known. However, these can be managed through implementation of the proposed mitigation measures presented herein. It is thus the opinion of the EAP that this Environmental Scoping Report (ESR) and the accompanying Environmental and Social Management Plan (ESMP) are sufficient to issue an Environmental Clearance Certificate ECC).

DOCUMENT STRUCTURE / ROAD MAP

The Scoping Report is intended to meet all requirements as stipulated in environmental management Act (2007) and its Regulations of 2012. To provide clarity to the reader, a document roadmap is provided in terms of the regulatory requirements (Table 1):

Table 1: Document structure / Road map.

CHAPTER	TITLE	OVERVIEW
	Purpose of the Environmental Scoping Report	N / A
	Executive Summary	N / A
	Document Road Map	N / A
1	Introduction	This section contains project background information about the proposed exploration project, ESIA process followed, details of the Proponent and the Consultant.
2	Legislative and Policy Framework	Highlights both international and domestic laws and policies that govern the planned project.
3	Public Consultation	Details the public and stakeholder consultation process followed and its findings.
4	Assessment of Alternatives	An analysis of various alternatives on the project.
5	Description of the Receiving Environment	Presents baseline environmental description of the project area against which project impacts will be evaluated in the future.
6	Identification and Evaluation of Potential Impacts	Presents both non-significant and significant impacts identified during the scoping phase of the ESIA.
10	Conclusion and Way Forward	Deductions and recommendations from the study
11	List of References	List of references quoted in the document

1 INTRODUCTION

The proponent, Tumas Granite CC (TG) is planning to embark on exploration of nuclear fuels, industrial minerals, base & rare earth metals and dimension stone from EPL 7909 located in the Namib Naukluft National Park - Walvis Bay District in Erongo Region. The planned work will progressively include geophysical surveying, geological mapping and sediment geochemical sampling and testing, drilling, bulk sampling and test cuts for Dimension stone. Mineral exploration activities are listed activities that require an Environmental Clearance Certificate (ECC) from the Ministry of Environment, Forestry & Tourism (MEFT). It is against this background that the Proponent appointed an independent consultant, Outrun Consultants to conduct the Environmental Impact Assessment (EIA) to comply with the requirements of the Environmental Management Act (2007).

Due to increased awareness of environmental issues being no longer limited to biophysical components, this led to the introduction of Social Impact Assessment (SIA) as a component of the EIA and over time an Environmental and Social Impact Assessment (ESIA) was introduced. An ESIA is now widely used for assessing potential project impacts during the planning phase of listed projects. An Environmental and Social Impact Assessment tool is an integrated process that captures the interrelationships between land and society. Outrun Consultants CC was tasked to conduct the Environmental and Social Impact Assessment for the mineral exploration activities on EPL 7909 by the Proponent, TG.

1.1. Project Location

The proposed project is in the Erongo region, in a predominantly tourism area in the Namib Naukluft National Park (NNNP) in Erongo Region. The locality map of the proposed project is shown in Figure 1 below.

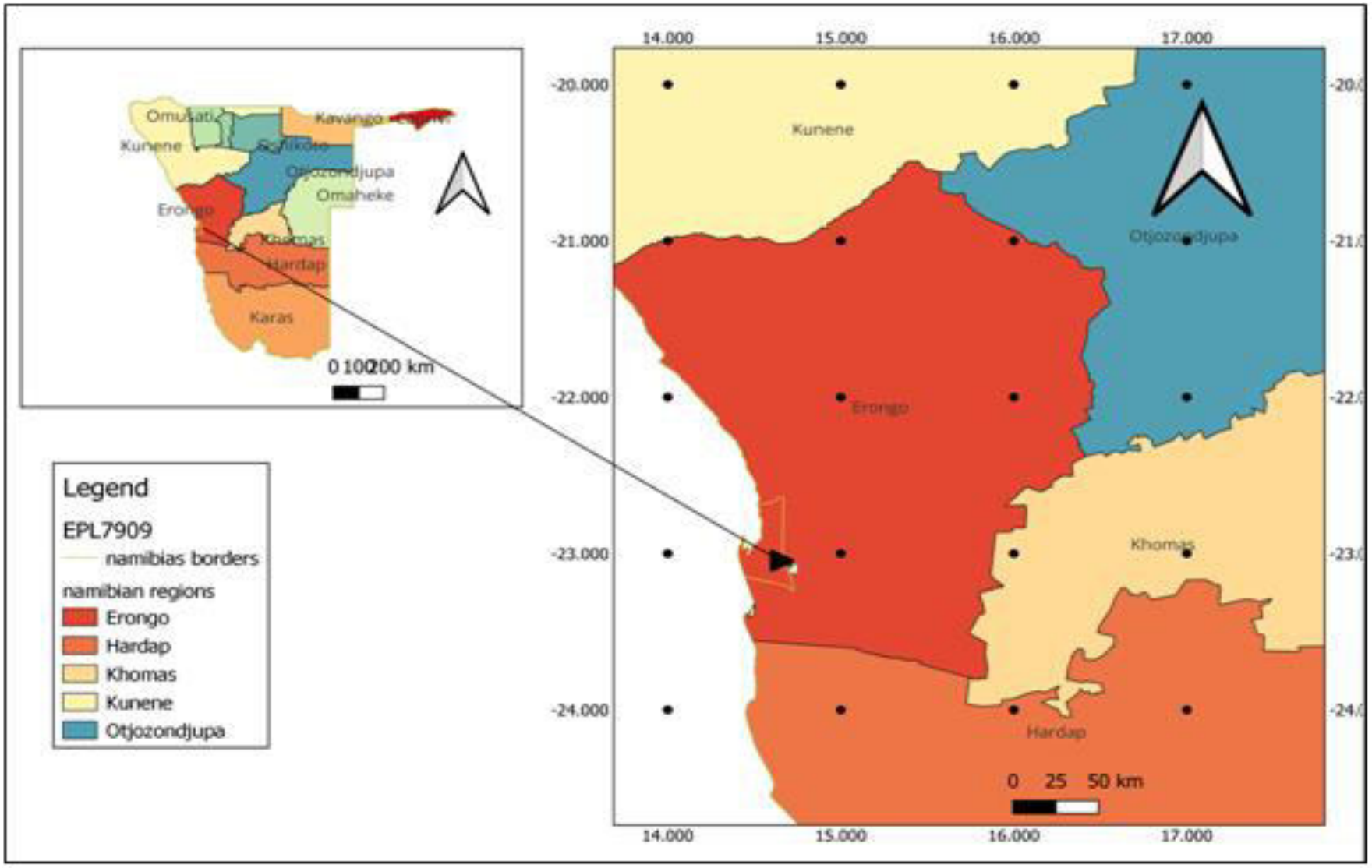


Figure 1: The location of the project area (EPL 7909) in Erongo Region.

1.2. Project Description

The planned exploration program is based on the expected geological conditions for the concerned license area. For the prospecting of industrial minerals, nuclear fuels, base metals, rare earth metals and dimension stone on the target EPL 7909, the following exploration activities are envisioned:

1.2.1. Setting-up a work area on EPL7909

A work area will be established within the EPL covering and area of 1HA to accommodate domestic water tank, containerized offices, equipment storage, sample preparation, fuel storage tank, toilet and kitchen.

1.2.2. Planned Exploration activities for industrial minerals, nuclear fuels, base and rare earth metals

1.2.2.1. Desk Study

The exploration program will commence with a review of existing geological maps, existing geological reports, analysis of existing geophysical data (such as electromagnetic and radiometric data from the geological Survey of Namibia, GSN), and any other relevant existing data and information from the project area. Based on this desktop review, a refined exploration program for subsequent investigation will be formulated.

1.2.2.2. Non-invasive exploration

Non-invasive exploration will be conducted through geophysical surveying and geological mapping followed by a holistic analysis of such data. Once the information gathered through these processes have been processed, analyzed and evaluated, target areas will be selected for invasive exploration such as soil and sediment sampling, trenching and drilling.

The main geophysical techniques to be used will include a combination of:

- Airborne magnetic survey. The airborne magnetic data can be of importance in geophysical mapping when searching for suitable stratigraphy hosting base, rare and industrial minerals. The Proponent intends to make use of Unmanned Aerial Vehicles fitted with appropriate sensors to conduct the geophysical surveys as and when required.
- High-resolution drone radiometric survey at between 50m and 100m line spacing and 15 to 25m terrain clearance, and subsequent mapping to complement the existing 200m spaced fixed wing survey of the Geological Survey of Namibia.

- Localised information will be generated in selected areas using Natural Source Audio Magneto-Tellurics (NSAMT) technique and detailed geological mapping. NSAMT has the advantages of not needing a transmitter, good depth of penetration as well as being able to pick up resistive and conductive targets.

1.2.2.3. Invasive exploration

During geological mapping, soil and stream sediment sampling as well as rock chirp sampling will be carried out. All ground geophysical surveys will not require land clearing since the project area has very minimal vegetation cover. As a result, cables and equipment can be laid down easily without interfering with vegetation. The geophysical targets will be drilled using systematic Reverse Circulation (RC) drilling, followed by diamond tails (diamond core drilling) coupled with down-the-hole spectral logging, informed by geophysical and geological data from the non-invasive exploration phase. Water will be required to fill sumps for diamond drilling and will be supplied using a bowser tank mounted on wheels and towed by a truck. A sample for every one (1) meter of RC drilling will be captured and stored at a dedicated sample storage place onsite. Rock core samples from selected zones where mineralization is intercepted will also be taken and subsequently sent to an accredited laboratory for geochemical analysis for the targeted metals. Additionally, transverse trenching will be executed perpendicular to the strikes of mineralized zones to evaluate and assess the possible thickness and longitudinal strike of the potential ore bodies. If the results from the above exploration efforts are positive, a target is identified to extract a bulk sample of the material to be mined. The bulk sample will be approximately 40 to 80 tonnes. The bulk sample will be subjected to metallurgical tests at existing Uranium mines in Namibia or South Africa. No processing plant will be constructed onsite at this stage for the project.

- Data processing and analysis

This is a non-invasive activity and based on all the data collected from the preceding techniques, and if results are positive, a 2D and 3D model will be developed for selected zones within the license area, and subsequently, resource estimates will be derived.

1.2.3. Planned Exploration activities for dimension stone

The exploration method for dimension stone is anchored or directed by the relevant properties required of a successful dimension stone. According to (Motloung, 2008) The aesthetics of a stone is the intrinsic factor on which depends its use as exploration material with decorative functions. While it may be strongly subjective, aesthetics can be used for the technical evaluation of a dimension stone because it is the result of the conjoined perception of a set of criteria, namely the colour, the texture, and the presence or absence of discontinuities, (Carvalho, 2008).

In terms of appearance, it is important that the colour should be as uniform as possible across the entire deposit. If a stone is classified as a one-coloured type, stripes, inclusions, or veins

of a differing colour are not accepted in that stone by the market, while if the stone is classified as a multicoloured type, an appropriate variation of the colours is required, even to the extent of the inclusion of "defects" mentioned above. However, the colour and pattern of the stone must be homogeneous across the deposit that the market can identify different blocks as being one and the same product. The soundness of a deposit is defined by the use of the stone and by the demands of the processing industry, so that for example blocks for exploration application which are sawn by gangsaws are typically required to have dimensions of 240-330cm x 120-190cm x 70-180cm, requiring that the deposit should have a minimum spacing of fracturing of at least 2 to 3m. It thus the homogeneity of a dimension stone deposit in terms of colour, texture and discontinuities that is particularly relevant during geological surveys as it is the base for establishing the limits of a dimension stone deposit (Carvalho, 2008), and Carvalho et al have proposed the following decision criteria on exploration for dimension stone:

Table 2: Decision criteria on the exploration of dimension stone.

Dimensioning	Homogeneity	Fracturing
Thickness of productive units (sedimentary beds, metamorphic facies etc). Volume of the deposit. Spatial Disposition	Colour Texture Discontinuities	Preferential directions Frequency Density Intensity Type and morphology

When the target material has passed all the parameters, this is followed by a test cut of a block which is polished and tested on the market.

1.3. Motivation for the Project

Namibia produces a wide variety of industrial minerals including marbles, granites and fluorspars but all these only contribute a small part of overall mining input. For decades, Namibia has been an exporter of marble and granite, uranium, diamonds and manganese just to mention a few. Globally many other industrial minerals demand has increased tremendously, and this offers a developmental opportunity for the Namibian Mining sector.
The benefits of conducting comprehensive exploration activities are among others:

- Avoid unwarranted waste generation since no excavation onsite will be done without confirmatory quality tests.
- Employment creation and thus improve the well-being of the local people.
- Upgrading of roads and water infrastructure in the project area will benefit the local people.

- The exploration exercise may potentially lead to discovery of other mineral resources which would otherwise not be known to occur in the project area.
- Transfer of technology, knowledge and skills during the exploration.

Employment preference will be afforded to previously disadvantaged Namibians.

1.4. The Proponent of the Proposed Project

The proposed project is being undertaken by a Namibian company, 100 % owned by previously disadvantaged Namibians. The ownership structure is as follows:

Table 3: The Project Proponent's details.

Proponent	Tumas Granite CC
Country of Registration & Registration Number	Namibia CC / / 2004 / 0308
Fax number	NONE
Contact number - Proponent	+264 811 283520
Postal Address	P. O. Box 20244 Windhoek, Namibia.

1.5. The Consultant

Outrun Consultants CC is a Namibian privately owned consulting company developing various projects in Southern Africa Development Community (SADC) countries. Our core services are:

- Environmental Impact Assessment,
- Strategic Environmental Assessment,
- Environmental Investigations,
- Research and Training,
- Feasibility Studies,
- Agronomy, and
- Monitoring and Evaluation of Development projects.

Outrun Consultants draw its experts from regional and international universities such as University of Zimbabwe (Zimbabwe), National University of Science and Technology (Namibia) and University of Namibia (Namibia). Outrun declares that we have no interests in this project and are independent and will act as such during the EIA process as required by the EIA regulations. The key team members carrying out this EIA are presented in Table 3 below:

Table 4: Outrun Team of Experts and the Roles and Responsibilities in the ESIA Study.

ORGANIZATION	**AREA OF RESPONSIBILITY / FIELD OF EXPERTISE**	**TEAM MEMBERS**
OUTRUN Consultants	Project management EIA coordination	Josiah T. Mukutiri
OUTRUN Consultants	EIA process	Josiah T. Mukutiri
OUTRUN Consultants	Literature review / Desk study	Josiah T. Mukutiri Emmerencia Montzinger
OUTRUN Consultants	Legislation & Policy Review	Josiah T. Mukutiri

1.6. Process and Methodology

Given that proposed project development triggers listed/ prescribed activities under the Environmental Management Act No of (2007) and the Environmental Assessment Regulations of 2012, the process started with the appointment of the consulting company as presented above. The Consultant conducted the ESIA study as required, and this chapter describes the EIA process followed during the study. The EIA study was guided by the Namibian Environmental Impact Assessment Policy of 1994 and the Namibian Environmental Management Act of 2007. Various methodologies were implemented to fulfill the requirements of each step in the EIA / ESIA process list as shown below.

1.6.1. The Environmental and Social Impact Assessment (ESIA) Process

The ESIA study was conducted as follows:

- Preliminary Activities setting terms of reference for the ESIA, selecting consultant (agent who would prepare the ESIA) to do the ESIA,
- Literature review of all relevant information,
- Field work to capture the baseline situation. This included bio-physical environment and socio-economic conditions.
- An analysis of the potential environmental impacts. This included impact prediction and significance assessment,
- Public participation and finally,
- The preparation of an environmental management plan for the project.

The description of the ESIA process phases and stages mentioned above are provided under the following subheadings. It should be noted that the description is only a bird's view of the

various phases followed by the assumptions and limitations derived from study of situation and discussions with the Proponent.

1.6.2. Clarification of the Terms of Reference and Levelling of Expectations

Leveling of expectations – an opening meeting was held between the consultancy team and the Proponent. The purpose of the meeting was to clarify the methodology, communication process between the Consultants and the Proponent, time frame and expected outcomes of the EIA study and establishing a common understanding of the TOR:

- Identify and describe legal and policy instruments relevant to the proposed project.
- Identifying existing infrastructure and services available in the project area.
- Identify existing environmental (both bio-physical and socio-economic) conditions of the area to determine their environmental sensitivity.
- Inform Interested and Affected Parties (I&APs) and relevant authorities of the project details and invite them to participate in the consultation process.
- Identify potential environmental and social impacts of the proposed project and assess the significance of the identified impacts.
- Compile an Environmental Scoping Report in line with the requirements of the Environmental Policy.
- Describe management and mitigation measures in an Environmental & Social Management Plan (ESMP) to minimize and/or mitigate potentially negative impacts.
- Share the draft ESR AND ESMP reports with registered IAPs for commenting over a period of 2 weeks.
- Incorporate and / or moderate IAPs comments and finalise the reports for submission.
- Submit the final ESR and ESMP reports to the competent authority and the Environmental Commissioner.

Various related documents were reviewed to gather information on the potential impacts, the alternatives, how to mitigate the impacts, decommissioning and rehabilitation plan. The literature included maps, publications, and reports on topography, climate, land use, and socio-economic setup of the project area where the project site is located. The literature review helped in undertaking components and areas that would deserve attention during field assessment. The literature review which was mainly based on the desk study method included the following:

- Information search from internet, journals, books and stakeholders

Examples of similar projects, i.e., nuclear fuels and dimension stone exploration and quarrying projects were reviewed including their merits and demerits.

