ENVIRONMENTAL SCOPING REPORT FOR THE PROPOSED MINERAL EXPLORATION ON EPL 8106 IN OTJIMBINGWE AREA, ERONGO REGION.

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 EPL8106 in Otjimbingwe Area in Erongo Region. It describes the proposed studies 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, Tourism and Forestry (MEFT) for approval.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

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

The **'Proponent'** – this refers to the Promoter of the project.

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.

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

EXECUTIVE SUMMARY

This scoping study was undertaken for the proposed **MINERAL EXPLORATION ACTIVITIES ON EPL 8106 IN OTJIMBINGWE AREA IN ERONGO REGION, NAMIBIA.** It was done in accordance with the requirements of the Environmental Management Act (EMA), No.7 of 2007 and the Environmental Impact Assessment Regulation, No. 30 of 2012, gazetted under the Environmental Management Act, No. 7 of 2007. Furthermore, it will determine 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. 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 local print media and posters pinned in public places in the nearest settlement at !Nami#Nus Village. Advertisements were published in the national newspapers notifying I&APs of the ESIA and inviting them to attend scheduled meetings and / or register their concerns with the Environmental Assessment Practitioner (EAP). 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. Most of the potential negative impacts identified were short term and minor while a few major impacts related to ground water contamination, air pollution and vegetation clearing. 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) is 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. In order to provide clarity to the reader, a document roadmap is provided in terms of the aforementioned regulatory requirements (Table 1):

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	
11	List of References	List of references quoted in the document

1 INTRODUCTION

The proponent, Kema Resources (KR) is planning to embark on exploration of Industrial Minerals, Base & Rare Earth Metals, Precious metals and Precious stones from EPL 8106 located in Otjimbingwe Area in Erongo Region. The planned work will progressively include geophysical surveying, geological mapping and sediment geochemical sampling and testing, drilling and bulk sampling. 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 Consultant to conduct the Environmental Impact Assessment (EIA) in order 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 was tasked to conduct the Environmental and Social Impact Assessment for the mineral exploration activities on EPL 8106 by the Proponent, KR.

1.1 Project Location

The proposed project is located south of Karibib in the Erongo region. The locality map of the proposed project is shown in Figure 1 below.

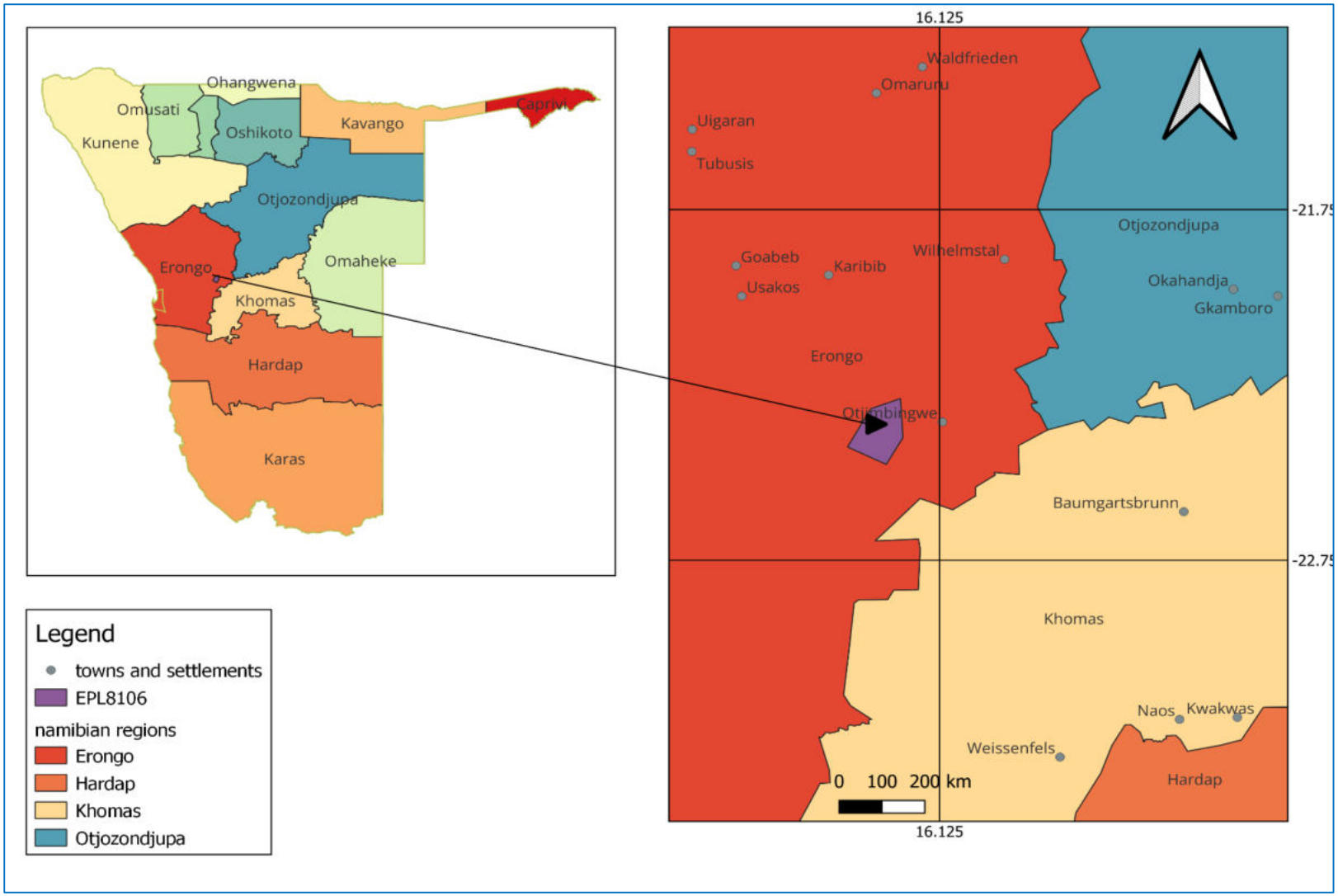


Figure 1: The location of the project area (EPL 8106) in Erongo Region.

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, non-nuclear fuels, base and rare earth metals on the target EPL 8106, the following exploration activities are envisioned:

1.2.1 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 Non-invasive exploration

Non-invasive exploration will be conducted through geophysical surveying, geological mapping, stream sediment/ soil sampling 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 trenching and drilling. The main geophysical techniques to be used will include a combination of:

- Airborne magnetic. The airborne magnetic data can be of importance in geophysical mapping when searching for suitable stratigraphy hosting base, rare and precious metals mineralization
- High-resolution helicopter-borne 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 through the use of 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. During geological mapping soil and stream sediment sampling as well as rock chirp sampling will be carried out. All ground geophysical surveys will require clearing of lines to enable the laydown of geophysical cables and equipment.

1.2.3 Invasive exploration

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. A sample for every one (1) meter of RC drilling will be captured and stored at a dedicated sample storage place. 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 in order 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 bulk sample of the material to be mined will be taken through blasting and bulk excavation to allow further metallurgical or chemical testing and refinement of the proposed mining procedures. Extraction of a bulk sample in this license is likely to involve excavation of a small open cut type of mine operation with the setting up of a pilot process plant.