- Analysis of the potential environmental impacts of the project activities from typical data and research

The three major environmental compartments which are land, air and water were chosen to be observed and discussed in detail. These environmental features had been chosen because they are the main receiving environmental compartments that should be considered before implementing the project. Environmental data was analyzed to determine potential environmental impacts of the project activities. The potential impacts were ranked for impact significance as presented later in this report.

- Field Survey

Field surveys were carried out to verify some facts obtained from the literature review. A more informed assessment was however the main objective of the field studies. This was done to confirm the condition of the area in terms of climate, soils, land use, topography and socio-economic set up of the area. It also involved surveys to identify the different environmental components and their state to determine the most likely impacts.

- Stakeholder Engagement

A wide range of key stakeholders were invited to participate and express their views through various media communication. The consultations were done mainly to get a view of the affected parties as well as how they think the project should be carried out for minimum impacts on human health, environment, tourism sector and the well-being of the people. Issues which were highlighted by stakeholders were incorporated into the EIA process, the project exploration programme and the Proponent has committed the same during project implementation.

- Identification and analysis of impacts in terms of magnitude and significance

Mineral exploration projects have both potential positive and negative impacts on the environment. Impacts will depend on the sensitivity of the environment and the stress already imposed on it. To accurately predict the various impacts caused by the above mentioned, the ecological and socio-economic impacts were delineated. Potential environmental impacts

were identified, and an analysis criterion shown in the chapter on impact prediction and analysis was used to rank the impacts.

- Recommended mitigation measures for identified impacts

Mitigation measures were developed based on practical measures supported by research and scientific evidence. Extensive literature review of reputable publications and journals helped the formulation of mitigation measures.

- Analysis of alternatives of the project – location, routes, technological, economic and environmental alternatives were considered.

The analysis of alternatives was done to ensure that resources were used efficiently and that decisions were environmentally sound.

- Development of an Environmental & Social Management Plan

An Environmental & Social Management Plan (ESMP) will be prepared to give a guideline base to the project Proponent on how the identified impacts could be mitigated and managed. The Plan will be presented in a tabular format indicating the impact, indicator, monitoring frequency and the responsible agent. When all the important information is derived from the impacts' prediction and analysis section, all the important aspects will be noted down and responsibilities assigned to monitor the different aspects.

- Preparation of the Environmental Scoping Report (ESR) and the Environmental and Social Management Plan (ESMP).

The completion of the various tasks assigned to the team members during the environmental scoping study gave rise to separate individual reports which were collated to give this ESR. The ESIA process followed is provided under the flow chart shown in Figure 2.

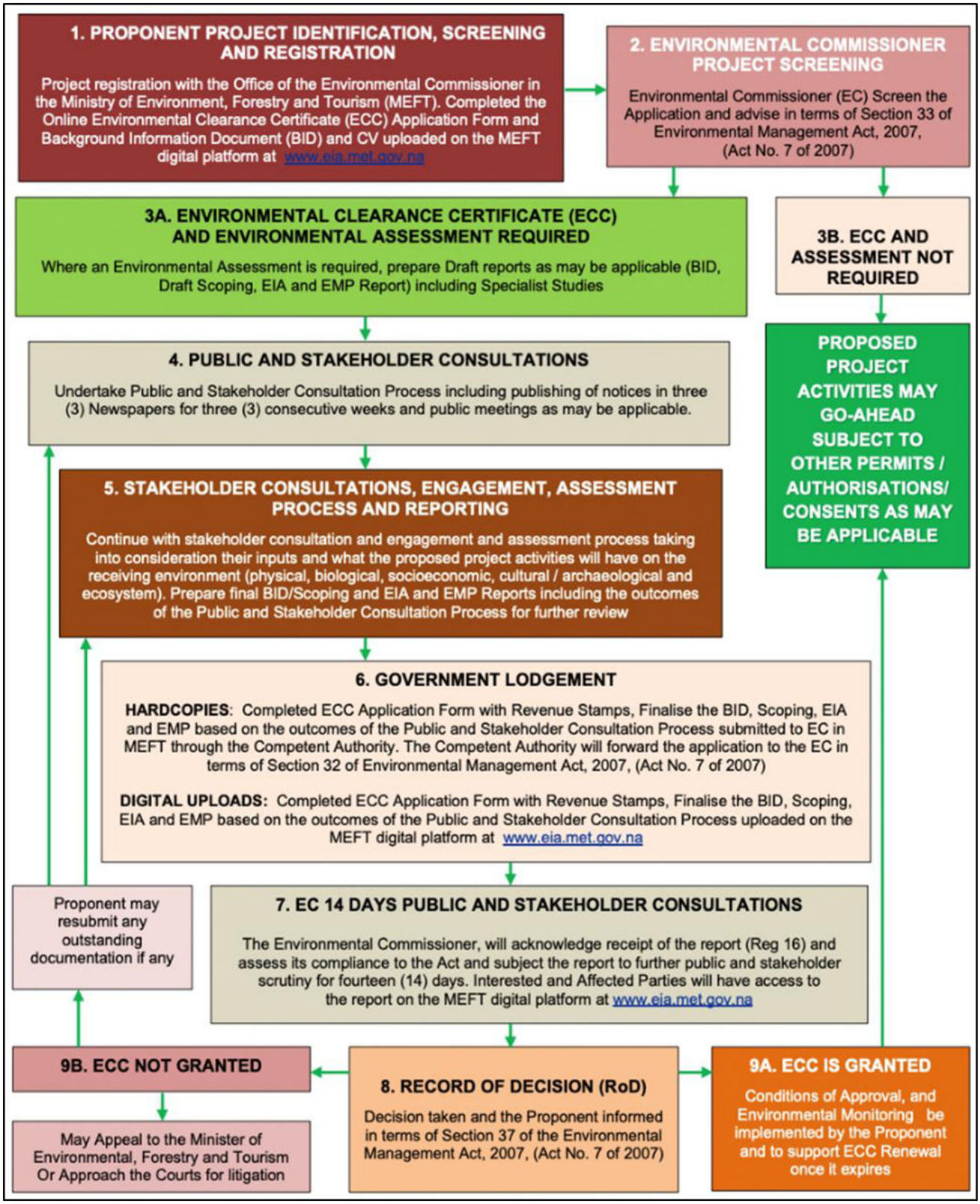


Figure 2: The ESIA Process flow.

2. LEGISLATIVE AND POLICY FRAMEWORK REVIEW

2.1. Proposed Project Authorization Requirements

The Environmental Management Act, No. 7 of 2007 stipulates that an environmental clearance certificate is required to undertake Listed Activities under the act, and its supporting regulations of 2012. Listed activities triggered by the proposed project in accordance with the Environmental Management Act, No. 7 of 2007 and regulations are follows under the Water Resources Development part of the EIA Regulations:

- The exploration 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.
- 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.

2.2. Overview of Legislation

This Section is aimed at presenting a concise description of the policy and legal context within which the mineral exploration project is proposed including an identification of all legal instruments, policies and guidelines that are applicable to this activity and are to be considered in the assessment process. Some of the pertinent environmental legislation that has bearing on mineral exploration is presented in Table 2 which describes the linkage between project activities and relevance of the various legal and policy instruments. The legislation outlined in this document is for the local (institutional), regional, national and international perspectives.

2.3. International treaties and protocols

The following international treaties and protocols have been ratified by the Namibian Government:

- Convention on International Trade and Endangered Species of Wild Fauna and Flora (CITES) (1973).
- Vienna Convention for the Protection of the Ozone Layer (1985).
- Montreal Protocol on Substances that Deplete the Ozone Layer (1987).
- Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal (1989).
- Convention on Biological Diversity (1992).
- United Nations Framework Convention on Climate Change (1992).
- Kyoto Protocol on the Framework Convention on Climate Change (1998).

- World Heritage Convention (1972).
- Convention to Combat Desertification (1994).
- Stockholm Convention on Persistent Organic Pollutants (2001)

Table 5: National Legal and Policy Instruments Relevant to the proposed mineral exploration activities on EPL 7909

Theme	Legislation Instrument	Relevance Provisions	Relevance to Project
The Constitution	Namibian Constitution First Amendment Act 34 of 1998.	"The State shall actively promote and maintain the welfare of the people by adopting policies that are aimed at maintaining ecosystems, essential ecological processes and the biological diversity of Namibia. It further promotes the sustainable utilisation of living natural resources basis for the benefit of all Namibians, both present and future." (Article 95(l)).	Ecological sustainability concepts within the constitution should guide all projects. Protect the environment and ensure citizens enjoy their right to a safe environment. Mineral exploration and mining are known to be very destructive to the environment and to comply with the Namibian Constitution, it is important for the Proponent to embrace environmental principles in its policies and management throughout the project life cycle stages to comply.
Climate Change	National Policy on Climate Change for Namibia (2011)	The National Policy on Climate Change supports constitutional obligations of the Government of the Republic of Namibia, namely for "the state to promote the welfare of its people and protection of Namibia's environment for both present and future generation." The goal of the National Policy on Climate Change is to contribute to the attainment of sustainable development in line with Namibia's Vision 2030 through strengthening of national capacities to reduce climate change risk and build resilience for any climate change shocks.	The project by virtue of being an exploration project making use of water during the various activities and interacting with ground water resources needs, it is paramount to recognize the stress on water resources and do everything necessary to preserve, minimize unwarranted loss, prevent any form of pollution and contribute towards sustainable development.

Theme	Legislation Instrument	Relevance Provisions	Relevance to Project
		The policy reckons that Namibia has limited capacity to adapt to climate change impacts. The policy projected that Namibia would become drier with more variability in rainfall and developed strategies and action plan to cope with adverse climate change impacts, (Namibia, 2010).	
Environment	Environmental Assessment Policy of Namibia 1994.	The policy narrates guidelines to environmental management its principles as well as the EIA process to be followed for listed projects that requires environmental clearance.	The project implementation should be in compliance with the requirements of the policy starting with the guidelines for EIA for which this is the process underway. As one of the long term key objectives, protection of resources including water should be embraced in the Proponent modus operandi.
	Environmental Management Act, (Act No. 7 of 2007)	The Act gives general principles for the management of the environment and natural resources. Requires that projects with significant environmental impact are subjected to an environmental assessment process (Section 27). Requires for adequate public participation during the environmental assessment process for interested and affected parties to voice their opinions about a project (Section 2(b-c)).	The EMA and its regulations should inform and guide this EIA / ESIA process.

Theme	Legislation Instrument	Relevance Provisions	Relevance to Project
	EIA Regulations Government Notice (GN) 57/2007 (Government Gazette (GG) 3812).	According to Section 5(4) a person may not discard waste as defined in Section 5(1)(b) in any way other than at a disposal site declared by the Minister of Environment and Tourism or in a manner prescribed by the Minister. Details principles which guide the EIA process. Details requirements for public consultation within a given environmental assessment process (GN No 30 Section 21). Section 3 (2) (e) states that "assessments must be undertaken for activities which may have a significant effect on the environment or the use of natural resources". Details the requirements for what should be included in a Scoping Report (GN No 30 S8) an EIA report (GN No 30 S15).	
Vegetation	Forestry Act 13 of 2005 & Forestry Regulations (GN 170 of 2015.	Section 10 (1) set out the aim of the forest management as to: The purpose for which forest resources are managed and developed, including the planting of trees where necessary, in Namibia is to conserve soil	The clearing of vegetation is prohibited (subject to a permit) 100m either side of a river. Certain vegetation species occurring in the area are protected under this Act and require a permit from the Directorate of Forestry for removal.

Theme	Legislation Instrument	Relevance Provisions	Relevance to Project
		and water resources, maintain biological diversity and to use forest produce in a way which is compatible with the forest's primary role as the protector and enhancer of the natural environment. Section 22. (1) (Protection of Natural vegetation) 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 - Republic of Namibia 20 Annotated Statutes Forest Act 12 of 2001 (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 metres of a river, stream or watercourse. (2) A person who wishes to obtain a licence to cut and remove the vegetation referred to in subsection (1) shall, in the prescribed form and manner, apply for the licence to a licensing officer who has been	

Theme	Legislation Instrument	Relevance Provisions	Relevance to Project
		designated or appointed for the area where the protected area is situated.	
Health and Safety	Labour Act 11 of 2007.	Empowers the minister responsible for labour to publish regulations pertaining to health and safety of labourers (S135). Details requirements regarding minimum wage and working conditions (S39-47).	All contractors involved in the exploration activities for this project are required to comply with this Act and its regulations.
	Health and Safety Regulations GN 156/1997 (GG 1617)	Details various requirements regarding health and safety of labourers.	Potential nuisances (e.g. dust generation) should be considered during the exploration phase and avoided.
	Public Health Act 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."	
	Public and Environmental Health Act No. 1 of 2015	The Act serves to protect the public from nuisance and 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 and contractors should ensure compliance with the provisions of these legal instruments.

Theme	Legislation Instrument	Relevance Provisions	Relevance to Project
	Pollution Control and Waste Management Bill	The bill aims to "prevent and regulate the discharge of pollutants to the air, water and land" Of particular reference to the Project is: Section 21 "(1) Subject to sub-section (4) and section 22, no person shall cause or permit the discharge of pollutants or waste into any water or watercourse." Section 55 "(1) No person may produce, collect, transport, sort, recover, treat, store, dispose of or otherwise manage waste in a manner that results in or creates a significant risk of harm to human health or the environment."	The project activities trigger section 21 and 22 of the bill, this so because mineral exploration activities can potentially directly pollute the water sources. Exploration contractors should make it mandatory that they manage their waste in a manner that does not cause environmental threat and risk both to the surroundings and the local communities.
Water	Water Act 54 of 1956	The Water Resources Management Act 24 of 2004 is presently without regulations; therefore, the Water Act No 54 of 1956 is still in force: -Prohibits the pollution of underground and surface water bodies (S23 (1)). -Liability of clean-up costs after closure/ abandonment of an activity (S23 (2)). -Protection from surface and underground water pollution	The protection of ground and surface water resources should be a priority. The main threats will most likely be hydrocarbon spills during drilling of cores and equipment / machinery maintenance.

Theme	Legislation Instrument	Relevance Provisions	Relevance to Project
	The Water Resources Management Act No. 11 of 2013.	The aim of the Act is to provide for the management, protection, development, use and conservation of water resources; to provide for the regulation and monitoring of water services and to provide for incidental matters.	The protection (both quality and quantity/abstraction) of water resources should be a priority. Relevant permits and or agreements to abstract and use water should be applied for and obtained from the Ministry of Agriculture, Water and Land Reform's Directorate of Water Resources Management.
Soil	Soil Conservation Act 76 of 1969	The Act established to consolidate and amend the law relating to the combating and prevention of soil erosion, the conservation, improvement and manner of use of the soil and vegetation and the protection of the water sources in the Republic of Namibia. The Act give powers to the Minister in section 3 (d) the powers to gazette activities that relate to the run-off or drainage of rainwater, the withdrawal from cultivation, the protection and stabilizing of natural water courses and the establishment, maintenance and protection of artificial water courses	Duty of care must be applied to soil conservation and management measures must be implemented during the mineral exploration stages of the project.
Social and Human Environment	Labour Act 11 of 2007.	Empowers the minister responsible for labour to publish regulations pertaining to health and safety of labourers (S135). Details requirements regarding minimum wage and working conditions (S39- 47).	All employees hired to work for the proposed project should be compensated fairly in line with the labour laws of the country as required.

Theme	Legislation Instrument	Relevance Provisions	Relevance to Project
	Public Health Act 36 of 1919 Health and Safety Regulations GN 156/1997 (GG 1617)	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." Details various requirements regarding health and safety of labourers.	Provision of community labour, the input of the local communities is usually in the form of labour for the excavation, backfill and compaction of the pipeline trenches. The safety of these people is crucial particularly women, who do not have prior knowledge of handling dangerous, risk and strenuous jobs.
	Public and Environmental Health Act No. 1 of 2015	The Act serves to protect the public from nuisance and 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 public and environmental health should be preserved and remain uncompromised.	The Proponent should ensure that the project infrastructure, vehicles, equipment, and machinery are designed and operated in a way that is safe, or not injurious or dangerous to public health and that the noise and dust emissions which could be considered a nuisance remain at acceptable levels.
Heritage	National Heritage Act 27 of 2004	Section 48(1) states that "A person may apply to the (Heritage) Council for a permit to carry out works or activities in relation to a protected place or protected object" Protects and conserves cultural heritage and	Mineral exploration has a potential to pass through heritage sites, graveyards or unearth heritage resources (e.g. human remains etc.). Heritage resources discovered during excavations would require a permit from the National Heritage Council of Namibia for relocation.

Theme	Legislation Instrument	Relevance Provisions	Relevance to Project
		cultural resources with special emphasis on places and sources of National heritage including graves, artefacts and any objects older than 50 years.	
Flying of Unamanned Aerial Vehicles or Drones during Geophysical Surveying	Civil Aviation Act 6 of 2016	To consolidate the laws relating to civil aviation and civil aviation offences; to provide for the powers and functions of the Minister in relation to civil aviation; to establish the Namibia Civil Aviation Authority and to provide for its powers and functions; to establish the Air Navigation Services in the Authority; to provide for a civil aviation regulatory and control framework for maintaining, enhancing and promoting the safety and security of civil aviation for ensuring the implementation of international aviation agreements; to establish the Directorate of Aircraft Accident and Incident Investigations and to provide for its powers and functions; to provide for the establishment of Namibia Register of Aircraft and the Civil Aviation Registry. It is under the same Act that the NCAA having been established pubslished the Aviation Directive **(AD 1-2-1-6)** on the 1st May 2022 to provide the legal framework for the issuance of RPAS licences to qualifying persons and was enforced from the 1st of August 2022. This was meant to	The Proponent should ensure that relevant permits are applied for and approved to fly drones during geophysical surveying by Namibia Civil Aviation Authority (NCAA) and the MEFT.

Theme	Legislation Instrument	Relevance Provisions	Relevance to Project
		enable RPAS operators to fly safe and legally, they are required to obtain an RPAS Letter of Approval (RLA) from the Flight Operations (OPS) section of the Namibian Civil Aviation Authority (NCAA) for Visual Line of Sight (VLOS) operations. For Drones, in addition, Air Navigation Services Safety Oversight (ANSSO) CAUA Application form for flying in restricted airspace should be completed because of the location of EPL7909 being in a high risk area.	

3. PUBLIC CONSULTATION AND STAKHOLDER ENGAGEMENT

3.1. Introduction

Public and stakeholder consultation and participation form an important component of an EIA process as required by Section 21 to 24 of the EIA Regulations. The consultation process afforded the stakeholders and potential Interested and Affected Parties (I&APs) an opportunity to comment on and raise any issues relevant to the proposed development for consideration in the assessment documents (Environmental & Social Impact Assessment (ESIA) Report) and Environmental & Social Management Plan (ESMP)). The comments, issues and suggestions raised and submitted to the Environmental Consultant greatly aid and influence the planning of the proposed exploration activities in the early stages.

Furthermore, the public and stakeholder' consultation and engagement process also assists the Environmental Consultant to thoroughly identify and record potential impacts that they may have missed and determine to what extent further investigations are necessary. This process can also aid in identifying possible mitigation measures to some potential adverse impacts or to maximize the benefits of the development in the environment. The public and stakeholder consultation for this mineral exploration project has therefore been conducted in accordance with the EMA and its EIA Regulations. The consultation activities done for this development are presented under the next subsections and as per the associated Proof Public Consultation Document (Appendices).

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

The relevant and applicable national, regional and other interested members of the public were identified and registered in the list of stakeholders and I&APs. The list was updated throughout the ESIA consultation process. The completed Attendance Register and list of registered I&APs and stakeholders are provided in **Annexure 3.**

Table 6: Preidentified stakeholders.

Institution	Representative
Namib Naukluft National Park	Mr. Riaan Solomon Park Warden
Ministry of Agriculture, Water and Forestry	Ms. Amakali – Directorate of Water Resources Management
Ministry of Mines and Energy	Mining Commissioner
Tour and Safari Association of Namibia	Mureal van Rooyen

3.3. Means of Notification and Communication for Consultation

The steps taken or that guided this public consultation process are as detailed under section 21 to 24 of the EIA Regulations. The notifications and communication with I&APs and stakeholders with regards to the proposed development were facilitated through the following means and order:

- The Background Information Document (BID): A Summary of the proposed Project and ESIA Process

A non-technical summary or Background Information Document (BID) containing brief information about the proposed project was compiled and shared with registered I&APs – **the BID was shared as an accompanying document, (Annexure 1)**.

- Public Notification (Newspaper Advertisements) and Communications

The notice of the ESIA Study for the proposed project activities were published in the following newspapers while notices were posted at various points close to the project area, as presented below.

Table 7: Environmental scoping announcements published.

Communication channel used	Date (s)
The Villager	29 March 2024
The Villager	03 April 2024
The Windhoek Observer	28 March 2024
The Windhoek Observer	03 April 2024
Site Notices	**Place**
1	The Picnic Place

2	Nkandla Guest Farm Sign Post
3	Along D1983 Road close to Gababeb

3.3.1. Public and Stakeholders' Consultation Meetings

- Consultation Meetings

The newspaper adverts briefly explained the proposed mineral exploration activities, its locality, consultation meeting details and public invitation to register as I&APs as well as submit their comments/concerns to the Environmental Assessment Practitioner using the provided contact details. Minutes that narrate the proceedings of the public meeting held onsite and the preceding email correspondences with IA&Ps are contained in the *"Proof of Public Consultation Document",* **Annexure 2.**

3.3.2. Feedback from Stakeholders and Interested & Affected Parties

Various issues were raised by I&APs during the consultations. These issues have been recorded and form the basis of the ESR and ESMP documents. The summary of key issues and how they were managed is presented below:

Table 8: Summary of issues raised during the stakeholders' consultations and responses.

Issues / Concerns Raised by Stakeholders	Responses
Once the report is compiled, we would like to see the final version.	The final version of the report was submitted to MEFT and will be accessible to all stakeholders for comments on the MEFT Web Portal.
May you share the appendices of the report and the Consultant's CV?	All appendices are attached at the end of the report, i.e. BID, Consultant's CV and the Proof of Public Consultation Document containing adverts and attendance registers.
We would like to be notified when the final report is uploaded on the portal to enable us to share our final comments?	The final reports will be portal on the Ministry of Environment, Forestry and Tourism web portal for stakeholders' comments. Notifications will be sent out.
Title should reflect that the project is taking place in the NNNP.	The title was amended as such.
The exploration target area lies in the airline route for planes landing in Walvis Bay.	Considered in the study with respect to aesthetics, visual impacts and use of drones to avoid potential collisions which put both passengers and crew at risk. Potential impacts on wildlife and birds were also considered.
In the same vein the C28 road cuts through a portion of the EPL7909, a prime tourist route heading to or from Soussusvlei.	As above.
One of the target minerals is granite or dimension stone and is not recommended in a tourism area given that it is difficult to rehabilitate a granite mine as seen in Karibib area.	Visual impact with respect to field of view from C28 road and proximity will be considered before doing test cuts.
The project should follow and comply with the rules and recommendations of the National Policy on Prospecting and Mining in Protected areas.	Planned activities will be done in compliance with the Policy on Prospecting and Mining in Protected areas.
There are no terms of reference for the assessments in the report.	Terms of Reference are provided under section 1.7.1.

It is not clear if this is the final report to be submitted to MEFT.	The EIA process is very clear that the draft reports are shared with IAPs for comments over a period of 14 days. Thereafter comments are incorporated to generate the final report which will be submitted to MEFT.
Bulk sampling should be well defined to ensure the approved EIA/EMP does not allow small-scale mining being interpreted as bulk sampling.	A maximum of 80 tonnes will be sampled over the exploration period. The samples will be taken to other service providers to do metallurgical assays. No processing plant will be built on EPL7909.
Sediment or soil sampling is not non-invasive.	Affirmative, soil and sediment sampling are not non-invasive
Geophysical survey will require clearing of lines to enable laying down of geophysical cables and equipment – Invasive, needs the impact to be quantified and assessed based sensitivities.	There is no vegetation cover that requires clearing to pave way for the laying down of geophysical cables. Hence, this will be non-invasive.
The assessment of impacts is very qualitative.	Impact assessment methodologies are quite diverse, and the EMA Act does not prescribe assessment methods. The quantitative method is also subjective, and the scoring depends on the Assesor.
Explain how these activities will be carried out without creation of new roads?	There are enough access roads and tracks on this EPL from historical activities conducted in the past. At this stage no new roads are envisaged.
Explain which electrical equipment will be used during the exploration activities?	Sample preparation equipment, office equipment and kitchen equipment.
Lack of reference of EPL in the park.	It is acknowledged that the EPL is in the NNNP and further assessments were done with respect to tourism sensitivity and the NNNP Management Plan
No clear assessment methodology followed linking baseline with planned activities.	The assessment methodology is clear and straight forward.

No Archaeology specialist study conducted.	The archaeological specialist study was done and submitted to National Heritage Council (NHC) for approval. The application is annexed at the end of this report.
No biodiversity habitat sensitivities assessed.	This is covered under Description of affected Environment
Mention is made of campsite in the report but also states that workers will stay in the towns.	No workers will be staying on the EPL, but there will be an office, equipment storage and sample preparation area.
No potential visual assessment.	The planned activities are short term with temporary structures and visual impact assessment will be done for planned permanent infrastructure.
Reference to the Park Management Plan is missing.	The Park Management Plan is one of the guiding documents referred to guide the assessment.
Significance without mitigation is provided but not with mitigation.	Both scenarios are presented under Table 13 and 14 of the report.
No assessment linked to airborne survey.	The assessment for drone surveys is covered under section 4.2.5. of this report.
Extraction of bulk sample and setting up a processing plant is regarded as mining and exploration. It should be taken out of the application.	No processing plant will be setup, but the bulk sample will be exported to other service providers for metallurgical tests.
Permits to access the parks should be handled by the Ministry of Environment, Forestry & Tourism (MEFT).	In compliance with the law and policy, park entry permits will be applied for all workers and subcontractors.
What does the different methods of exploration activities entail for the exploration of dimension stone, nuclear fuels, base and rare metals and industrial minerals?	The exploration method for dimension stone is different from the other target minerals and potential impacts were identified and assessed differently.

3.4. Review of Draft Environmental Scoping Report and Management Plan

The draft ESR was shared with Proponent to endorse proposed mitigation measures before it was publicized to stakeholders for commenting. The stakeholders were given 14 days from the day of the first publication to comment on the draft ESR.

3.5. Public Participation: Way Forward

Comments on the reports were incorporated to generate the final reports before submission to the Competent Authority: MEFT and the decision will be published.

4. ESIA SCOPING METHODOLOGY

4.1. Methodology

The EIA Regulations require a description of the significance of any significant effects, including cumulative effects that may occur because of the undertaking of the activity. To determine significance, each of the potential impacts identified have been subjected to the following questions displayed graphically (steps 1 and 2 - Figure 2) and in tabular form (Table 2) below. These questions form the methodology for assessing the significance of the effects or impacts identified through this EIA process:

1. The first step is to screen out (set aside) all impacts which do not fall within the scope of this project and responsibility of the proposed project.
2. The next step is to determine whether sufficient information exists to assess the potential impacts of those that remain. If insufficient information is available to assess (with a high degree of confidence) and recommend mitigation measures to address a given impact further investigation will be required. However, if sufficient information is available to assess (with a high degree of confidence) and recommend mitigation measures to address a given impact no further investigation will be required, and the impact will be addressed in the ESMP.
3. To fully understand the significance of each of the potential impacts, it is necessary to subject each to a range of assessment criteria. The application of these criteria, in determining the significance of potential impacts, uses a balanced combination of duration, extent, and intensity/magnitude, modified by probability, cumulative effects, and confidence.

The definitions of each of the criteria are contained in Figure 2; and finally based on the answers obtained after applying steps 1-3 a decision can be made regarding the significance of the impact based on three categories – low, medium or high (Table 13).

Does the issue fall within the scope of the project and the responsibility of the Proponent (Tumas Granite CC)

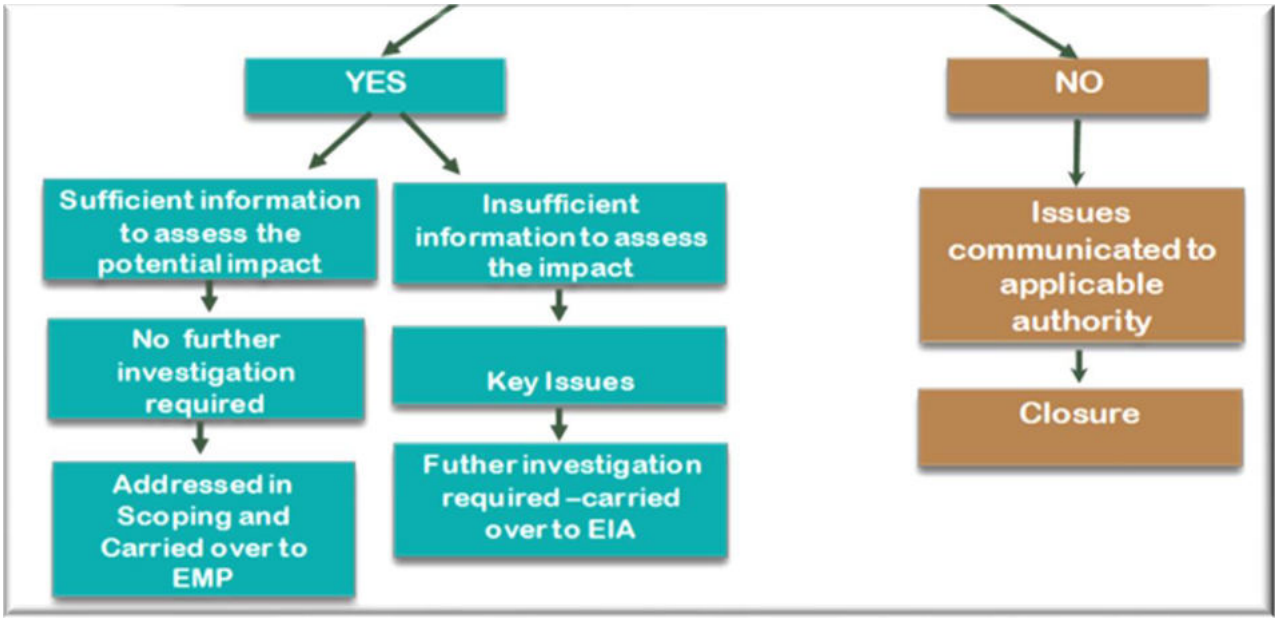


Figure 3: The screening process followed to determine key issues.

4.2. Assessment of Alternatives

4.2.1. Assessment of Alternatives

Alternatives Assessment According to the EMA EIA Regulations, alternatives must be considered during the ESIA process. The Regulations state that "an alternative, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity.

4.2.2. The "No – Go" Alternative

Given that the "No-go" option is the best option for the environment since it means maintaining the status quo in which no project is implemented. However, given the developmental need of the project, this option cannot be considered because potential positive economic benefits will be lost.

4.2.3. Routing Alternatives

The main ways routing alternatives were considered are that:

a. The main access route is via C28 road which cuts through EPL7909. The exploration contractors utilize existing roads or tracks to access the site as opposed to opening / clearing new routes.
b. The project area is near Walvis Bay and exploration team can reside in the town during the exploration period.

4.2.4. Location Alternatives

No assessment of alternative sites was done for the proposed exploration activities since this is the licenced area for the project registered by the MME as EPL7909. Therefore, no other site was considered. This aspect becomes more relevant during preparation for the mining exercise as viz a vis location of preferred mining targets and location of environmentally sensitive targets.

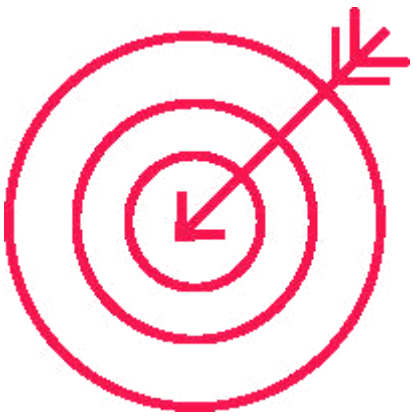
4.2.5. Technical Alternatives

The assessment of technical alternatives focused mainly on the use of Unmanned Aerial Vehicle (UAV) borne geophysical mapping as compared to aeroplanes.

In comparison with aircrafts, UAVs are much faster, precise, environmentally friendly and more cost effective:

- Fast

Drone can survey the area faster.

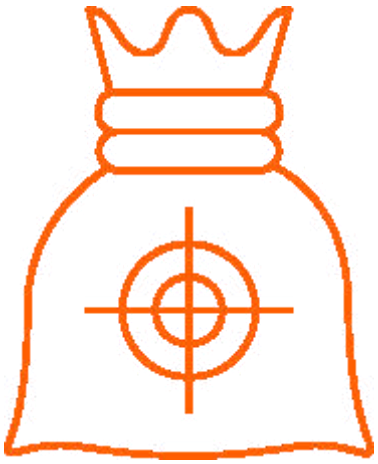


- Precise

Drone can fly lower and explore more difficult survey areas.

- Environment friendly

Drone can survey areas with significantly smaller environmental impact and without using fossil fuels.



- Cost effective

Drone surveys consume less time and fuel.

As a result, drones are more preferred to airplanes and will be used for geophysical surveys.

5. DESCRIPTION OF THE RECEIVING ENVIRONMENT AND THE NAMIB NAUKLFUT NATIONAL PARK AREA.

5.1. Baseline Studies

This chapter provides a description of the environment within which the scoping exercise was conducted. It captures the baseline social and biophysical environmental conditions, with which the proposed project will interact. This information was sourced from literature review and observations made during a site visit to the project area. Weather data was obtained from the nearest weather station, the Marble Koppie Station maintained by SASSCAL WEATHERNET (http://www.sasscalweathernet.org/). The baseline is important to detect changes that occur because of the proposed project activities in the future. The study area covers the entire footprint of EPL7909, the project components followed by a brief overview of the possible ways or way the environment features may be affected (positively or negatively) by the proposed mineral exploration activities.