1.2.4 Data processing and analysis

Based on all the data collected from the preceding techniques, and provided that 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.

1.3 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 have 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 peoples.
- The exploration exercise may potential lead to discovery of other mineral resources which would otherwise not be known to occur in the project area.

Employment preference will be afforded to previously disadvantaged Namibians.

1.4 The Proponent of the Proposed Project

The proposed project is being undertaken by **KEMA RESOURCES CC**. The details are as follows:

Table 1: The Project Proponent's details.

Proponent	Kema Resources CC
Country of Registration & Registration Number	Namibia CC / 2019 / 06397
Fax number	NONE
Contact number	+264 775 555 / 812 683 578
Postal Address	P. O. Box 4870 Windhoek, Namibia.

1.5 The Consultant

Outrun Consultants CC is a Namibian privately owned consultancy company doing 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 Rhodes University (South Africa), University of Zimbabwe (Zimbabwe), National University of Science and Technology (Zimbabwe), University of Namibia (Namibia) etc. 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 2: 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 Consultants carried out a full EIA 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.

1.7 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 for making of detailed studies of 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,
- The preparation of an environmental management plan for the project and finally.
- The compilation of the ESIA report.

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.

1.7.1 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.

1.7.2 Literature review

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

1.7.3 Information search from internet, journals, books and stakeholders

Examples of similar projects, i.e., water infrastructure construction and upgrade from both developed and mainly developing world were reviewed including their merits and demerits. Besides its operation, potential environmental impacts were also reviewed.

1.7.4 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.

1.7.5 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.

1.7.6 Public Involvement

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 health, environment 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.

1.7.7 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.

1.7.8 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.

1.7.9 Analysis of alternatives of the project – both economic and environmental

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

1.7.10 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.

1.7.11 Preparation of the ESIA Report

The completion of the various tasks assigned to the team members during the ESIA 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.

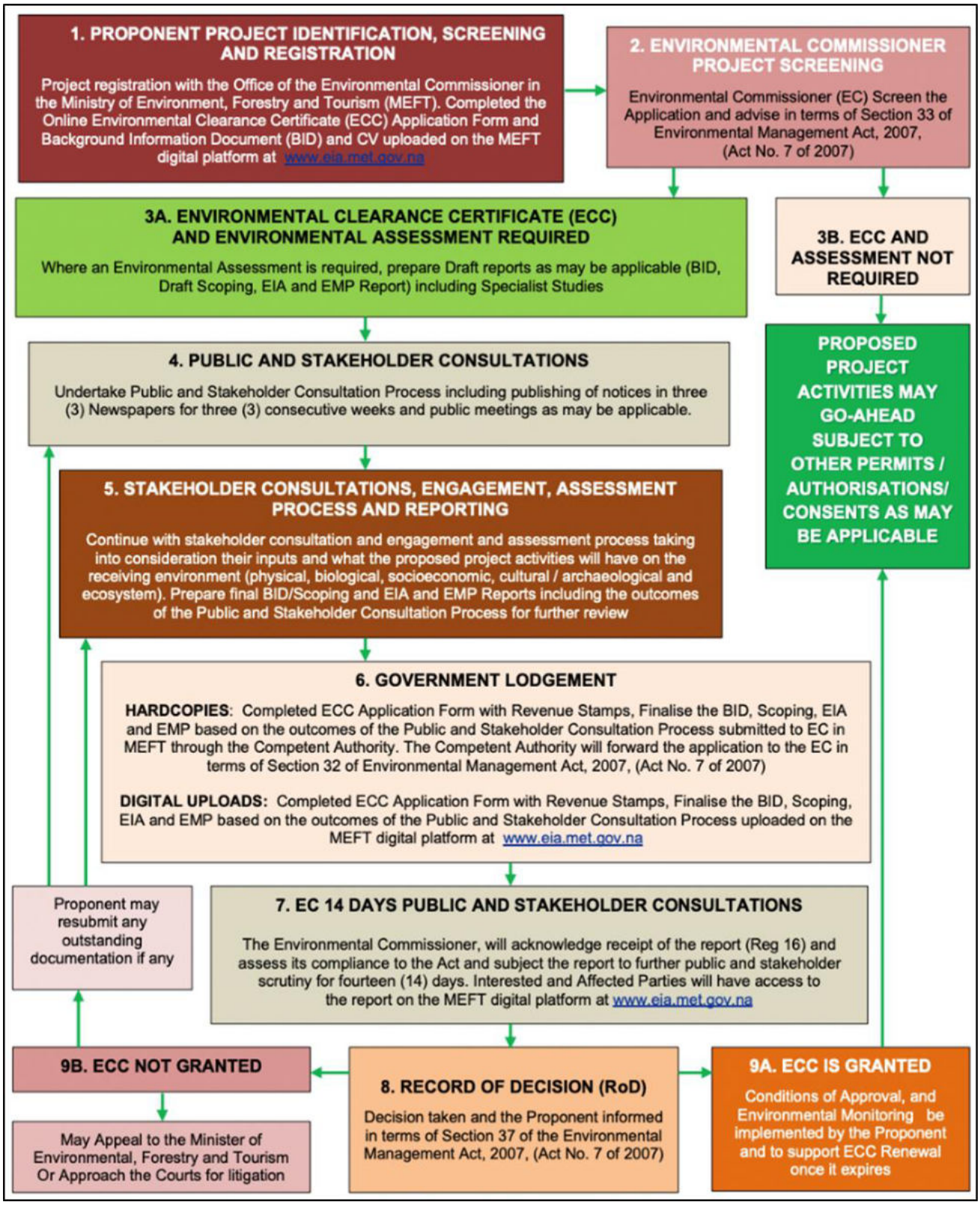


Figure 2: The ESIA Process flow.

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 construction of facilities for any process or activities which requires a license, right or other form of authorization, and the renewal of a license, right or other form of authorization, in terms of the Minerals (Prospecting and Mining Act), 1992.
- 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 legislative context within which the mineral exploration project is proposed including an identification of all legislation, 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 both the local (institutional), regional, national and international perspectives.

Table 3: National Legal and Policy Instruments Relevant to the proposed mineral exploration activities on EPL 8106

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 in order to comply with the Namibian Constitution, it is important for the Proponent to take embrace environmental principles in its policies and management throughout the project life cycle stages in order 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.	

3 PUBLIC CONSULTATION

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 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 Annexures (Appendices).

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

The relevant and applicable national, regional, and local institutions, 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 2, (Proof of Public Consultation Document).**

3.2 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 in this order:

3.2.1 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)**.

3.2.2 Public Notification (Newspaper Advertisements) and Communications

The notice of the ESIA Study for the proposed project activities were published in the following newspapers, as presented below.

Table 4: Environmental scoping announcements published.