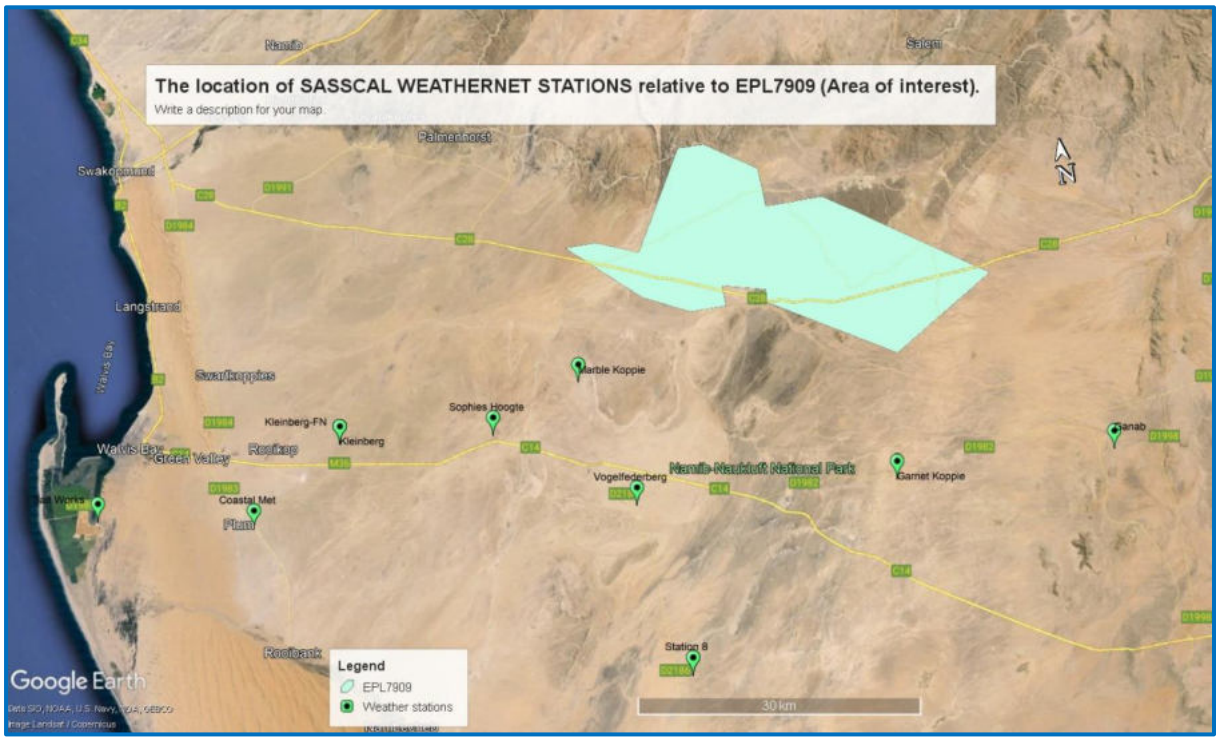


Figure 4: The location of Marble Koppie weather station used for climatic description of the project area.

5.1.1. Climate variability

- According to (John Mendelsohn, 2002), Namibia is generally considered a hot country, but the temperatures vary a good deal, during the day, from day to day, seasonally and over much longer periods. The project area is situated partly within the Namib Naukluft National Park. The climate in Naukluft Park can be unpredictable, and extreme weather events like flash floods or droughts can occur. Climate change may also be influencing the region's weather patterns, potentially leading to shifts in rainfall patterns and temperatures, (Burke, 2004).
- Overall, the area's climate is characterized by hot temperatures, low rainfall, and arid conditions, making it a challenging yet unique environment that supports a diverse range of desert-adapted flora and fauna.

5.1.2. Temperature

- The project area is characterised by a hot climate with daytime temperatures often exceeding 30°C (86°F) to as high as 38ºC during the summer months, November to April. Nights can be very cold, with temperatures dropping significantly, especially in the winter months of May to October, (John Mendelsohn, 2002).

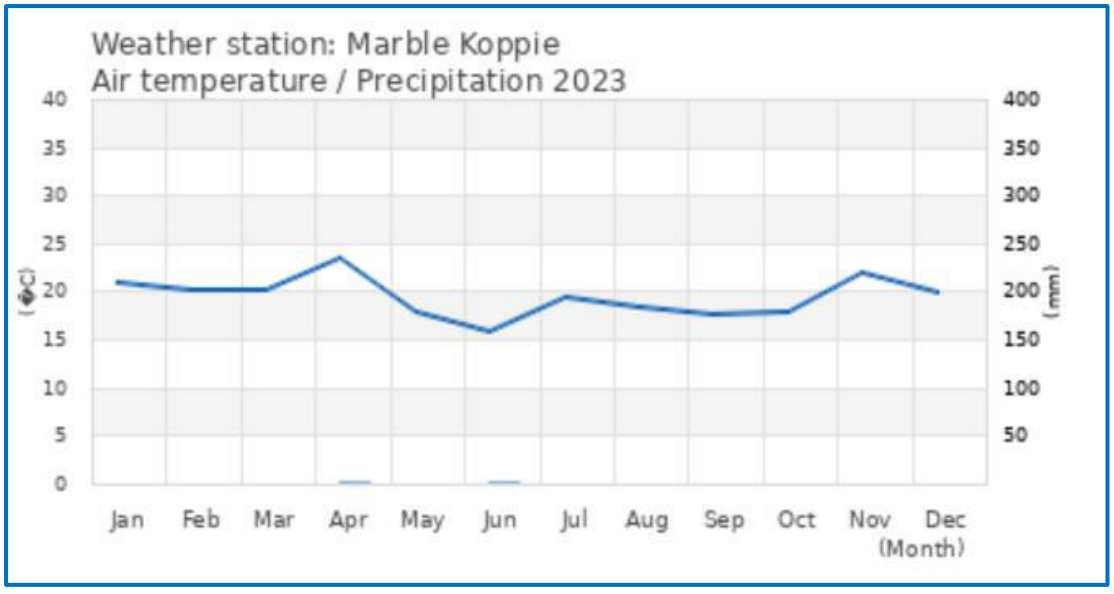


Figure 5: Air temperature and precipitation received in the project area.

5.1.3. Precipitation

- The project area receives low and erratic rainfall, with very little rainfall mostly occurring during the summer months between November and March. Rainfall amounts can vary greatly from year to year and across different areas within and around the project area.(John Mendelsohn, 2002). The area experiences very low rainfall, with an annual average rainfall of 6 to 9 mm. According to the Marble Koppie, 13.1 mm of rainfall was received in 2023.

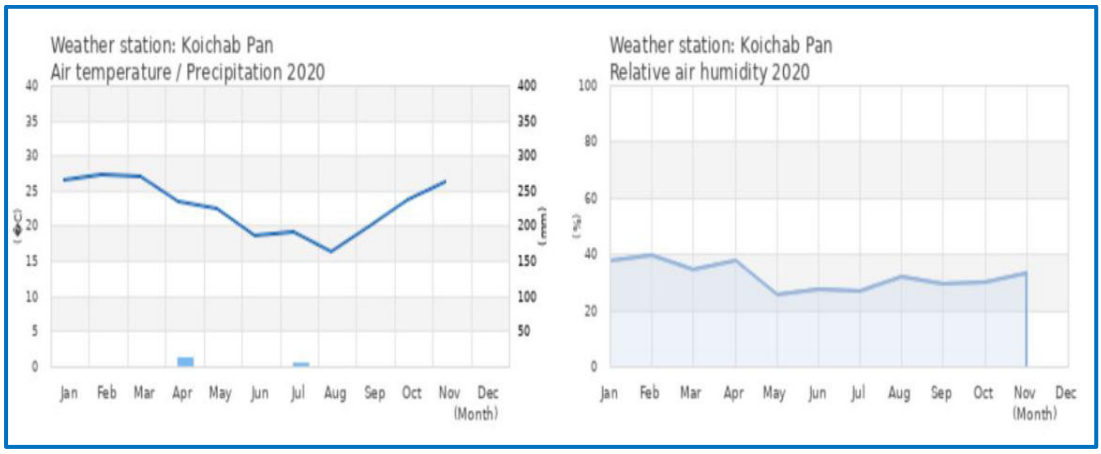


Figure 6: Temperature, precipitation and humidity characteristic of the project area, EPL7909.

5.1.4. Seasons

- Summer: Summers in the project area are typically hot, dry, and dusty. Daytime temperatures can be very high, but nighttime temperatures are relatively cooler.
- Winter: Winter months (May to August) are milder with warmer days and cooler nights and can drop to below 0°C. It is the dry season with little to no rainfall.

5.1.5. Wind and Air quality.

- Windy conditions are common in the project area, especially during the dry season.
- Strong winds can contribute to high evaporation rates and dry out the already arid landscape.

The project area is characterised by windy conditions and has a 0 % chance of being calm as portrayed by the wind roses in figure below 6. Prevailing winds blow from the

West at least 40 % of the time, 2m/s average speed but much stronger, and infrequent strong winds ranging from 8.4m/s to 16.3m/s are experienced throughout the year and mostly from the Eastern direction (inland) of the project area.

The preliminary findings of the specialist study of airborne radiation risk showed that the cumulative exposure risk of the farmers to airborne radiation from the inhalation of radio-active particulates and radon increases slightly with each scenario (i.e. with more mines), but the doses are all still well below the internationally accepted public exposure limit of 1 mSv/a. The study found that the contribution of the mines to the radiation dose of residents in the coastal towns is insignificant. Even in the town of Arandis, which is closest to the mines, the highest radiation exposure for residents is still below 0.3 mSv/a, even for Scenario 3. The potential for health risks from radiation from mining related activities is therefore very low, (SAIEA, 2010).

The air quality study showed that the major contribution to dust in the region is from natural wind erosion of the desert surface and from traffic on the gravel roads. The preliminary findings of the groundwater studies showed that there is no evidence of mine-related pollution in the groundwater of the Khan and Swakop Rivers. The groundwater study also showed that if a pollution event did occur, the downstream migration of a contamination plume would be very slow and hindered by the presence of natural barriers (bedrock) along the rivers. Therefore, the potential for exposure to additional radiation via groundwater pathways is extremely unlikely, (SAIEA, 2010).

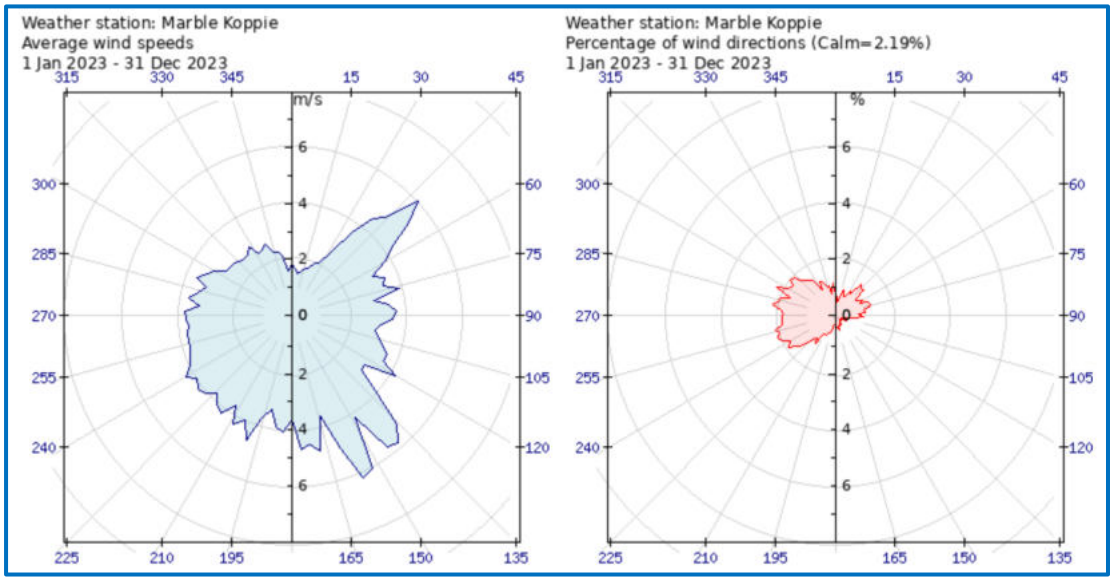


Figure 7: Average wind speeds and directions experienced in the project area.

5.1.6. Geology

The geology of the project area in Namibia is characterized by ancient rocks and diverse geological formations that provide insights into the region's geological history. The geological description of the project area follows:

5.1.7. Formation and Age of Rocks:

- The project area is part of the Naukluft Mountain Range, which consists of Precambrian rocks, some dating back over 700 million years.
- These ancient rocks include metamorphic and igneous rocks, as well as sedimentary formations that have been subjected to significant tectonic forces over time.

5.1.8. Geological Structures:

- The area exhibits various geological structures such as folds, faults, and fractures, which are a result of past tectonic activity and mountain-building processes.
- These structures contribute to the rugged and mountainous landscape of the Naukluft area, forming canyons, valleys, and steep cliffs.

5.1.8.1. Rock Types:

- The geology of the project area includes a range of rock types, including schist, gneiss, granite, quartzite, and dolomite.
- These rocks have undergone extensive geological processes like metamorphism, sedimentation, and volcanic activity, shaping the diverse geological features seen in the area.

5.1.8.2. Mineral Resources:

- The region is known for its mineral deposits, including gemstones like tourmaline, topaz, and quartz, as well as minerals like mica and feldspar.
- These mineral resources have attracted mineral exploration and mining activities in the past, contributing to the region's geological significance.

5.1.8.3. Landscape Evolution:

- The geological history has been shaped by erosion, uplift, and tectonic movements, leading to the formation of rugged peaks, and unique landforms.
- The region's geological formations provide valuable insights into the Earth's geological evolution over millions of years.

5.1.8.4. Geological Significance:

- The project area's geology is of significant interest to geologists, researchers, and nature enthusiasts due to its ancient rock formations, diverse mineral resources, and unique geological features.

The geological diversity and ancient rock formations of the project area make it a fascinating region for geological studies and exploration, offering a glimpse into the Earth's geological past and processes that have shaped the landscape over millennia.

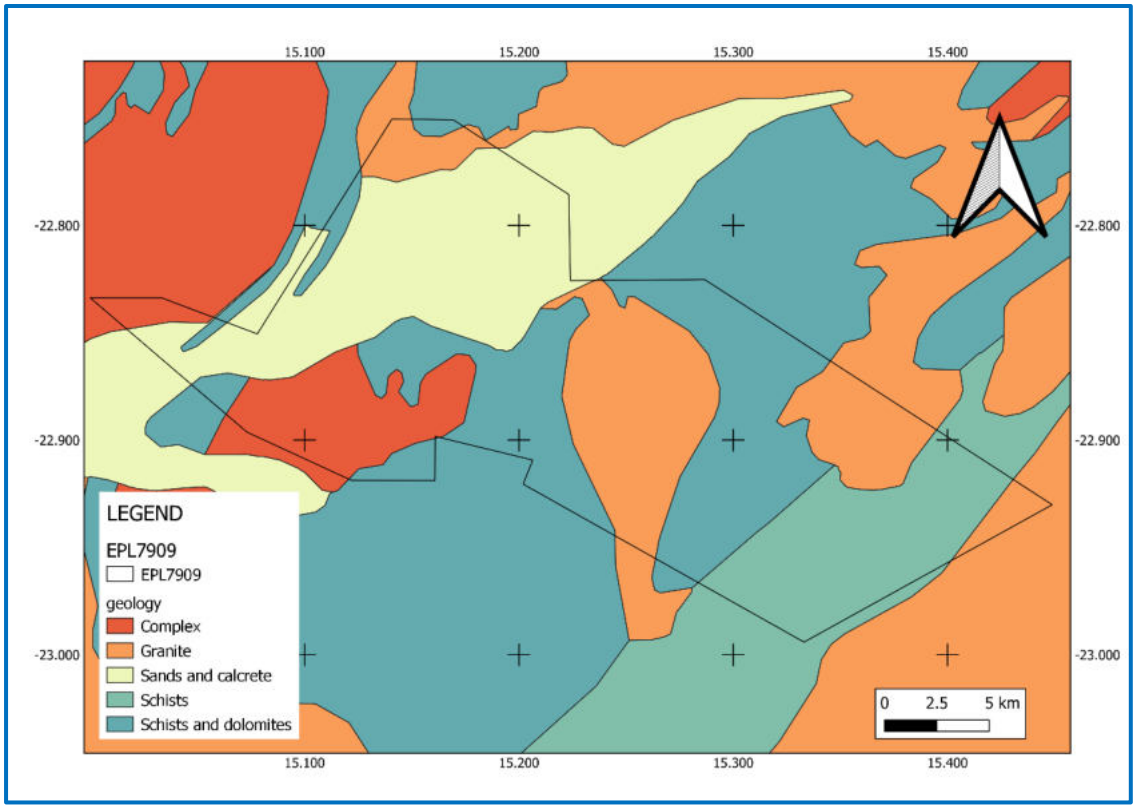


Figure 8: The geology of EPL 7909. Source: Own map.

5.1.9. Soils of the project area

The project area, EPL 7909 is predominantly characterised by alluvium, sand and gravels. Some of the areas are constituted by dune sands and regosols as shown in the soils map below. Regosols are soils in unconsolidated mineral material of some depth, excluding coarse textured materials and materials with fluvic properties, and have no diagnostic horizons other than an ochric horizon.

- Petric calcisols

Calcisols vary in depth. These are calcareous soils that overlie a hard petrocalcic horizon of C-horizon at a depth of 45 cm or less. The high clay in the ochric A-horizon tends to become compacted when dry. Fine materials are easily blown away by water and wind which result in the exposed hard calcrete at the soil surface. The petro-calcic horizon becomes extremely hard when dry, forming a barrier to coarse and medium roots. Only fine roots can penetrate between the rock spaces and take advantage of the (relative to the study area) more favourable moisture-retention properties. The establishment of crops on these soils will only be possible with costly irrigation and frequent application of nutrients such as nitrogen and phosphorus, but also micronutrients such as iron and zinc. Overally these soils are characterised by especially their A and C horizons, (http://the-eis.com/elibrary/sites/).

- Petric gypsisols

These are soils with substantial secondary accumulation of gypsum, ($CaSo_4.2H_20$). They are found in the driest parts of the arid climatic zone which is why they are labelled, “Desert Soils”,
(https://www.isric.org/sites/default/files/major_soils_of_the_world/set7/gy/gypsisol.pdf).

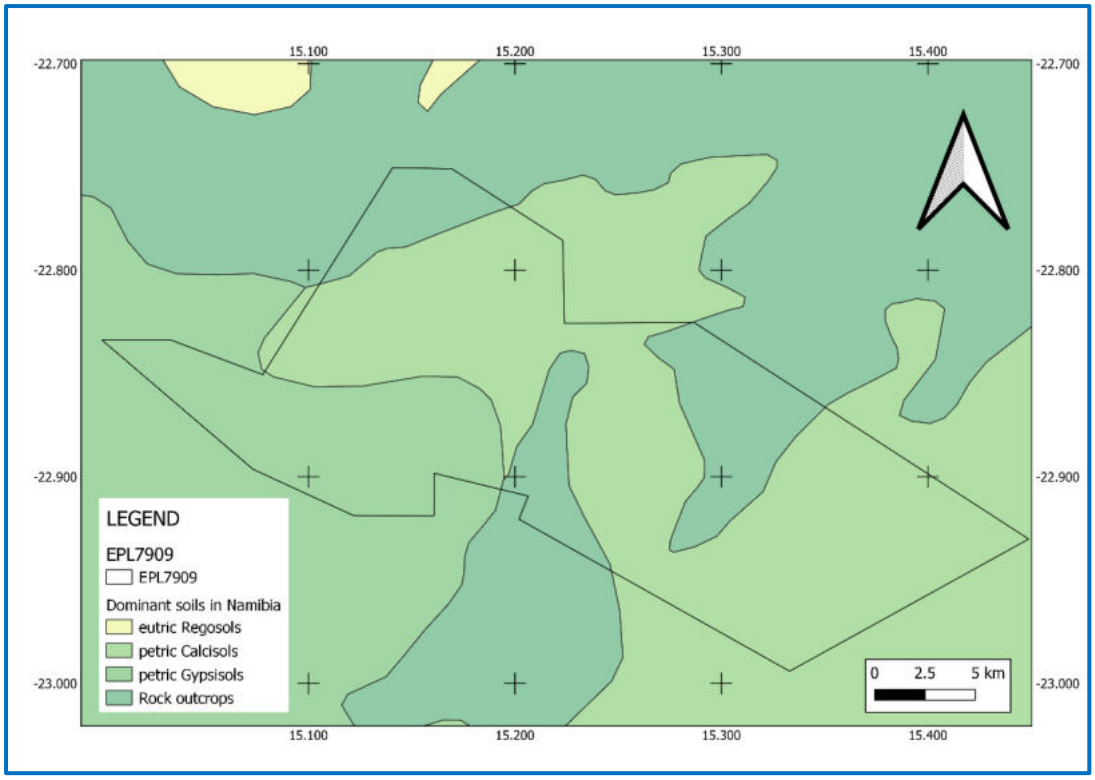


Figure 9: Dominant soil types covered by EPL 7909.

5.1.10. Noise

Noise generated in the project area primarily comes from vehicles driving on the road along the C28 and ambient noise levels can be low. No sensitive noise receptors were identified in the project area.

5.1.11. Landuse

Residents and tourists to the coastal zone define their quality of life as being enhanced by opportunities for sport, exploring the desert by vehicle, relaxing on the beach, angling or adventure activities. Tourism products in the central Namib include adventure tourism (e.g. parachuting and quad biking), business tourism (e.g. workshops and conferences), consumptive tourism (e.g. hunting and fishing) and ecotourism (excursions into the desert). There is also the use of the desert landscapes for filming of documentaries, adverts and feature films. In the context of public recreation and tourism, the main impacts likely to result from the mineral exploration activities are: visual impacts, leading to compromised natural beauty and deteriorating sense of place; and loss of access to recreation and tourism destinations. The natural beauty and ambience of the desert will be compromised by the exploration activities, because even with the best environmental management plans in place, prospecting and mining will result in visually intrusive infrastructure, dust and noise, and will scar the Namib for decades or longer. At present, the largely undisturbed desert with its dramatic landscapes, interesting biodiversity and sense of place and space attracts numerous

tourists very year. The tourism sector is of considerable importance to the Namibian economy, providing over 18,000 direct jobs (5% of total employment), and N$1,600 million pa in revenue (3.7% of GDP). The sector has seen significant growth over the past fifteen years, with tourist arrivals increasing more than threefold between 1993 and 2006 (NTB 2007). The proliferation of mining related infrastructure (e.g. powerlines, pipelines, roads and railways), added to the alienation of land for mining of areas previously used for public recreation and tourism, effectively means that mining may displace tourism if not properly managed, resulting in significant losses for the whole tourism industry. In addition to the erosion of aesthetics and sense of place, the existence of EPLs and mines, and their right to exclude locals and visitors from their areas, limits the places available for tourism and recreation.

5.1.12. More about the Project Location and the Namib Naukluft National Park

The Namib Naukluft National Park (NNNP) is one of Namibia's four (4) Coastal protected areas: the Tsau /Khaeb (Sperrgebiet) National Park in the south, Dorob National Park and the Skeleton Coast National Park. At its widest, the Naukluft area extends inland for about 180 km to the top of the escarpment. Namibia is the only continental country in the world that has its entire coastline protected as a national park.

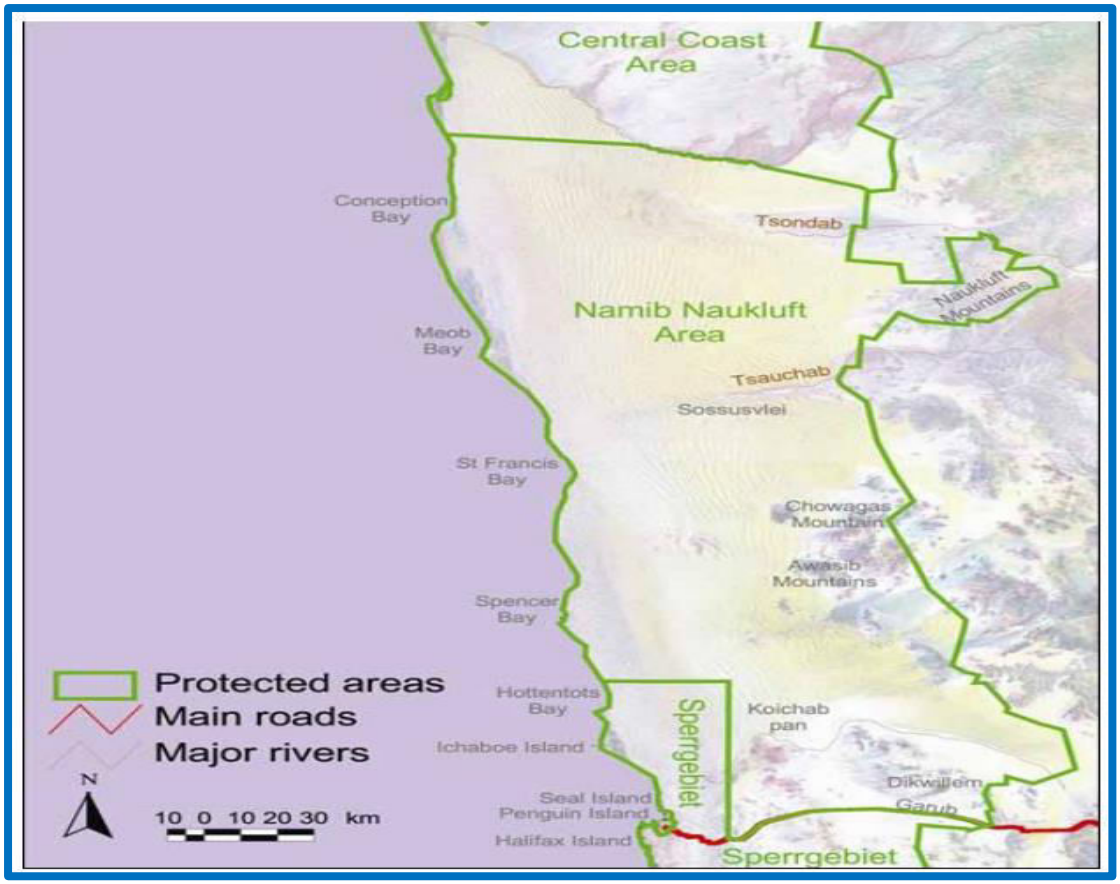


Figure 10: The geographic location of the Namib Naukluft National Park relative to the coastline, the Sperrgebiet and Skeleton Coast Parks.

- Important features of the NNNP and potential interaction with EPL7909 project area

The NNNP contains many globally significant features:

Table 9: Important features of the NNNP and potential interaction with EPL7909 project area.

NNNP Feature	Potential Interaction with EPL7909
About 280 km of coastline, mainly sandy shores, with several bays often associated with rocky outcrops or bluffs, and coastal salt flats, with Damara Terns favouring the last mentioned as breeding sites.	×
The central Namib gravel plains with inselbergs that support plains wildlife such as oryx, springbok and ostrich.	√
A continuous sand sea of dunes and sandy plains covering some 4 million ha, almost the entire area. The sand sea is presently being nominated as a World Heritage Site.	×
Three ephemeral endorheic river systems that end in pans amongst the dunes – Tsondabvlei in the north, Sossusvlei near the centre and Koichab Pan in the south.	×
The Naukluft Mountains which rise from the desert plains at 400-500 m to almost 2,000 m, forming near vertical escarpments and deeply incised valleys.	×
A vast array of dramatic landscapes and scenery, and a huge sense of wilderness, novel to most visitors and highly accessible compared to most extreme desert ecosystems.	√
This Park also contains a suite of uniquely adapted organisms to desert conditions, including endemic plants, birds, reptiles and invertebrates.	√
Sandwich Harbour specifically, and in fact the entire Park, is designated an Important Bird Area (IBA), and it also qualifies as a Key Biodiversity Area (KBA).	×
Two Important Plant Areas (IPAs) occur in the NNNP: the Naukluft and the southeastern corner incorporating the Dikwillem range, which support a rich succulent plant community.	×
The southern part of the NNNP borders on a Marine Protected Area that includes the near inshore Mercury Island, a designated IBA	×

5.1.13. Habitats

According to the Parks Management Plan for the NNNP, the NNNP has fewer habitats than the other Coastal Parks. The Park is divided into Coastal and Terrestrial categories containing three habitats and fifteen habitats respectively, (Ministry of Environment, Forestry & Tourism, 2013). The greater part of EPL7909 falls at least 60km from the coastal line covering more of the terrestrial than coastal environment with 3 characteristic habitats:

- Gravel plains

Plains greater than about 60 km from the coast are more calcrete rich and are less sensitive than the gypsum plains near the coast. Nevertheless, they are sensitive to scarring from vehicle tracks. A significant portion of EPL7909 is covered by Gravel Plains followed by Rocky Terrains.

- Ephemeral river courses

These systems support diverse plant and animal life, and are linear oases across the hyper-arid zone and,

- Inland rocky hills

Less sensitive than inselbergs, but nonetheless important for biodiversity and refuge for plants and animals, particularly during dry periods. There is a hilly portion on the Northeastern area of EP7909 that characteristically conforms to such a habitat, (Ministry of Environment, Forestry & Tourism, 2013).

5.1.14. Biodiversity: Fauna and Flora

Biodiversity is the diversity amongst living organisms (i.e. all animals, plants and other organisms such as lichens and fungi) as well as the ecosystems they inhabit (terrestrial, aquatic and marine ecosystems) and the ecological processes that they are part of and contribute to. The central Namib might appear to be a barren environment, but its climatic variations superimposed on diverse landscapes and substrates support a great variety of living creatures. The most impressive diversity is found in those groups which normally are cryptic or go unnoticed, namely reptiles and invertebrate groups such as insects and arachnids, and they display many remarkable

adaptations for survival in the Namib. The area is known as a hotspot of species diversity in these groups; most particularly in geckos and sand lizards, beetles, scorpions and solifuges. Some of these species, as well as other more conspicuous mammals and birds, are conservation priorities because of endemicity and rarity, (Ministry of Environment, Forestry & Tourism, 2013). In this report we consider biodiversity under four main headings, to assess how it will be affected by the proposed mineral exploration activities on EPL7909:

5.1.14.1. Fauna

The fauna occurring in the desert area of Namibia is rich and diverse, with a variety of wildlife species adapted to the region's arid climate, rugged terrain, and unique ecosystems. Here is an overview of the fauna expected to occur in the project area:

- **Antelope Species:** The project area as well as the Naukluft area is home to several antelope species, including gemsbok (oryx), kudu, springbok, and klipspringer. These graceful herbivores are well-adapted to the arid conditions and rocky terrain of the region.

- **Mountain Zebra:** The mountainous area supports populations of the endangered Hartmann's mountain zebra. These zebra species are adapted to the mountainous terrain and can often be seen navigating the rocky slopes and valleys of the region.
- **Predators:** Carnivores such as leopards, baboons, black-backed jackals, bat-eared foxes, Cheetahs, and hyenas area expected to inhabit the area, preying on the abundant antelope and other small mammals found in the region. These predators play a crucial role in maintaining the ecosystem's balance.
- **Small Mammals:** Various small mammal species, including rodents, hares, and mongoose, also form part of the project area's fauna. These animals contribute to the region's biodiversity and serve as prey for larger carnivores.
- **Birdlife:** This area boasts a diverse bird population, with species adapted to desert environments, rocky cliffs, and mountain habitats. Eagles, vultures, buzzards, and various other bird species can be observed soaring above the landscape. A total of 650 bird species have been recorded in Namibia and 14

of them are endemic or near endemic. Most of these species occur in central Namibia and not in the proximity of the project area.

Table 10: Bird species likely to occur in the project area.

Common Name	Scientific Name
Violet Wood-Hoopoe	*Phoeniculus damarensis*
Rüppell's Parrot	*Poicephalus rueppellii*
Hartlaub's Spurfowl	*Pternistis hartlaubi*
Damara Hornbil	*Tockus damarensis*
Monteiro's Hornbill	*Tockus monteiri*
Carp's Tit	*Parus carpi*
White-tailed Shrike	*Lanioturdus torquatus*
Rüppell's Korhaan	*Eupodotis rueppellii*
Rosy-faced Lovebird	*Agapornis roseicollis*

- **Reptiles:** The region is home to a variety of reptiles, including lizards, snakes, and geckos. Some of the reptile species found in this area are adapted to the arid climate and rocky outcrops, blending seamlessly into their surroundings. According to Griffin (1998) Namibia has 261 reptile species constituting 30% of Africa' reptile species. Of these 60% are protected by the conservation Ordinance.

Table 11: List of reptiles expected to occur in the project area and their conservation status.

Name	Conservation Status
Coastal Namib Day Gecko	Endemic & Secure
Bradfield's Namib day Gecko	Endemic & Secure
Palmatogecko rangei	Endemic & Secure
Pachydactylus capensis	Secure
Pachydactylus scherzi	Endemic & Secure
Ptenopus carpi	Endemic and secure
Ptenopus kochi	Endemic and secure
Typhlosarus braini	Endemic and secure
Typhlosarus meyeri	Endemic and secure
Typhlacontias brevipes	Endemic and secure

Mabuya spilogaster	Endemic and secure
Mabuya hoeschi	Endemic and secure
Meroles sp.	Endemic and secure
Pedioplanis breviceps	Endemic and secure
Pedioplanis lineoocellata puchella	Secure
Pedioplanis undata	Endemic and secure
Pedioplanis husabensis	Endemic and secure
Coroylosaurus subtessellatus	Endemic and secure
Gerrhosaurus Validus maltzahni	Secure
Zyaspis quadrifrons	Secure
Psammophis trigrammus	Endemic and secure
Psammophis namibensis	Secure
Telescopus sp.	Endemic and insufficiently known
Plythonodipsas carinata	Endemic and secure
Ptosymna bivitta	Secure
Aspidelaps lubricus cowlesi	Secure
Naja woodi	Secure

- **Insects and Arachnids:** The area supports a myriad of insect and arachnid species, from beetles and butterflies to scorpions and spiders. These small but vital creatures play important roles in pollination, decomposition, and ecological balance.
- **Endemic Species:** The area may harbor endemic wildlife species that are found only in specific regions of Namibia. These endemic species are often adapted to the unique environmental conditions of the desert area of Namibia.

The fauna of Namibia's desert area contributes to the region's ecological diversity, serving as indicators of environmental health and playing integral roles in the desert ecosystem. Protecting and conserving the diverse wildlife species of the project area is essential for preserving the region's natural heritage and biodiversity.