Communication channel used	Date (s)
The New Era	22 September 2023
The New Era	29 September 2023
The Villager	22 September 2023
The Villager	27 September 2023

3.2.3 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 at the Tsoaxodaman Traditional Authority Hall at Otjimbingwe – 30 September 2023) are contained in the *"Proof of Public Consultation Document",* **Annexure 2.**

3.3 Feedback from Stakeholders and Interested & Affected Parties

Various issues were raised by I&APs (from the consultation meetings). These issues have been recorded and form the basis of the ESR and ESMP documents. The summary of these few key issues are presented in the Table below:

3.3.1 Summary of issues raised during the meeting

- There is no map showing the potentially affected areas around Otjimbingwe.
    - National Policy on Prospecting and Mining in Protected areas

- Employment opportunities should be extended to people of Otjimbingwe first before searching farther away.
- The IAPs wanted to know if there were any mining claims on the EPL?
- There was an appeal to the Proponent to also support the small-scale miner in the area both financially and technically.
- How long will the project take before it can start?

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 3) and in tabular form (Table 5) 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 3; 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 7).

Does the issue fall within the scope of the project and the responsibility of the Proponent – Kema Resources CC

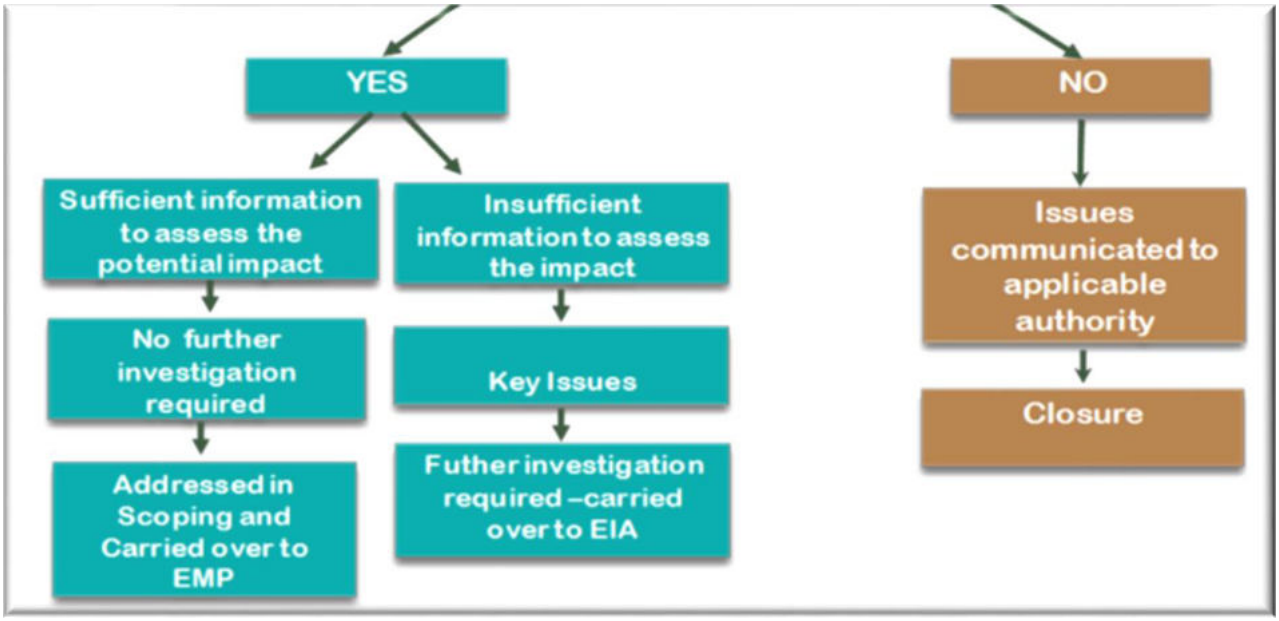


Figure 3: The screening process followed to determine key issues.

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 for the reason that potential positive economic benefits will be lost.

4.2.3 Routing Alternatives

The main ways routing alternatives were considered are that:

a. The exploration contractors utilizes existing roads or tracks to access the site as opposed to opening / clearing new routes.
b. The project area is less than 10 km from Otjimbingwe and exploration team can reside in the settlement 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 EPL8106. 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.

5 DESCRIPTION OF THE RECEIVING ENVIRONMENT

5.1 Baseline Studies

This chapter provides a description of the context 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 Claratal Weather Station maintained by SASSCAL WEATHERNET, (http://www.sasscalweathernet.org/) – Station I.D. 31210. The baseline is important to detect where changes that occur because of the proposed project in the future. The study area covers the entire footprint of the project components followed by a brief overview of the possible ways or manner in which the environment features may be affected (positively or negatively) by the proposed mineral exploration activities.

5.2 Climate

According to (John Mendelsohn, 2002), Namibia 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. Located at an elevation of zero meters (0 feet) above sea level, Otjimbingwe has a Subtropical desert climate (Classification: BWh). The district's yearly temperature is 20.83ºC (69.49ºF) and it is -3.63% lower than Namibia's averages.

5.3 Temperature

Temperatures may soar to over 40 degrees in summer, while they may also drop below zero in winter, (John Mendelsohn, 2002).

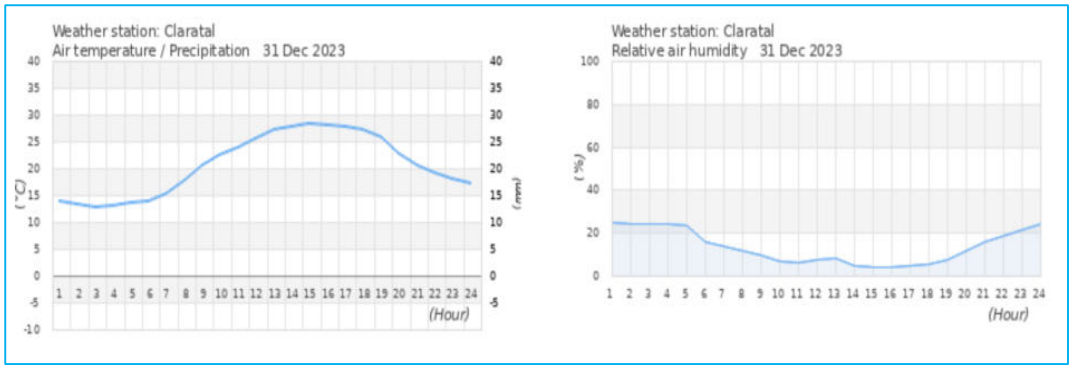


Figure 4: Average temperatures, precipitation and relative humidity characteristic of the project area. Source: Sasscal Weathernet Portal.

5.4 Precipitation

The rains usually fall in early January and last as late as first week of April as seasonal patterns dictate (John Mendelsohn, 2002). The area experiences very low rainfall, with an annual average rainfall of less than 9 mm.

5.5 Wind and Air quality;

The project area is characterised by windy conditions and has a 0 % chance of being calm as portrayed by the wind roses in figure 5 below. Prevailing winds blow from the North West 50 to 60 % of the time at least 60 % of the time, 4m/s average speed but much stronger, 6m/s less frequent from the NW and SW 20 to 30 % of the time, Fig. 5.

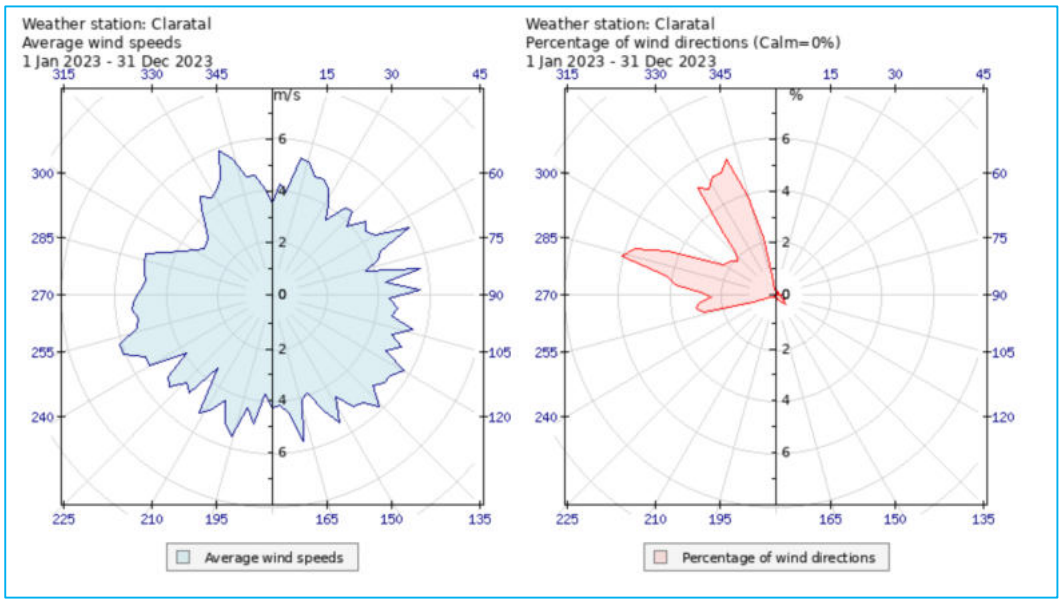


Figure 5: Wind speed and dircetion characteristic of the project area. Source: Sasscal Weathernet portal.

5.6 Soils of the project area

The project area, EPL 8106 is predominantly characterised by sand and gravels. Some of the areas are constituted by eutric regosols, lithic leptosols and petric calcisols 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. Calcisols are characterized by a layer of translocated calcium carbonate. They are usually well-drained soils with fine to medium texture, and they are relatively fertile because of their high calcium content.

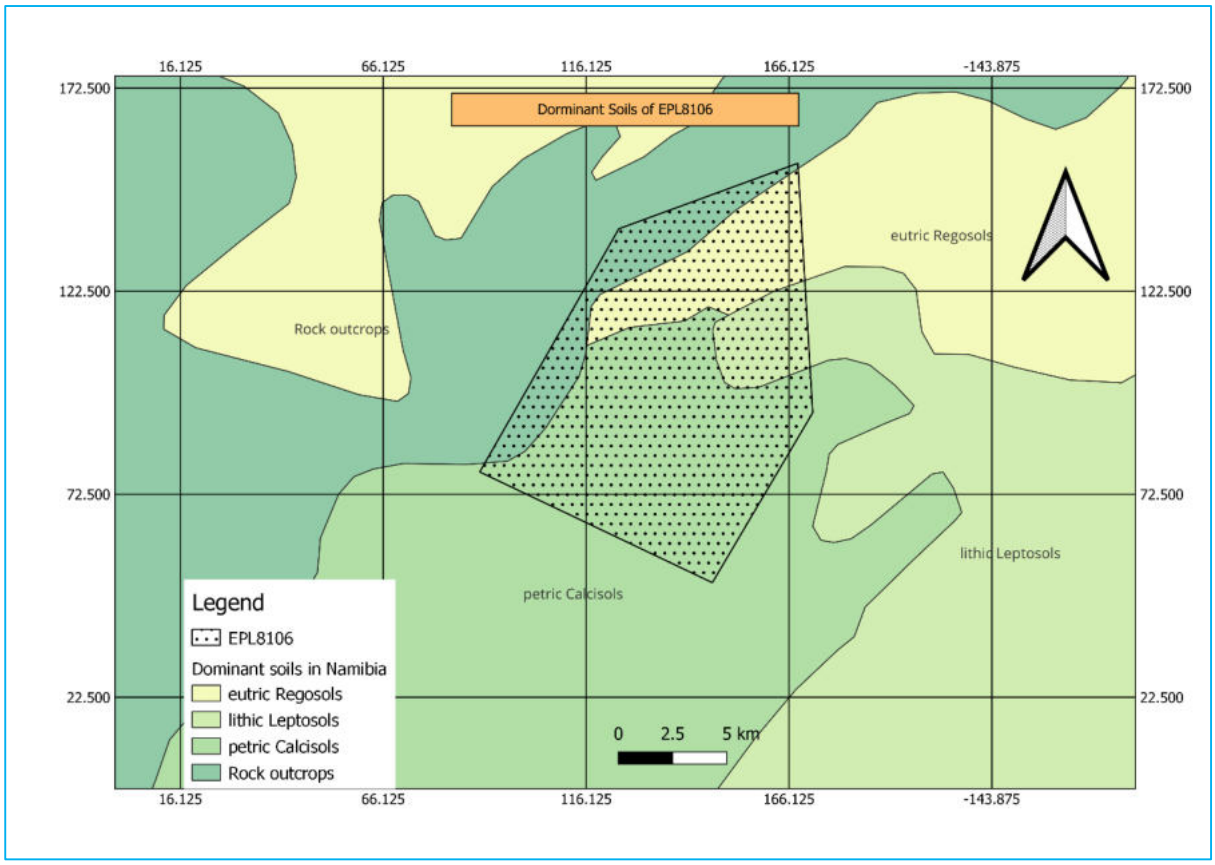


Figure 6: Dominant soil types covered by EPL 8106.

5.7 Noise;

Noise generated in the project area primarily comes from vehicles driving on the main road connecting Otjimbingwe to Karibib and ambient noise levels can be considered to be low. Sensitive noise receptors identified in the project area are the homesteads scattered in the EPL area.

5.8 Biodiversity: Fauna and Flora

5.8.1 Fauna

Namibia has a total of 217 species of mammals recorded, the most diverse groups are rodents (53 species), bats (43 species) and carnivores (35 species). Many tropical mammal species are associated with wetlands and forests, and have most of their populations to the north and east of Namibia. Much of the country has more than 60 species, while the Namib Sand Sea has the lowest diversity with just a tenth of the number of mammal species found in the richest areas of the northeast. We do not expect wildlife in the project area due to the high number of homesteads in the area but farther in the mountains.