Table 12: List of mammals likely to occur in the project area.

Common Name	**Scientific Name**
Caracal	*Caracal caracal*

Hartmann's Mountain Zebra	*Equus zebra hartmann*
African wildcat	*Felis silvetris*
Slender Mangoose	*Galerella sanguinea*
Striped Polecat	*Ictonyx striatus*
Black-backed jackal	*Canis mesomelas*
Springbok	*Antidorcas marsupialis*
Spotted hyena	*Crocuta crocuta*
Small spotted Genet	*Genetta genetta*
Cape Hare Secure	*Lepus capensis*
Southern African Hedgehog	*Atelerix frontalis angolae*
Cheetah	*Acinonyx jubatus*
Black-footed Cat	*Felis nigripes*
Yellow Mangoose	*Cynictis penicillata*
Leopard	*Panthera pardus*
Brown Hyena	*Parahyaena (Hyaena) brunnea*
Phacochoerus africanus	*Common Warthog*
Aardwolf	*Proteles cristatus*
Scrub Hare	*Lepus saxatilis*
Ground Pangolin	*Manis temminckii*
Honey Badger / Ratel	*Mellivora capensis*
Oryx gazella	*Gemsbok*
Bat-eared Fox	*Otocyon megalotis*
Klipspringer	*Oreotragus oreotragus*

Cape Fox	*Vulpes chama*
Suricate	*Suricata suricatta marjoriae*
Greater Kudu	*Tragelaphus strepsiceros*
Common Duiker	*Sylvicapra grimmia*
Steenbok	*Raphicerus campestris*

5.1.14.2. Flora

The project area is characterized by desert biome. The flora of the project area is diverse and adapted to the region's arid climate, rocky terrain, and unique geological formations.

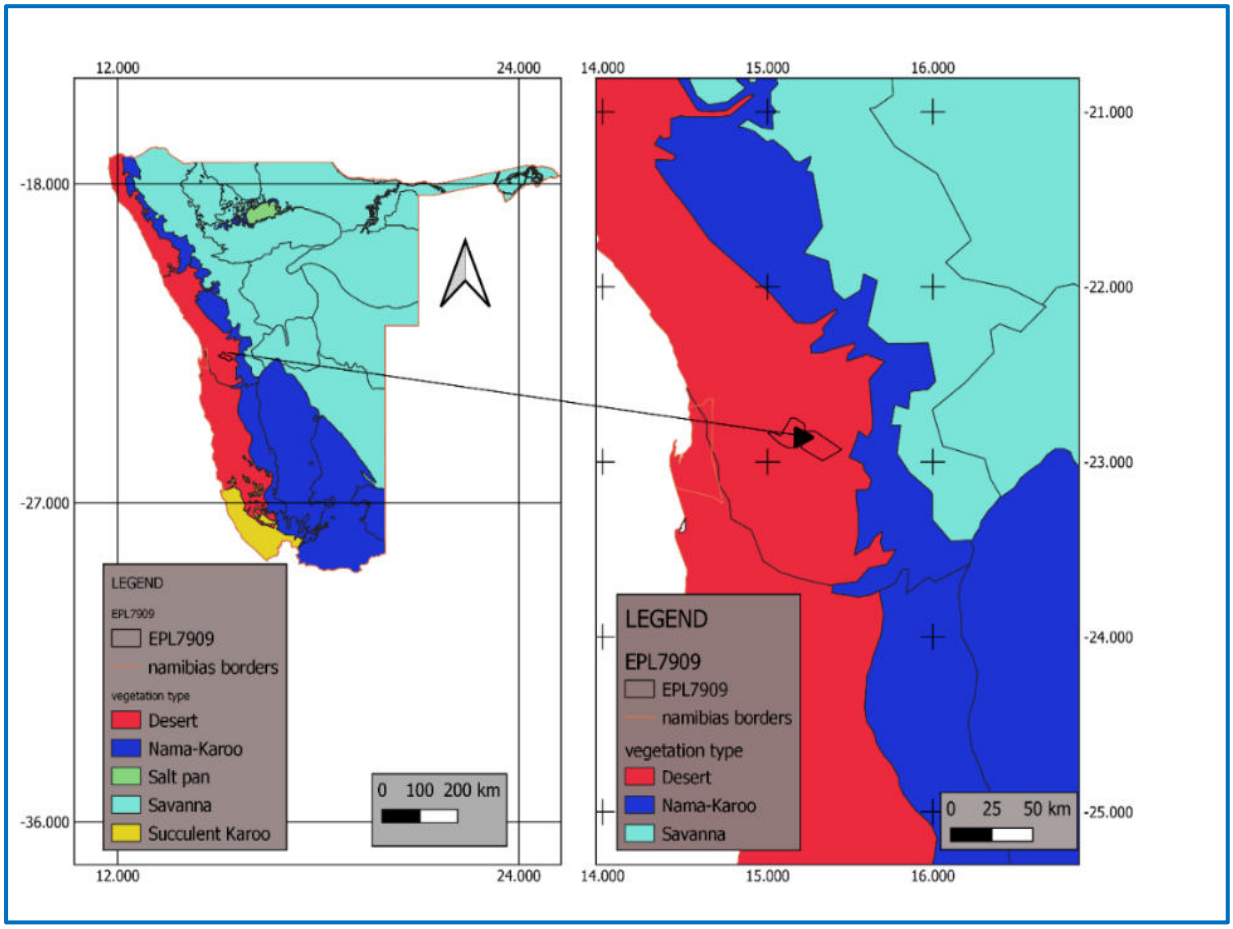


Figure 11: EPL7909 vegetation is characterised by the desert biome.

This section presents an overview of the flora that occurs in the project area:

- **Desert-Adapted Plants:** The flora in this area includes a variety of desert-adapted plants that have evolved to survive in arid conditions with limited water availability. These plants have specialized features such as succulent leaves, deep root systems, and water-storing tissues to endure the harsh desert environment.
- **Succulents:** Succulent plants like aloes, euphorbias, and lithops are common in the project area. These plants store water in their fleshy stems or leaves to withstand periods of drought and extreme heat.
- **Grasses and Grass-Like Plants:** Grasses and grass-like plants are found here too, contributing to the overall biodiversity of the area. These plants play a crucial role in stabilizing soil, preventing erosion, and providing forage for grazing animals.
- **Mountain Flora:** The rugged mountains of the area support a unique array of mountain flora, including hardy plants that cling to rocky slopes and crevices. These plants have adapted to the challenging conditions of the mountainous terrain.
- **Endemic Species:** The area may be home to endemic plant species found only in this specific region of Namibia. These species are often adapted to the local climate, geology, and ecological conditions of the desert area.
- **Wildflowers:** During the brief rainy season, the area may come alive with a variety of wildflowers, adding bursts of color to the arid landscape. These wildflowers bloom in response to seasonal rain and are an integral part of the region's ecosystem.

Conservation Significance: The flora of the area holds both ecological and conservation significance, providing habitat for wildlife, contributing to ecosystem resilience, and supporting the delicate balance of the region's biodiversity.

By understanding and appreciating the diverse flora of the area, one can gain insight into the remarkable adaptations of plants to thrive in challenging desert conditions and contribute to the beauty and ecological richness of the region. In this context the proponent should consider targeting and planning work in a fashion that avoids destruction of plants.

Table 13: List of plants expected to occur in the project area and their conservation status.

Common Name	Scientific Name	Conservation Status
Shepherd's tree	*Boscia albitrunca*	Protected
Worm-bark false-thorn	*Albizia anthelmintica*	Protected
Buffalo-thorn	*Ziziphus mucronata*	Protected
Trumpet thorn	*Catophractes alexandri*	Secure
Red bush willow	*Combretum apiculatum*	Secure
Commiphora dinteri	*Namib corkwood*	Endemic
Wolfdoring	*Lycium bosciifolium*	Secure
River honey-thorn	*Lycium hirsutum*	Secure
Ringwood tree	*Maerua schinzii*	Protected
Dinter's bush	*Manuleopsis dinteri*	Endemic
Bitterbusch	*Pechuel-Loeschea leubnitziae*	Secure
African star-chestnut	*Sterculia africana*	Protected
Camel thorn	*Acacia erioloba*	Protected
Black thorn	*Acacia mellifera*	Secure
False umbrella thorn	*Acacia reficiens*	Secure
Grey camel thorn	*Acacia haematoxylon*	Protected
Sweet thorn	*Acacia karroo*	Secure

Blue thorn	*Acacia erubescens*	Secure
Umbrella thorn	*Acacia tortolis*	Secure
False hook-thorn	*Acacia hereroensis*	Secure
White-stem corkwood	*Commiphora tenuipetiolata*	Secure
African tree grape	*Cyphostemma bainesii*	Endemic, protected
Croton gratissimus	*Lavender fever-berry*	Secure
Blue-leaved corkwood	*Commiphora glaucescens*	Nearendemic
Tall common corkwood	*Commiphora glandulosa*	Secure
Sickle bush	*Dichrostachys cinerea*	Secure
Blue bush	*Diospyros lycioides*	Secure
Common wild pear	*Dombeya rotundifolia*	Endemic
White puzzle bush	*Ehretia alba*	Secure
Skew leaved Elephant Root	*Elephantorrhiza suffruticosa*	Secure
Common guarri	*Euclea undulata*	Secure
Western woody milk bush	*Euphorbia guerichiana*	Secure
Ebony tree	*Euclea pseudebenus*	Protected
Milk bush	*Euphorbia virosa*	Secure
Namaqua fig	*Ficus cordata*	Protected

Laurel fig	*Ficus ilicina*	Secure
Common cluster fig	*Ficus sycomorus*	Protected
White raisin	*Grewia bicolor*	Secure
Velvet raisin	*Grewia flava*	Secure
Trumpet flower	*Ipomoea adenioides*	Secure
Sandpaper raisin	*Grewia flavescens*	Secure
Red spike-thorn	*Gymnosporia senegalensis*	Secure

5.1.15. Threats to the conservation efforts in NNNP.

Major threats to conservation efforts in the NNNP include tourism itself because of off-road driving. The impact of this activity is greatest on the gravel plains where depressions left by vehicles remain for more than 40 years. Lichens are particularly sensitive to mechanical damage as they grow extremely slowly and cannot quickly repair damaged thalli. However, no lichens are expected in the project area. Illegal collection of plants is also a major threat to conservation efforts and the Proponent will make sure neither employees nor Subcontractor's employees harvest or collect plants illegally. Another more modest threat to the NNNP is by the Topnaar pastoralists who graze large herds of goats and small groups of donkeys. The livestock have overgrazed the understory plant growth and fallen seedpods of the riverbeds and are competing for food with wild animals, such as gemsbok. In line with the proposed project, exploration and mining also contribute a lot to degradation if not done properly and alter the landscape, contaminate soil & water as well as destroying critical habitats.

Figure 12: Evidence of land degradation on EPL7909 depicting offroad driving and some forms of abandoned quarrying or mining.

6. ENVIRONMENTAL ASPECTS AND IMPACTS ASSESSMENT

6.1. Introduction

A key part of the Scoping Process is the preliminary identification and consideration of issues and concerns that may impact (positively and/or negatively) with the biophysical and socio-economic environments. The issues that were identified as potentially significant during the Scoping Phase for the basis on which further studies, if necessary, will be conducted during the EIA Phase. The identified potential impacts are assessed following a recognized methodology to determine the magnitude of impact and whether the impact was considered significant and thus warrant further investigation. The assessment considered all stages of the proposed mineral exploration for the target minerals.

6.2. Evaluation of identified Potential Impacts

The evaluation of the significance of the impacts was determined using the standard criteria presented below and was guided by Namibia's legal requirements and international best practice.

6.3. Description of Potential Impacts

The potential impacts on environmental and social resources arising from the proposed development include direct and indirect impacts. The table below presents the overview of likely aspects arising from each of the key project activities and considers their likely interaction with socio-economic and environmental resources and receptors.

Table 14: Identified potential negative and / or positive impacts emanating from the proposed project.

Inception / Levelling of Expectations				
Project activity	**Environmental aspect**	**Identified impact**	**Nature of impact (Positive / Negative)**	**Assessment finding (s)**
Poor communication / misinterpretation of project requirements / Client's needs	Economic	Rework / time loss	Negative	If the project requirements are misunderstood, there will be rework and loss of time which impacts negatively on project costs. This phase was successfully completed and the ESIA study conducted.
SITE ESTABLISHMENT				
Project activity	**Environmental aspect**	**Identified impact**	**Nature of impact (Positive / Negative)**	**Assessment finding (s)**
Mobilization and work area setup	Biophysical	Loss of vegetation or land clearing	Negative	Trees and shrubs will be cleared to make way for temporary canteen; offices; workshop and sample preparation room. Domestic waste will be generated at the work site. There is potential to hazardous products from the storage facilities or from

				the workshop area during maintenance of machinery or equipment which can cause soil and ground water contamination. Further to that petroleum products are highly inflammable making them hazardous to the workers.
	Waste management	Indiscriminate dumping of solid and discharge of liquid waste	Negative	Some of the materials are supplied wrapped from the suppliers resulting in generation of waste onsite. Hazardous substances are stored onsite and all employees should be inducted on how to handle such issues. Occupational hazards are common when there is lack of proper induction.
	Occupational hazard	Storage of hazardous substances or materials	Negative	
	Biophysical	Soil and ground water contamination	Negative	
Recruitment of workers or employees	Socio-economic	Influx of people looking for jobs	Negative	High influx of people looking for jobs is usually driven by recruitment of workers onsite and as a result people are motivated to visit in the morning to try their luck. Influx from communities further away from project area disrupts normal social set up of communities living in the project area causing possible decay of morality possible child labour and increased HIV/AIDS incidence and communicable diseases. This improbable given the remoteness of the project area.
	Gender	Sexual exploitation and abuse	Negative	This refers to sexual abuse of local community members by project employees especially when there is lack of awareness of prohibition of sexual abuse.

Trenching, Drilling, Bulk Sampling	Air quality	Dust emissions	Negative	Excavation activities during the exploration phase results in dust emissions when soil is dry.
	Biophysical	Noise and vibrations	Negative	Heavy machinery, generators and other equipment and machinery used onsite will generate localised noise and vibrations at the area of work.
	Biophysical	Loss of vegetation / land clearing	Negative	Trees may be cut during the exploration phase to make way for the exploration equipment although we have minimal trees and mitigation measures can be put in place to manage the impacts.
Decommissioning Phase				
The exploration programme on EPL7909 is planned over a period of three years and the decommissioning should planned during the last quarter of the exploration phase.				

Table 15: Impact Assessment Criteria employed

Duration – What is the length of the negative impact?	
None	No Effect
Short	Less than one year
Moderate	One to ten years
Permanent	Irreversible
Magnitude – What is the effect on the resource within the study area?	
None	No Effect
Small	Affecting less than 1% of the resource
Moderate	Affecting 1-10% of the resource
Great	Affecting greater than 10% of the resource
Spatial Extent – what is the scale of the impact in terms of area, considering cumulative impacts and international importance?	
Local	In the immediate area of the impact
Regional / National	Having large scale impacts
International	Having international importance
Type – What is the impact	
Direct	Caused by the project and occur simultaneously with project activities
Indirect	Associated with the project and may occur at a later time or wider area
Cumulative	Combined effects of the project with other existing / planned activities
Probability	
Low	<25%
Medium	25-75%
High	>75%

6.3.1. Impact 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. Once the above factors (in **Table 15**) have been ranked for each potential impact, the impact significance of each is assessed using the criteria in **Table 16**. The impact significance will then be rated according to the significance classes (also presented in **Table 16**).

Table 16: Impact significance (IFC, 2012)

Class	Significance	Descriptions
1	Major Impact	Impacts are expected to be permanent and non-reversible on a national scale and/or have international significance or result in a legislative non- compliance.
2	Moderate Impact	Impacts are long term, but reversible and/or have regional significance.
3	Minor	Impacts are considered short term, reversible and/or localized in extent.
4	Insignificant	No impact is expected.
5	Unknown	There are insufficient data on which to assess significance.
6	Positive	Impacts are beneficial

Table 17: Environmental Impacts Identification and Evaluation.