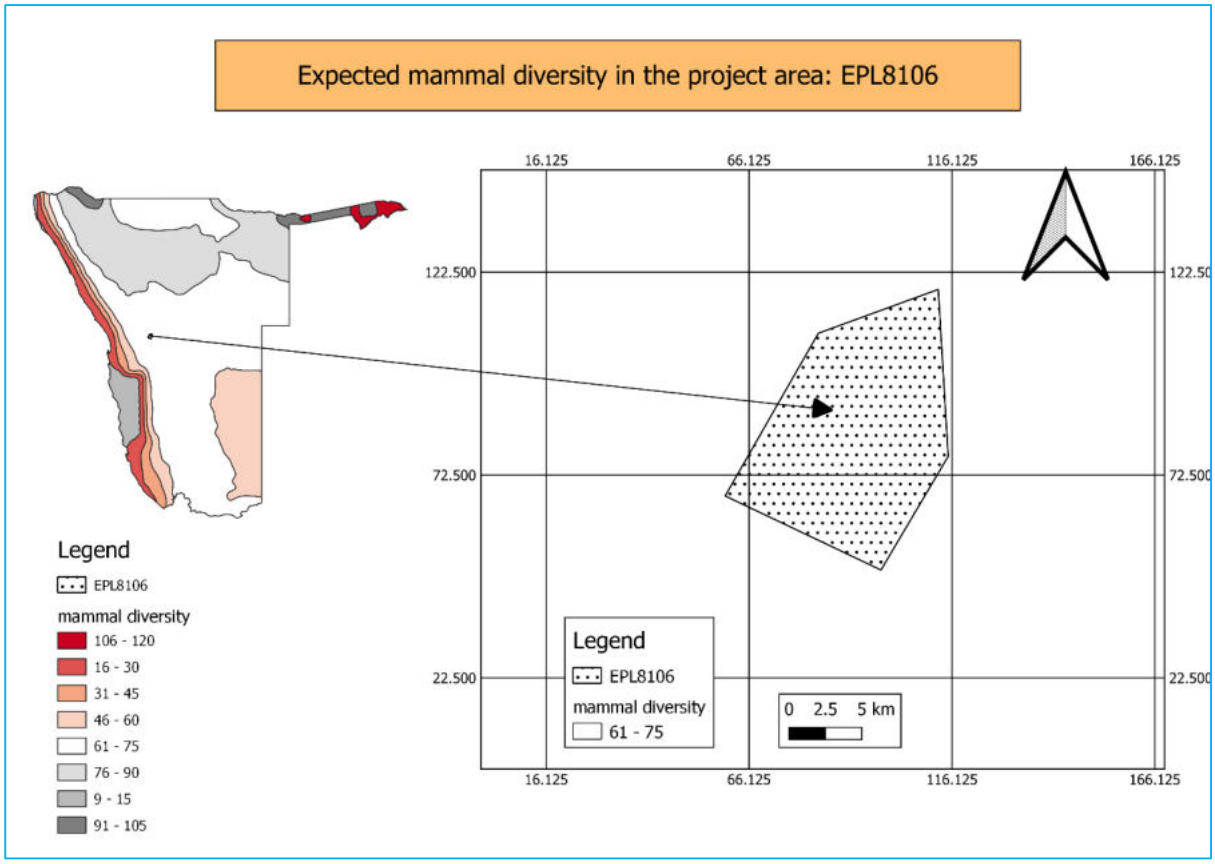


Figure 7: The location of EPL8106 relative to mammal diversity in Namibia. Source of map: Atlas of Namibia.

5.8.1.1 Birds

Namibia has a total of 676 bird species recorded and such high diversity is owed to the diverse nature of the habitats in Namibia, namely desert, savanna, grassland, riverine forests, wetlands, coastal shores and ocean. Namibia has 21 areas designated as 'important bird areas'. Some of the important bird areas are entire

national parks, such as Namib-Naukluft and Tsau//Khaeb. These are justified in that they support significant populations of endemic and near endemic birds, and are also important areas for raptors, such as threatened lappet-faced vultures and secretary birds.

Many of these important bird areas are attractive tourist destinations, offering the exhilaration of wilderness and wildlife of undisturbed natural areas, and provide important economic returns to the country. Seventy-eight of Namibia's bird species are on the IUCN's Red list, indicating significant threats to these species' survival. Threats arise predominantly from four main impacts of human activities: degradation of habitats such as wetlands, savannas and forests; poisoning of scavengers; overfishing and destructive fishing methods in the ocean; and collisions with power lines, (https://atlasofnamibia.online/chapter-7/terrestrial-wildlife).

5.8.2 Flora

The project area is characterised by Tree and shrub savanna vegetation on the North eastern part of the EPL while the South and Western areas are typically Nama Karoo Biome. The tree and shrub savannah area is mainly covered by grasses and an upper layer of large shrubs and trees. The Nama karoo is dominated by dwarf shrubs, grasses, geophgytes and herbs with varying densities or abundance.

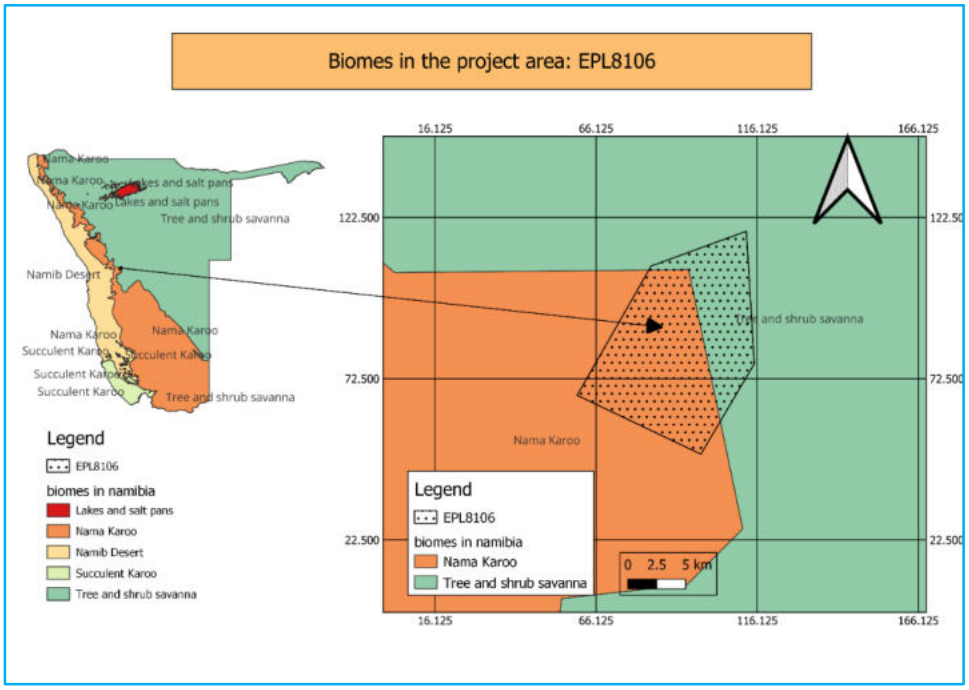


Figure 8: Dominant biomes on EPL 8106.

5.9 Land-use in the project area

The project area is predominantly an agricultural and tourism on freehold land area in the south and western part of the licenced area. The North Eastern portion covers a resettlement farm occupied by livestock farmers that concentrate their efforts in rearing cattle, sheep and goats for subsistence. There is one privately owned nature reserve which is in the Southern part of the EPL, the Tsaobis Leopard Park which offers accommodation, campsites, 4 x 4 trails etc. The Proponent should be guided by the policy on mining and prospecting in protected areas in this regard.

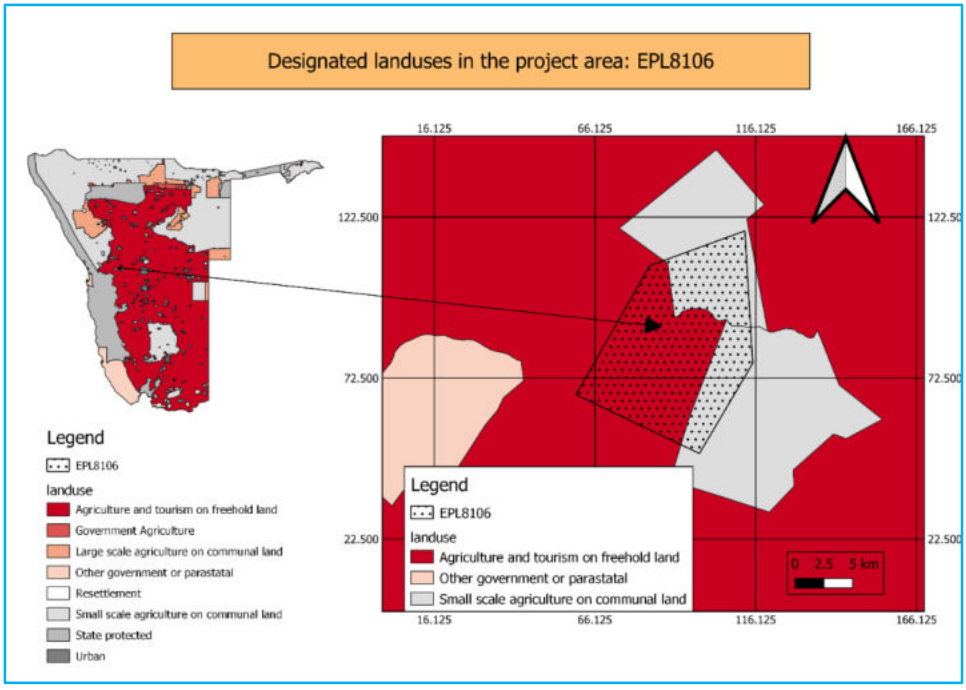


Figure 9: The location of EPL8106 in relation to designated land-use in the area.

5.10 Geology

Geologically, EPL 8106 is located within intercontinental central branch of the Damara Orogen, the Damaran Belt in the Southern Margin Zone (Miler, 2008). The Damara Belt comprises of a succession of predominantly sedimentary rock types that formed during the Neoproterozoic and early Palaeozoic periods in an intracontinental rift basin that was probably open to the ocean during parts of its early evolution. Hoffmann (1983), has described the Southern Margin Zone (SMZ) as 25 to 55 km wide belt of low-angle thrust sheets and southeast vergent fold nappes that consist of mainly

multiple deformed Damaran rocks overlying an intensely foliated pre-Damaran basement rocks.

Miller (2008) characterised the SMZ as a high pressure (approximately 10kbar), low temperature (approximately 600°C) kyanite metamorphic belt. To the south, the SMZ is bounded by the Frontal Thrust and to north by the northeast-southwest trending Gomab River Line.

Lithostratigraphically, the SMZ is underlain by pre-Damaran gneissic basement upon which the fluvial Nosib Group, the Hakos Group, and lower sequences of the Swakop Group have been deposited (Miller, 1983; Corner, 2008 in Excel Dynamic Solutions, 2020).

The siliciclastic Nosib group is subdivided in the upper Khan and lower Etusis Formations, which generally have an interfingring relationship (Smith, 1965; Henry, 1992). The Etusis Formation consists predominantly of pinkish to buff-coloured, medium- to coarse- grained meta-arkoses and micaceous/feldspathic quartzites and paragneisses. Conglomerate, mica schist, calc-silicate-bearing quartzite and marble occur locally (Smith, 1965; Downing, 1982; Lehtonen et al., 1993). The diversified rock types of the Swakop Group form the upper part of the Damara Supergroup, and are subdivided into the Ugab, Usakos and Navachab Subgroups. While the uppermost Kuiseb Formation of the latter is the youngest litholstratigraphic unit of the Damara Supergroup, is present throughout the area.

The Kuiseb Formation consists of mainly quartz-mica schist, with varying amounts of cordierite, garnet and Al-silicates. Calc-silicate rock and thin marble are locally interbedded with the biotite schists. Due to their low weathering resistance, the rocks are generally poorly exposed, while sedimentary structures tend to be obliterated by intense deformation and partial melting (EDS, 2020). Syn and post tectonic volcanic rocks of which the Donkerhuk granite is the major unit in the area have intruded the Neoproterozoic Damaran rocks.

The Donkerhuk granite, which has been dated at 523+- Ma (Blaxland et al, 1979), is exposed east of the Okahandja Lineament, and occurs as an extensive granite intrusion in the Damaran Oregon. The Donkerhuk granite occurs in various colours and textures ranging from greyish, fine-grained, leucocratic granite, and to coarse-grained pegmatite. Mineralogically, it consists of quartz, K-feldspar, muscovite and

biotite, with accessory garnet and apatite. Sillimanite occurs as a metamorphic product.

5.10.1 Local and property geology

Based on the work done by EDS (2020), the license area is covered by the Donkerhuk Granite, which consists of post-tectonic, locally pegmatitic, or migmatitic, monzogranite. The granite display variable degrees of foliation intensity. The rocks show evidence of two phases of Damaran deformation. Damaran beds composed of schists, marbles and quartzites intruded by a number of granitic bodies cover the greater part of the tenement area.

Folding and thrusting dominate structures in the EPL area. According to Miller (1983), NW-and NE-trending structures dominate D1 and D2 phases in the license area.

Rocks in the tenement area display evidence of upper greenschist-lower amphibolite facies regional metamorphism characterised by existence of perthitic exsolution in K-feldspar of felsic tuffs and the growth of white mica and biotite parallel to the gneissosity or penetrative schistosity in granitic gneisses and porphyritic rocks.

5.11 Exploration target mineral(s)

The exploration target mineral is the Rubicon and Helicon types Lithium Caesium-Tantalite (LCT) pegmatite deposits. The mineralised pegmatites contain coarse muscovite that is green rather than silvery, potassium feldspars that are white rather than pink; and accessory garnet, tourmaline, fluorite, and (or) cordierite. Fertile granites have high cesium, lithium, rubidium, tin, and tantalum, and low calcium, iron and magnesium. The unzoned pegmatites are characterised by disseminated Li, Ta, and Nb mineralisation, while the zoned, and poorly zon pegmatites contain higher Nb, Ta, and Li concentrations. The pegmatites occur in contacts of greenstone belts and granite terrane, mafic bodies and granite terrane in areas of extensive shearing in Pan-African greenschist facies, and metasediments within the tensional environment of half-graben structures.