IMPACT	AFFECTED ENVIRONMENTAL AND SOCIAL COMPONENTS															Project phase	Duration	Magnitude with project	Extent / Spatial scale	Type	Probability	Significance without mitigation
	FAUNA AND FLORA	WATER QUALITY	WATER QUANTITY	LAND USE	SOIL AND SLOPE STABILITY	VISUAL INTRUSION	AIR QUALITY	HUMAN SETTLEMENTS	PUBLIC NUISANCE	INFRASTRUCTURE & SERVICES	TOURISM	ARCHAEOLOGY	PUBLIC HEALTH & SAFETY	SOURCE OF INCOME	CULTURE & HERITAGE							
Vegetation Clearing	√	√	√	√	√	√	√		√		√		√	√	√	TDBS	Short	Small	Local	Direct	Medium >75%	Major (-)
Air pollution	√	√	√	√			√		√		√		√	√		TDBS	Short	Moderate	Local	Direct	Medium 25 - 75%	Minor (-)
Soil pollution	√	√	√	√	√	√	√		√	√			√	√		TDBS	Short	Small	Local	Direct	Medium 25 - 75%	Minor (-)
Ground water pollution	√	√	√	√	√					√	√		√	√		TDB	Moderate	Moderate	Local	Direct	Medium 25 - 75%	Major (-)
Solid waste Generation	√	√	√	√		√	√		√	√	√		√	√		TDB	Permanent	Moderate	Local	Direct	Medium 25 - 75%	Major (-)
Vehicular Movements	√			√	√	√	√		√		√		√			TDBS	Short	Small	Local	Direct	Medium 25 - 75%	Minor (-)
Visual impact				√		√	√		√	√			√	√		TDBS	Short	Small	Local	Direct	Medium 25 - 75%	Minor (-)
Dimension stone test cuts	√	√	√	√	√	√	√		√	√	√	√	√	√		DTC	Short	Moderate	Local	Direct	Medium 25 - 75%	Major
Employment Creation								√		√			√	√	√	TD	Temporary	High	Regional	Direct	High >75%	Moderate (+)
Land Use change	√	√	√	√	√	√		√	√		√	√	√	√	√	TDBS	Permanent	Medium	Local	Direct	Medium 25 - 75%	Minor (-)
Occupational Hazards													√			TDBS	Short	Small	Local	Direct	Medium 25 - 75%	Minor (-)
Drone Flights	√			√					√		√					G	Short	Medium	Local	Direct	Medium 25 - 75%	Major

Key: T – Trenching phase, D – Drilling phase, C – Dimension Stone Test Cutting, S – Site Establishment phase, Geophysical survey

6.4. Potential Impacts considered insignificant

Environmental / Social Aspect	***Project phase***	***Nature of Impact (Positive / Negative)***	***Potential Impact***	***Assessment findings***
Impact on Fauna	Invasive exploration	Negative	Movement of equipment and noise	The exploration activities are not expected to affect actively mobile animals that can easily migrate to other places within the NNNP.
Noise	Mobilization and site establishment, Trenching, Drilling, Bulk sampling.	Negative	Noise from operation of machinery and equipment	Minor given that there are no sensitive receptors in the vicinity.
Cultural heritage	Invasive exploration	Negative	Potential to uncover heritage remains during project activities.	Findings are unlikely, as no known heritage sites are mapped and protected in the project area. The chance find procedure will be employed and protects culture and heritage of the project area should there be any findings during the project lifecycle.
Climate change adaptation	Invasive exploration	Negative	The potential for the project to induce climate change.	The proposed project is unlikely to be affected by potential climate change impacts in the short to medium term, but in the long term.

Environmental / Social Aspect	*Project phase*	*Nature of Impact (Positive / Negative)*	*Potential Impact*	*Assessment findings*
Climate change cause / contribution	Invasive exploration	Negative	The proposed project contributing to climate change through the emissions of Green House Gasses.	The proposed project is of a medium term, with exploration envisioned to be completed after a few years and contribution is insignificant.

6.5. Potentially Significant Impacts scoped into the ESMP.

The following section describes potentially significant issues based on the findings from the site visit and consultations held with IAP's. Many of these impacts can be adequately addressed through the implementation of appropriate mitigation and management measures.

Table 18: Identified potential significant impacts scoped into the ESMP.

Environmental / Social Aspect	*Project Activities*	*Nature of Impact (+ve / -ve)*	*Potential Impact*	*Assessment findings*	*Proposed Mitigation Measures*
Vegetation clearing	Site establishment,	-ve	Loss of vegetation, Loss of habitats,	Vegetation has ecological and conservation significance, providing	No removal or collection of plants allowed.

	Trenching, Drilling and Bulk sampling		Reduced aesthetic value	habitat for wildlife, contributing to ecosystem resilience. It is mainly found on the gravel plains, along ephemeral rivers and rocky outcrops or hills. Some of the vegetation is endemic and protected and it is important to avoid these areas as much as possible. Impacts may arise from direct damage by motor vehicles driving over them, drill rigs, excavations or clearing to make way for equipment.	Driving on existing tracks. Identify and mark special plants and arrange relocation if they cannot be avoided. Avoid working in areas with special plants or arrange for relocation as above.
Impacts on reptiles	Site establishment, Trenching, Drilling and Bulk sampling	-ve	Reptiles and slow-moving terrestrial animals may be affected during exploration activities.	Some of these animals may be destroyed or their habitats damaged.	Driving should be restricted to existing tracks only. Drive slowly. Avoid driving over burrows and mounds etc.
Social Economic Benefits	Site establishment, Trenching, Drilling and Bulk sampling	+ve	Capital injection to fund the exploration activities and employment creation	The jobs created during the exploration phase are significant at the local level and will stimulate local economy indirectly. The data generated will add on to the pool of knowledge for future developments.	Capitalize on blending expatriates with locals for skills transfer.

Soil and Ground water pollution	Site establishment, Trenching, Drilling and Bulk sampling	-ve	Ground water pollution due to: 1. Point source ground water pollution from refueling point. 2. Point source pollution from hazardous chemical spills.	Servicing of equipment and machinery can result in spillages. Spillages may also occur during fueling.	Fuel storage tank should be erected on, and impermeable bund walled surface with a volume of twice the size of the tank.
Occupational Hazards	Work site establishment, Trenching, Drilling and Bulk sampling	-ve	Occupational health and safety hazards in the mining industry are common.	Moving machinery and parts of equipment are a safety hazard to the employees including dust generated by the work activities.	Contractors to have SHE policy in place and enforced by a SHE Officer. Machinery should be well serviced and maintained.
Solid waste generation	Site establishment, Trenching, Drilling and Bulk sampling	-ve	The exploration team is expected to generate domestic solid waste from their work site area during exploration.	Waste will be generated by employees ranging from office materials to kitchen waste all of which comprises general waste.	The proponent will develop a waste management plan to counter the impact of waste generation and dispersal on the project footprint area. Provide adequate number of bins to contain domestic waste. All litter should be disposed of at the nearest designated disposal site

					(Proponent should arrange with Walvis Bay Municipality).
Waste management (liquid)	Site establishment, Trenching, Drilling and Bulk sampling	-ve	Liquid waste management should conform to standards to alleviate potential ground water contamination.	Waste will be generated from sanitation facilities on the work site area.	Proponent should make use of Dixy toilets which should be emptied at a designated sewer system.
Noise pollution	Trenching, Drilling and Bulk sampling	-ve	Noise from equipment and machinery during exploration	Noise generated by machinery and equipment especially during drilling.	Noise can be a nuisance to the employees. Power efficient tools/machinery should be used. Workers should be given protective equipment when operating noisy equipment while noisy operations can be done during the day.
Land Use change	Trenching, Drilling and Bulk sampling	+ve	Land use change may be triggered by discovery of economic mineral deposits resulting in increased economic activity.	The project area will be restricted from the public and tourists during exploration.	Reduced access to the tourism sites / activities in the project area depending on the preliminary exploration results. Create awareness and formulate implementation

					plans that harmonize mining and existing status quo especially tourism. Create new tourism products and sites.
Air quality	Site establishment, Trenching, Drilling and Bulk sampling	-ve	The exploration activities generate dust and other particulate matter. While scrapping of the soil during site establishment also creates dust particulate matter.	Excavation, drilling and bulk sampling activities will discharge some form of air pollution into the atmosphere and marginally affect the ambient air quality of the vicinity.	Dust can be suppressed during drilling activities and scraping of land surfaces using water.
Drone flying	Geophysical Survey	-ve	Drone flying negatively affects wildlife.	Drones can potentially collide with manned aircrafts flying tourists over the Namib Naukluft National Park endangering passengers and crew. Flying drones induce stress to many animal species especially nesting birds and breeding animals. They also cause noise and visual impact.	Follow fly regulations prescribed by NCAA and approval by NNNP Management.

Dimension stone Test Cuts	Sample Block Extraction	-ve	Sample block extraction generate dust and visual impact.	The extraction of a sample block potentially has a major visual impact when in the field of view of the tourist route along the C28 road and near to see by eye.	Test cuts should be done on the blind side of the hillside or very far from the NNNP access roads where its not visible.

6.6. Mitigation Measures

Mitigation measures will focus on reducing the effects of the potential environmental and social impacts identified and to ensure that an acceptable measure of mitigation options during exploration can be maintained when an impact cannot be avoided completely. An ESMP will be developed and will set out the management and mitigation measures for the project, responsible parties for implementation, monitoring and enforcement, monitoring indicators and indicators for the respective impacts.

7. CONCLUSION AND WAY FOWARD

7.1. Conclusion

Through the scoping process, it was found that there were no significant impacts emanating from this project that warrant conducting specialist studies. This is mainly due to the fact that the project is at the exploration phase and predominantly making use of non-invasive methods (desktop, electromagnetic surveys) while trenching, drilling and bulk sampling will be target specific as dictated by the survey results. This spares non-target areas from unnecessary destruction or disturbances. The impacts are also short term and minor and can be management by the proposed mitigation measures. As a result we can conclude that this ESR and accompanying ESMP can suffice and forms the basis upon which an ECC can be granted for the exploration activities planned on EPL 7909.

7.2. Way Forward

The ESR was submitted to MME being the competent authority for issuing of consent to allow MEFT to conduct the necessary review as required before issuing an ECC. The decision from MEFT will be communicated registered I&APs as required under the EMA Act.

8. REFERENCES

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9. ANNEXURE 1: BACKGROUND INFORMATION AND INVITATION TO PARTICIPATE DOCUMENT (BID)

BACKGROUND INFORMATION DOCUMENT

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED EXPLORATION ACTIVITIES ON EXCLUSIVE PROSPECTING LICENCE 7909 IN THE WALVISBAY DISTRICT, ERONGO REGION, NAMIBIA

Proponent: TUMAS GRANITE CC
Postal Address: P. O. Box 20244, Windhoek
Telephone: +264811283520

E.A. Practitioner : Outrun Consultants CC
Postal Address: P. O. Box 70822, Khomasdal, Windhoek
Telephone: +264 812 683 578
Email: outrungreeninfo@gmail.com

1. PURPOSE OF THIS DOCUMENT

1.1. The purpose of this Background Information Document (BID) is to provide stakeholders with the opportunity to register as Interested and Affected Parties (I&APs) and to submit possible comments concerning the proposed prospecting activities on Exclusive Prospecting Licence No. 7909 registered in the name of the proponent, Tumas Granite CC.

1.2. This BID further serves to brief the Ministry of Environment, Forestry & Tourism (MEFT) and any I&APs about details of the planned exploration projects and the initial exploration programme proposed by Tumas Granite CC.

1.3. The Proponent has appointed Mr. Josiah T. Mukutiri of Outrun Consultants CC as its Environmental Assessment Practitioner, who will undertake further activities in order to facilitate the application for an Environmental Clearance Certificate with the Environmental Commissioner as prescribed by the Environmental Management Act (No. 7 of 2007) and Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012).

1.4. The aim of the Environmental Impact Assessment process is to generate information concerning the environmental impact of the proposed exploration activities, facilitate the consideration of environmental issues in planning and decision making processes, and provide the public and other stakeholders a platform to participate in these processes.

1.5. The purpose of this document is to provide project background information to interested and affected parties (I&APs), hence providing an opportunity for them to receive information, submit their comments and raise issues with respect to the environmental authorization process.

1.6. The information obtained from I&APs may assist regulatory authorities to evaluate the acceptability of the project and issue an environmental clearance certificate.

1.7. A draft Environment Management Plan (EMP) will be prepared as part of the EIA process and used by the Proponent as guidance throughout the exploration phase, to ensure that the identified environmental impacts are avoided or limited.

2. LOCALITY

2.1. The location of the project, namely EPL 7909 is depicted in Figure 1 below.

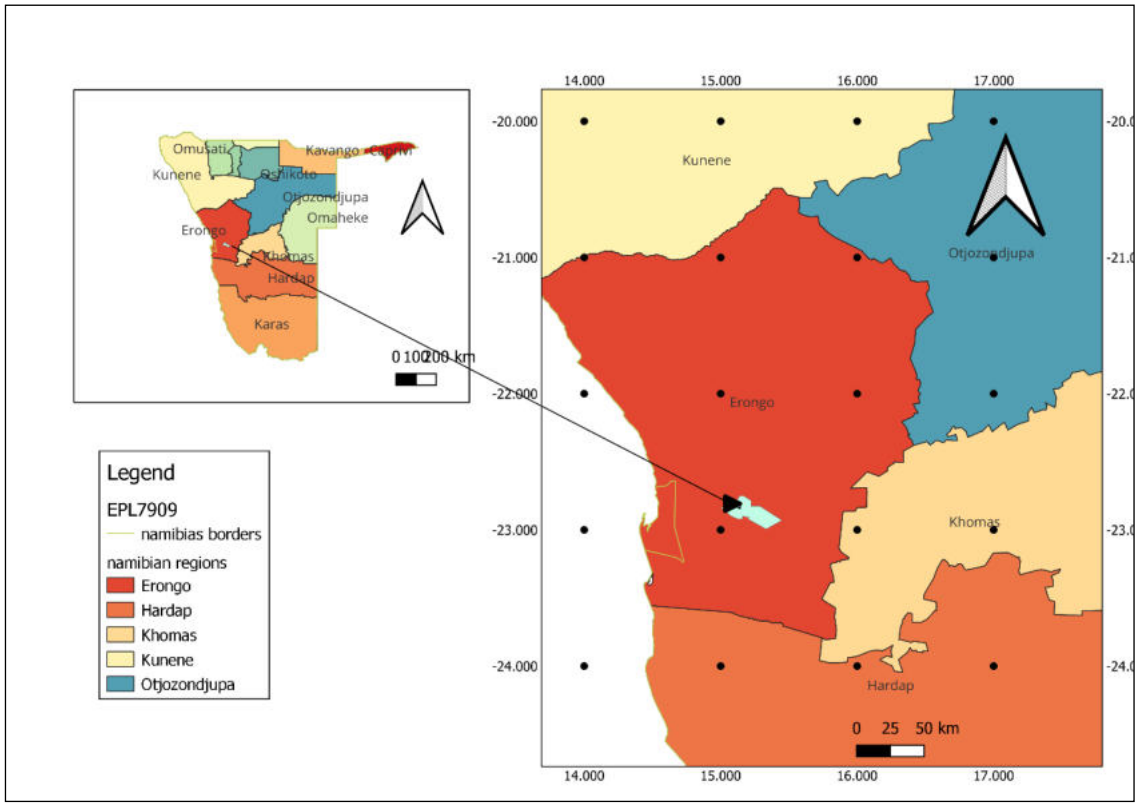

Figure 13: The location of EPL7909 in Erongo Region.

2.2 Target Groups of Minerals

Tumas Granite cc holds the exclusive prospecting license for nuclear fuels, dimension stone, base and rare metals and industrial minerals.

3. DESCRIPTION OF THE PROJECTS

3.1. EPL 7909 is situated approximately 60km outside Walvis Bay on the C28 District Road, and is surrounded by numerous current exclusive prospecting licenses and mining licenses, issued to other companies notably with respect to nuclear fuel minerals. The area covered by the project area was subject to various exploration activities for nuclear fuels and other minerals by previous license holders in the past. EPL 7909 falls within the Namib Naukluft National Park.

3.2. EPL 7909 was issued on 30 September 2020 for a period of 3 years with respect to dimension stone, nuclear fuels, base and rare metals and industrial minerals, and EPL 7909 was renewed for another two year period until 29 September 2025.

3.3. EPL7909 was initially granted under exclusion of a small portion, which the proponent intended to include in its exploration activities when it applied for the license. A subsequent application for the amendment of EPL 7909 to include that portion is currently pending decision by the Honourable Minister of Mines and Energy.

3.4. EPL7909 is accessible by major existing gravel roads and tracks, as well as access tracks developed from historic exploration activities. The damaging environmental impact caused by road construction can thus be limited significantly by utilizing the pre-existing infrastructure and impacted areas.

3.5. The following exploration program has been approved by the Ministry of Mines and Energy:

3.5.1. Detailing with geological desk studies and mapping
3.5.2. Environmental Impact Assessment, Environmental Management Plan
3.5.3. Mineralogical sampling and ground geophysical surveys, including radiometrics
3.5.4. Percussion drilling and down-hole radiometrics, diamond drilling
3.5.5. Mineralogical sampling, metamorphic and metasomatic alteration studies
3.5.6. Cutting, polishing and evaluation of samples
3.5.7. Marketing surveys

The proponent will allocate the service contracts for the above work program to such service providers that have a positive track record with regard to their previous work in the same and surrounding areas of EPL 7909.

4. NEED AND DESIRABILITY OF THE PROJECTS

4.1. Tumas Granite cc intends to explore the mineral potential of the area and identify and evaluate rock formations which may host economic mineralization with respect to the minerals/metals described in paragraph 3.2 above, in order to identify potential economically feasible targets for the development of Namibia's mineral resources.

4.2. Mineral exploration and mining comprise important development goals of the Government of Namibia and contribute significantly to the generation of foreign currency, GDP and create additional employment.

4.3. Future local processing of minerals will result in significant additional economic benefits and employment in various sectors.

5. INFRASTRUCTURE

5.1. The area covered by EPL 7909 is accessible by the existing gravel roads and tracks. Exploration activities will utilize the many existing and accessible roads and tracks.

5.2. No fixed structures for water, energy or ablution facilities will be erected during the exploration program, only fully mobile, removable and temporary accessory units will be used. Specialized teams with work stations that are fully equipped for work in remote locations in the absence of any service infrastructure will conduct the exploration work on EPL 7909.