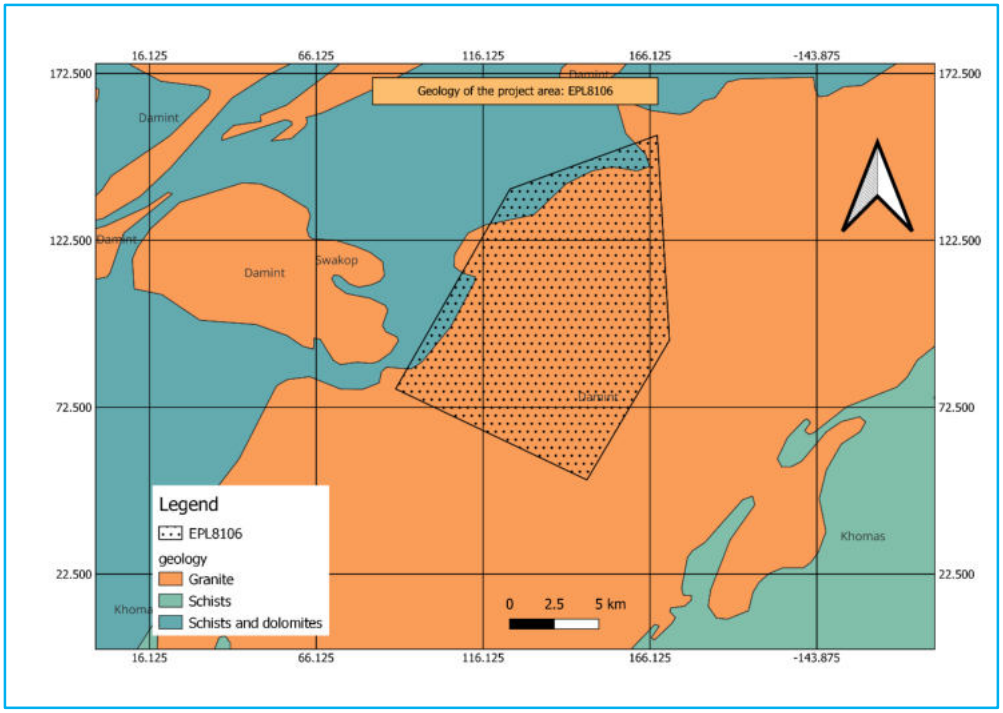


Figure 10: The geology of EPL8106. Source: Own map.

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 were conducted during the EIA Phase. The identified potential impacts were assessed following a recognized methodology to determine the magnitude of impact and whether or not the impact was considered significant and thus warrant further investigation. The assessment considered all stages of the proposed mineral exploration (desktop study, electromagnetic survey, trenching and drilling, bulk sampling).

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 5: 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%

6.3.1.1 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 6**) have been ranked for each potential impact, the impact significance of each is assessed using the criteria in **Table 7**. The impact significance will then be rated according to the significance classes (also presented in **Table 7**).

Table 6: 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 7: Environmental Impacts Identification and Evaluation.

IMPACT / ACTIVITY	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	AGRICULTURE	ARCHAEOLOGY	PUBLIC HEALTH & SAFETY	SOURCE OF INCOME	CULTURE & HERITAGE							
Vegetation Clearing	√	√	√	√	√	√	√		√		√		√	√	√	TDB	Short	Small	Local	Direct	Medium 25 - 75%	Minor (-)
Air pollution	√	√	√	√			√	√	√				√	√		TDB	Short	Moderate	Local	Direct	Medium 25 - 75%	Minor (-)
Soil pollution	√	√	√	√	√	√	√		√	√	√			√		TDB	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	√			√	√		√	√	√				√			TDB	Short	Small	Local	Direct	Medium 25 - 75%	Minor (-)
Drilling of boreholes	√	√	√	√	√				√	√	√		√	√		DB	Short	Small	Local	Direct	Medium 25 - 75%	Minor (-)
Hazardous Substances storage and handling	√	√			√		√						√			TDB	Permanent	Moderate	Local	Direct	Medium 25 - 75%	Major (+)
Excavation of trenches	√	√	√	√	√	√	√		√	√			√	√		T	Short	Small	Local	Direct	Medium 25 - 75%	Minor (-)
Drilling of cores	√	√	√	√	√	√	√		√	√			√	√		D	Short	Small	Local	Direct	Medium 25 - 75%	Minor (-)
Setting-up of workers camps	√	√	√	√	√	√	√		√	√			√	√		TDB	Short	Small	Local	Direct	Medium 25 - 75%	Minor (-)

IMPACT / ACTIVITY	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	AGRICULTURE	ARCHAEOLOGY	PUBLIC HEALTH & SAFETY	SOURCE OF INCOME	CULTURE & HERITAGE							
Employment Creation	√			√	√			√		√	√		√	√	√	TD	Temporary	High	Regional	Direct	High >75%	Moderate (+)
Land Use change	√	√	√	√	√	√		√	√		√	√		√	√	TDB	Permanent	Medium	Local	Direct	Medium 25 - 75%	Minor (-)
Occupational Hazards													√			TDB	Short	Small	Local	Direct	Medium 25 - 75%	Minor (-)
Pressure on local services and Resources	√		√	√	√			√	√	√	√			√		TDB	Short	Medium	Local	Indirect	Medium 25 - 75%	Minor (-)

Key: T – Trenching phase, D – Drilling phase, TD – Trenching and Drilling phases, TDB – Trenching, Drilling and Bulk sampling phases

6.4 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 8: Identified potential significant impacts to be into ESIA and ESMP.

Environmental / Social Aspect	***Project phase***	***Nature of Impact (+ / -ve)***	***Potential Impact***	***Assessment findings***
Ground water depletion	TDB	-ve	Unsustainable abstraction of exceeding yield	Water is a limited resources and abstraction should be guided by yield potential.
Ground water pollution	TDB	-ve	Ground water pollution due to: 1. Unprofessional drilling resulting in shallow brackish water breaking through to deeper cleaner levels, 2. Point source ground water pollution from refueling point. 3. Point source pollution from hazardous chemical spills.	Servicing of equipment and machinery should be conducted off the site on a concrete floored surface fitted with water collection and oil separator.
Occupational Hazards	TDB	-ve	Occupational health and safety hazards in the	Contractors to have SHE policy in place and enforced by a SHE Officer

			construction industry are common.	
Solid waste generation	TDB	-ve	The construction and operation activities will generate solid waste.	The proponent will develop a waste management plan to counter the impact of waste generation and dispersal on and project foot print area. All liter should be disposed of at the nearest designated disposal site (Proponent should arrange with Karibib Town Council).
Waste management (liquid)	TDB	-ve	Liquid waste management should conform to standards to alleviate potential ground water contamination through unprotected areas of aquifers.	Proponent should make use of Dixy toilets which should be emptied at a designated sewer system.
Noise pollution	TDB	-ve	Noise from equipment and machinery during exploration	Noise can be a nuisance to the quiet inhabitants and tourists from the quiet environment. 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. Notify the Tsaobis of planned work near the Nature Reserve.
Land Use change	TDB	+ve	Land use change during operation may be triggered	Create awareness and formulate implementation plans that harmonize mining and existing status quo.

			by discovery of economic mineral deposits resulting in increased economic activity.	
Air quality	TDB	-ve	The exploration activities generate dust and other particulate matter.	Excavation activities will discharge some form of air pollution into the atmosphere and marginally affect the ambient air quality of the vicinity. Dust should be included in the ESMP; due to the risk it may pose to human receptors during trenching, drilling and bulk sampling and mitigation measures will be assigned to it in the ESMP.

Key: T – Trenching phase, D – Drilling phase, TD – Trenching and Drilling phases, TDB – Trenching, Drilling and Bulk sampling phases

6.5 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 impact 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 8106.

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

Burke, A. (2004). *Wild Flowers of the Southern Namib.* Windhoek: Namibia Scientific Society.

Carruthers, J. (2008). Conservation and Wildlife Management in South African National Parks 1930s–1960s. *Journal of the History of Biology 41*, 203-236.

Christelis. G, S. W. (2011). *Groundwater in Namibia: An explanation to the Hydrological Map.* Windhoek: Department of Water Affairs.

Giess, W. (1998). A preliminery vagetation map of Namibia. *Dinteria*, 60 -65.

Greg Christelis, F. S. (2015, September). *GEF Transboundary Water Assessment Programme*. Retrieved from GEF Transboundary Water Assessment Programme: https://ggis.un-igrac.org/documents/1619/download

John Mendelsohn, A. J. (2002). Atlas of Namibia: A portrait of the Land and its People. *ResearchGate*.

Namibia, R. o. (2010, October 01). *Adaptation*. Retrieved from United Nations Development Programme Namibia: https://www.adaptation-undp.org/sites/default/files/downloads/namibia_nationalclimatechangepolicyfornamib.pdf

Namibia, R. o. (2021, December 6). *Law and Environmental Assistance Platiform*. Retrieved from United Nations Environment Programme: https://leap.unep.org/countries/na/national-legislation/forest-act-2001-no-12-2001

Raison. (2011, June 01). *E-Library.* Retrieved from Environmental Information Service Namibia: http://the-eis.com/elibrary/sites/default/files/downloads/literature/Cuvelai_poster_Vegetation_lowres.pdf

Sorensen, P. (2013). The massive Ohangwena II aquifer in northern Namibia. *International Journal of Environmental Studies*, 173 to 174. Retrieved from https://www.tandfonline.com/doi/full/10.1080/00207233.2013.779149?scroll=top&needAccess=true

Weber, E. A. (2016, February 01). *Research*. Retrieved from Green Policy Platiform: https://www.greengrowthknowledge.org/research/equator-principles-do-they-make-banks-more-sustainable

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

10 ANNEXURE 2: PROOF OF PUBLIC CONSULTATION DOCUMENT

11 ANNEXURE 3: CONSULTANT'S CVS

CV for Josiah T. Mukutiri

1. **Proposed Position:** Lead Environmental Assessment Practitioner
2. **Name of Firm:** Outrun Consultants cc
3. **Name of Staff:** Josiah T. Mukutiri
4. **Date of Birth:** **28 March 1976**
5. **Nationality:** Zimbabwean

Membership in Professional Bodies:

Member of International Association for Impact Assessment (IAIA)

Member of Environmental Assessment Professional of Namibia (EAPAN)

Key Qualifications:

Institution [Period]	Degree(s) or Diploma(s) obtained:
Aldersgate College (Philippines)	Master in Business Administration (MBA)
University of Zimbabwe (UZ), (01/2000 – 12/2003)	BSc Honours in Applied Environmental Science (HAES)

Additional Qualifications:

i. Assessing and Valuing Ecosystem Services For Policy Impacts in The Context Of A Biodiversity Economy-GIZ Resource Mobilisation Project, Namibia
ii. Leadership skills, Kellogg Foundation – Southern Africa
iii. Training and Facilitation skills, African Intellectual Resources
iv. Research Skills, Woburn Business School
v. Waste Management and Pollution Control, University of Zimbabwe

PROFESSIONAL EXPERIENCE

Languages:

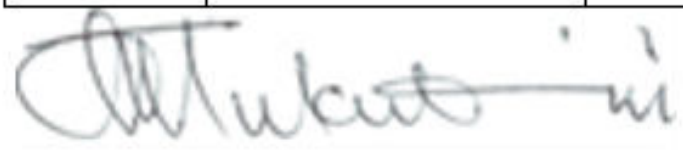
Language	Reading	Speaking	Writing
English	Excellent	Excellent	Excellent
Shona	Excellent	Excellent	Excellent
Afrikaans	Poor	Poor	Poor

CERTIFICATION

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe my qualifications, my experience and me.

Employment record relevant to the assignment:		
Period	**Employing organization and your title/position. Contact info for references**	**Summary of activities performed relevant to the Assignment**
04/1997 – 07/1999	Broken Hill Proprietary (BHP)- Full time employment **Senior Process Controller**	*Base Metal Refinery process control* Efficient recovery of base metals and platinum group of metals. Waste management and pollution control Updating sampling protocols Implementation occupational health, safety and environmental standards Conducting internal occupational health, safety and environmental audits.
01/2000 – 12/2003	Undergraduate Student	Student pursuing Bachelor's degree in Applied Environmental Science Honours.
01/2003 – 12/2006	**University of Zimbabwe** **Research and Teaching Assistant** **References** Professor S. Mpepereki Dept. of Soil Science & Agricultural Engineering Faculty of Agriculture Email: smpepe@agric.uz.ac.zw	*Research and Teaching Assistant* Conducting first and second year lectures, field and laboratory practicals Grading examinations, assignments and practicals Invigilating exams
2010 – 12 / 2013	**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	The design and installation of new waste management facilities at Katutura hospital Intermediate, Windhoek, Namibia. Characterisation and developing a waste management plan for Intermediate Hospital Katutura and all other health facilities in Khomas Region. Developing broad specifications of equipment requirements for the proposed waste management facilities. Technical evaluation of bids
2010 – 12 / 2013	**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).
2012	Africa Humanitarian Action (AHA) contract	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

	Outrun Consultants cc **Environmental Consultant** For references: Ms. Aynalem Tekle-Giogis, Country Representative Tel.: +264 61 235 107 Email: aha@africaonline.com.na	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.
	EIF – Climate Change Partnership Programme	Training of small scale farmers in Etunda Irrigation Scheme.Training covered, preseason budgeting, land preparation, Conservation agriculture, planting, Integrated Pest Management, Harvesting, grading and handling of fresh produce.
Since 2017 to date	Social Security Commission - DF **Outrun Consultants cc** **Business Consultant** For references: Ms. Mungunda, Managing CEO Tel.: +264 811 457211	Apparising business plans for Small Scale Farmers in Otjiwarongo -Otjivegi and Hano Foundation in Okatjoruu
2017 – 2018	Ministry of Land Reform and Resettlement – Programme for Communal Land Development (PCLD) funded by EU – Basket Fund Socio-Economist Consultant For References: Jericho Mulofwa Programme Manager Tel: +264 812 706 404 Email: jericho.mulofwa@gmail.com	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.



Signature

03 January 2023

Date (Day/Month/year)