5.3. Any refuse will be retained in suitable containers and disposed of in Walvis Bay or Swakopmund.

5.4. The Proponent's geological consultants, service providers and exploration team will reside in Walvis Bay or Swakopmund.

6. PROPOSED STUDIES

A baseline environmental study will be done covering the following aspects:

6.1. **Biodiversity Scoping study**

A flora and faunal study is proposed. A baseline map showing area covered by protected flora will be generated indicating no go areas as well.

6.2. **Culture and Heritage Scoping**

A culture and heritage scoping survey will be done to investigate the occurrence and significance of historical heritage sites.

6.3. **Assessment Of Alternatives**

6.3.1. **No-Go Option**

The “no-go” option means maintaining the status quo. This option will be explored to assess the implications of not implementing the project or portions thereof.

6.3.2. **Sites**

Sites within the EPLs that pose minimal impact on the environment will be chosen for follow-up work. Similarly access routes will be assessed and those with minimal environmental impacts chosen.

6.3.3. **Strategic Alternatives**

Strategic alternatives will be explored to see the best way to assess and evaluate the targeted mineral.

7. THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

An EIA is the process of identifying, predicting, evaluating and mitigating the biophysical, social, health and other relevant effects of development projects prior to major decisions being taken and commitments made (refer to Figure 2).

The objectives of the EIA will be to:

- Provide Interested and Affected Parties with adequate information to understand the potential environmental and socio-economic impacts of the proposed project and opportunities to comment on the project and the process.

- Provide information that will assist the consultants to incorporate effective mitigatory measures into the design and implementation of the project.

- Provide the regulatory authorities with sufficient information to serve as a basis for sound decision making.

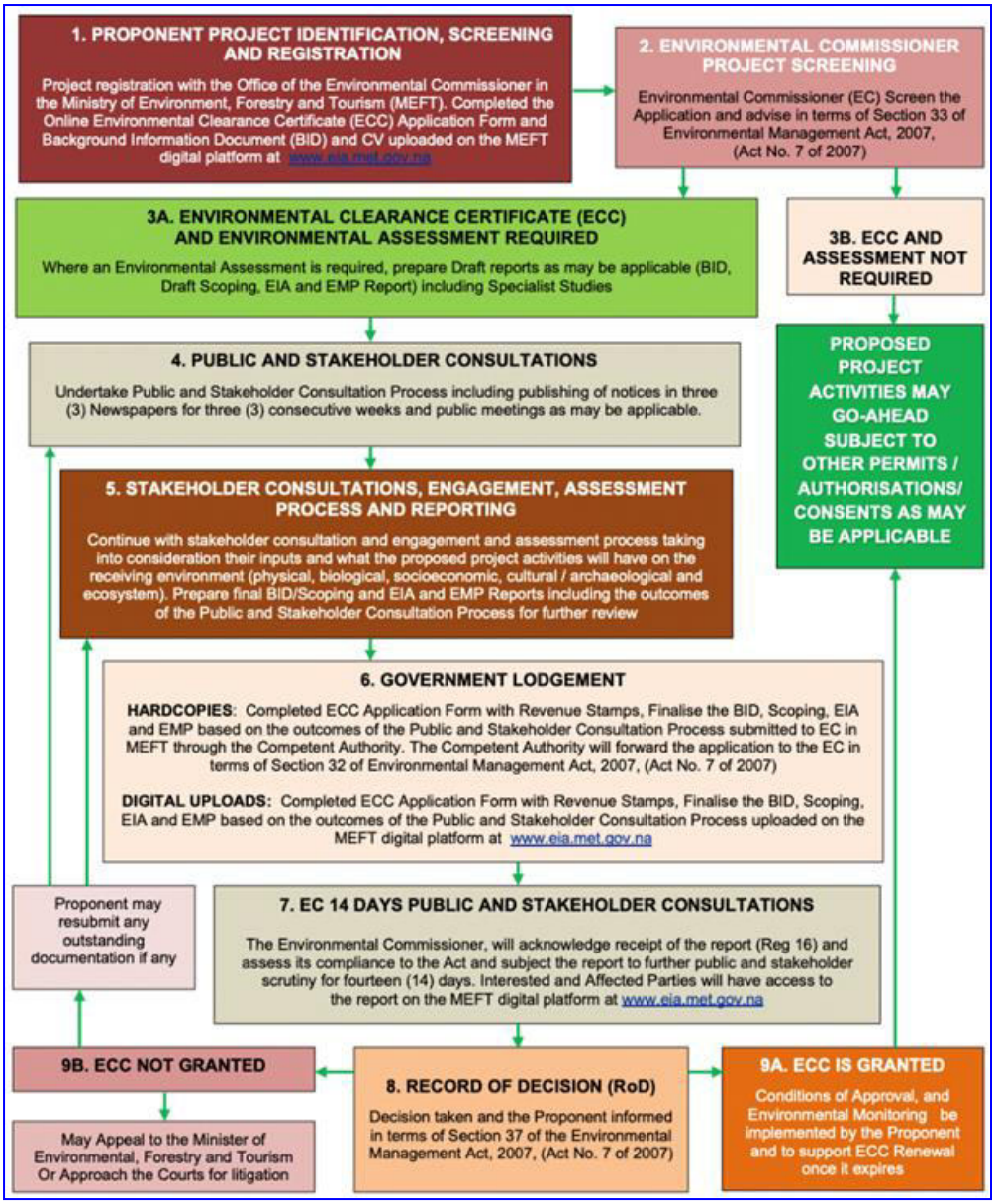

Figure 14: The EIA process in Namibia.

It is a formal requirement during the EIA process to carry out a scoping study and this is in-line with the Namibian Environmental Management Act (2007). The purpose of this study is to direct the assessment on the key issues for assessment and at the same time eliminate those that do not require detailed intensive studies.

7.1. **Scoping Activities**

- Consultations with key stakeholders, government departments etc.
- Advertising and carrying out public meetings.

- Distribution of project information to the public.
- Producing draft scoping report.

- Gathering public comments on draft scoping report.

- Submission of final scoping report to Ministry of Environment, Forestry & Tourism (MEFT).

8. PHASE 2

Issues that are raised during the scoping study will be used to develop terms of reference for specialist studies. Experts within the Consultancy Team will be assigned to carry out the specialist studies. The results from the specialist studies will be incorporated into the Draft EIA report.

8.1. **Draft EIA Report**

The draft EIA report will reflect all the identified issues, mitigation measures and the proposed environmental management plan. The draft EIA document will be made available to the public for comments on issues of interest and can also raise any concerns they may feel require further attention.

8.2. **Legal Framework**

The Namibian Government gazetted the Environmental Management Act in 2007 and is supported by a set of guidelines and regulations. The EIA process will follow the EIA Policy and the Environmental Management Act & its regulations. The EIA will also take cognizance of applicable international standards and guidelines, conventions and treaties.

9. PUBLIC CONSULTATION AND DISCLOSURE PLAN

According to the Environmental Management Act (2007), public participation forms an integral part of the EIA process. Adequate public consultation is important to identify issues relevant to the project, evaluating their significance and deciding measures to mitigate these impacts. A public consultation plan has been developed in line with the Environmental Management Act (2007) and seeks to achieve the following objectives:

- To ensure all stakeholders are included in the consultation and disclosure process;
- To ensure initial information disclosure about the project is appropriate and understandable to the non-technical stakeholders and the local population;
- To ensure that adequate and timely information is provided to the public;

- To ensure that all stakeholders are given sufficient opportunity to express their issues, concerns and opinions;

- To ensure that stakeholders' opinions and concerns influence project decisions;
- To ensure regular feedback is given to the public;

- To ensure that effective communication will continue during the construction and operational phases of the project;

Tumas Granite CC and the Outrun Team are committed to active and ongoing communication and consultation of all members of the public with regards to the proposed exploration activities.

9.1. **How you can be involved?**

- Attend public meetings that will be advertised in the local media.

- Contact the EIA consultants for further information.
- Review the draft reports when you are invited to do so within the timeframes provided.

Please ensure that you are registered on the project database by providing your contact details to the EIA Consultants. Registration will ensure that you receive on-going communication about the EIA process, meeting invitations, project updates and invitations to review the draft reports.

TUMAS GRANITE CC
REGISTRATION AND COMMENTS FORM
Please register me as an Interested and Affected Party (I&AP) to receive ongoing communication about the EIA process and the proposed project.

NAME:	TELEPHONE:
ORGANIZATION:	FAX:
DESIGNATION:	E-MAIL:
ADDRESS:	
COMMENTS AND ISSUES OF CONCERNS	
PLEASE SUBMIT REGISTRATION AND COMMENTS TO:	

JOSIAH T. MUKUTIRI
P. O. Box 70822
Khomasdal
Windhoek
Namibia
Mobile: +264 – 812 683 578.
E-Mail: outrungreeninfo@gmail.com

10. ANNEXURE 2: PROOF OF PUBLIC CONSULTATION DOCUMENT

11. ANNEXURE 3: CONSULTANT'S CVS

OUTRUN CONSULTANTS CC

CURRICULUM VITAE (CV)

Position Title and No.	Environmental Assessment Practitioner
Name of Expert:	JOSIAH T. MUKUTIRI
Country of Citizenship / Residence:	Namibian

2 EDUCATION:

Name of Institution	Date Obtained	Degree/Qualification
Aldersgate College (Philippines)	2001	Master of Business Administration
University of Zimbabwe (UZ)	2003	BSc Honours in Applied Environmental Science

3 EMPLOYMENT RECORD:

Period	Employing Organization and Position. Contact info for references	Country	Summary of activities performed relevant to Assignment
January 2007 – Current	**Employer**: Outrun Consultants cc **Position held:** EIA PRACTITIONER: **Reference:** William Moyce +263 774 042 548	Namibia	• Team leader responsible for Planning, research designing, data collection, analysis and report writing etc. • Coordinating team members for efficient service delivery, high quality data and resource utilization. • Policy and legal analysis of proposed project to ensure legal compliance throughout the project lifecycle, design, construction, operation and decommissioning. • Project Management • Environmental monitoring throughout project life cycle
		Namibia **USAID-Medical Sciences for Health (MSH) contract. Outrun Consultants cc**	• The design and installation of new waste management facilities at Katutura hospital Intermediate, Windhoek, Namibia. • Characterization and developing a waste management plan for Intermediate Hospital Katutura and all other health facilities in Khomas Region.

		Environmental Consultant For references: Benjamin Ongeri / Evans Sagwa, USAID-MSH Management Tel.: +264 61 228 016 Email: esagwa@msh.org.na / bongeri@na.pfscm.org	• Developing broad specifications of equipment requirements for the proposed waste management facilities. • Technical evaluation of bids
		USAID-Medical Sciences for Health (MSH) contract. Outrun Consultants cc Environmental Consultant For references: Benjamin Ongeri / Evans Sagwa, USAID-MSH Management Tel.: +264 61 228 016 Email: esagwa@msh.org.na / bongeri@na.pfscm.org	• Environmental Impact Assessment for the new incinerators at Intermediate Hospital Katutura. • Conducting public consultations. • EIA Practitioner responsible for identifying potential impacts and assessing impacts significance. • Assessing technological alternatives. • Compiling Environmental Management Plan (EMP).
		Africa Humanitarian Action (AHA) contract **Outrun Consultants cc Environmental Consultant** For references: Ms. Aynalem Tekle-Giogis, Country Representative	• This was a research-based assignment. Deaths were reported at Osire Refugee Settlement and was suspected to be due to contaminated borehole water causing panic and resulting in refugees abandoning borehole water. I was contracted to assess the potential of groundwater contamination by pit latrines at Osire Refugee Settlement. • Activities included geological and hydrological mapping of the area, characterisation of soils, identification of potential sources of microbial contaminants and microbial analysis of ground water.

		Tel.: +264 61 235 107 Email: aha@africaonline.com.na	
		Offshore Development Company (ODC) **Outrun Consultants cc Environmental Consultant** For references: Mr. Phillip Namundjebo, Chief Executive Officer Tel.: +264 811 228 222 Email: phillip.namundjebo@odc.com.na	• Feasibility study and waste management plan for Omaenene Business Park in Omusati Region. • Environmental Impact Assessment for Omaenene Business Park. • EIA Practitioner responsible for managing the EIA process, public consultation, assessing impacts significance, compiling EMP.
		Ministry of Agriculture Water and Land Reform **WASH Sub-contract Consultant** For references: Mr. Victor Slinger / Mr. Kevin Mwinga Directorate of Rural Water Supply Tel.: +264 61 2087 111 Email: nantangat@mawf.gov.na	• Capacity building programme:- Developing training manuals and facilitating workshops in Solid and Liquid Waste Management. Trained all Rural Water Extension Officers in 14 Regions of the country.
		Ministry of Land Reform and Resettlement – Programme for Communal Land Development (PCLD) funded	• Assessing the socio-economic status and benefits of small-scale commercial farming units in Oshikoto Region. • This involved designing data collection tools, socio-economic baseline data collection, analysis and report writing. • Programming infrastructure developments plans based on research findings, environmental status quo, climate change etc.

		by EU – Basket Fund Socio-Economist Consultant For References: Jericho Mulofwa Programme Manager Tel: +264 812 706 404 Email: jericho.mulofwa@gmail.com	
January 2003 – December 2006	**Employer**: University of Zimbabwe **Position held:** Research and Teaching Assistant **Reference:** Dr Elijah Nyakudya Dept. of Soil Science & Agricultural Engineering Email: enyakudya@agric.uz.ac.zw +263 4 333 880	Zimbabwe	• Conducting first and second year lectures, field and laboratory practical lectures. • Grading examinations, assignments and practical lectures. • Invigilating examinations.

4 MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS:

2023: Registered Member- International Association of Impact Assessment (IAIA) [Membership registration number: 200870249

5 LANGUAGE SKILLS:

Language	Speaking	Reading	Writing
English	Excellent	Excellent	Excellent
Afrikaans	Poor	Poor	Poor

6 ADEQUACY FOR THE ASSIGNMENT:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks
• Assessing the socio-economic status and benefits of small-scale commercial farming units in Oshikoto Region.	Name of Project: **Programme for Communal Land Development (PCLD) – EU Basket Fund.** **Year:** November 2017 – March 2018 **Location:** Namibia **Client:** Ministry of Land Reform and Resettlement **Main project features:**

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks
• This involved designing data collection tools, • Socio-economic baseline data collection, analysis and report writing, • Develop infrastructure development recommendations based on research findings, project goals, climate change etc. • Assessing legal and policy instruments relevant to the proposed project for all project phases: design, construction, operation and decommission.	Development of infrastructure for small-scale Commercial Farming Units in the Northern Regions of Namibia. **Positions Held:** Environmental and Socio-economic Development consultant **Activities Performed:** • Develop research design • Developing participatory research tools • Pre-testing research tools • Training of Enumerators • Data analysis, interpretation and report writing • Developing sustainable infrastructure development recommendations.
	Year: January 2012 – December 2012 **Location:** Namibia **Client:** Ministry of Agriculture, Water and Land Reform:-Directorate of Rural Water Supply **Main project features:** Development and facilitation of Water, Sanitation and Hygiene (WASH) capacity building programme for Rural Water Supply Officers. **Positions Held:** Water and Solid Waste Management **Activities Performed:** Developing training materials and facilitation of Water and solid waste management and providing technical inputs into waste characterisation and management planning.
	Name of Project: The procurement and installation of new incinerators at Intermediate Hospital Katutura, Windhoek – Khomas Region, Namibia. **Year:** 2010 – December 2013 **Location:** Namibia **Client:** Medical Sciences for Health (MSH) for Ministry of Health and Social Services **Main project features:** EIA performed to identify potential environmental impacts of establishing incinerators at Intermediate Hospital Katutura. Determine capacity and appropriate waste management technology based on quantity and types of medical waste and 15 year projection. **Positions Held:** Environmental Impact Assessment Practitioner **Activities Performed:** • Environmental Impact Assessment for the new incinerators at Intermediate Hospital Katutura. • Conducting public consultations. • EIA Practitioner responsible for identifying potential impacts and assessing impacts significance. • Assessing technological alternatives. • Assessing legal and policy issues relevant to the proposed project. • Compiling Environmental Management Plans (EMP), • Develop broad specifications of health care waste management needs in the short, medium and long term, • Technical input in the procurement and management of installations.
	Name of Project: Investigation into the potential ground water contamination by pit latrines at Osire Refugee Settlement. **Year:** 2012 **Location:** Osire Refugee Settlement, Otjozondjupa Region, Namibia

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks
	Client: Umgeni Water **Main project features:** This was a research-based assignment. Deaths were reported at Osire Refugee Settlement and was suspected to be due to contaminated borehole water causing panic and resulting in refugees abandoning borehole water. I was contracted to assess the potential of groundwater contamination by pit latrines at Osire Refugee Settlement. Activities included geological and hydrological mapping of the area, characterisation of soils, identification of potential sources of microbial contaminants and microbial analysis of ground water. **Positions Held:** Lead Consultant: Research **Activities Performed:** • Developed a water infiltration model in the Osire catchment area based on the geology and spatial distribution of boreholes vis a viz their characteristics such as depths, resting water levels, yields etc. • Developed research design and data collection tools, data collection and analysis, interpretation and report writing.

Expert's contact information : E-mail outrungreeninfo@gmail.com Phone…+263 812 683 578

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available, as and when necessary, to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Josiah T. Mukutiri  ……{15/08/2024}

Name of Expert Signature Date