CONTINENTAL LITHIUM AFRICA

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REPORT:

EXPLORATION ACTIVITIES ON EPL 7574, //KHARAS REGION, NAMIBIA – SCOPING REPORT PLUS IMPACT ASSESSMENT

PROJECT NUMBER:	ECC-139-449-REP-04-A
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Project Name:	Exploration activities on EPL 7574, //Kharas Region, Namibia – Scoping report plus impact assessment
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EXECUTIVE SUMMARY

Environmental Compliance Consultancy (ECC) has been contracted by Karas Lithium Resources (Pty) Ltd. (Karas Lithium), a Namibian company and subsidiary of Continental Lithium Africa Development Corporation., to undertake an environmental and social impact assessment (ESIA). Karas Lithium is conducting an ESIA for the proposed mining of lithium, an industrial mineral, on Exclusive Prospecting Licence 7574 (EPL 7574), located south of Karasburg near the Orange River. The EPL overlaps farm Pelladrift, Oranje Fall, Kambreek and Pelgrimrust and can be accessed via the B3 to Karasburg and then the C10.

Karas Lithium is the proponent for the proposed Project, referred to as "the Proponent". The proposed Project will Ground truthing to all defined target areas (pegmatite bodies), rock chips (grab) sampling, geological mapping, soil sampling downhill of orebodies. Channel sampling and geochemical analysis of samples will be collected and analysed by assay laboratories. To define the mineralization below the surface cover, either a Reverse Circulation (RC) technique or diamond core (DD) drill survey will be used.

In terms of the Namibian Environmental Management Act, 2007 and its regulations, the Ministry of Mines and Energy (MME) is the competent authority for the proposed Project. Mining operations trigger listed activities in terms of the Act, and as such, requires an environmental clearance certificate.

SCREENING PHASE

The screening phase determined that the most likely potential environmental and social impacts could include:

- Surface and groundwater impacts
- Habitat alteration and impacts on biodiversity.
- Visual impacts affecting the sense of place
- Impacts on air quality
- Impacts on heritage sites and artifacts

SCOPING PHASE

The objective of the scoping phase was to obtain a thorough understanding of the biophysical and socioeconomic environment in which the Project is located, often using baseline and specialist studies. It also provided an opportunity for the public to have input into the scope of the assessment. The following was considered during the preparation of the scoping report:

- Desktop and literature research

EPL 7574 is situated south of Karasburg and southeast of Velloorsdrift, approximately 12 km north of the Orange River and South Africa. The region has mixed agriculture (Livestock and game farms) and exploration activities. The regional geology of this area consists mainly of

the Namaqua Metamorphic Complex Group. The Namaqua Metamorphic Complex Group is a Mesoproterozoic low-pressure, granulite facies belt situated on the south-western margin of the Kaapval Craton and consists of various types of granitoids intercalated with metapelites and calc-silicate rocks. The topography of the Project site is relatively mountainous and hilly. The EPL area overlays the Orange Groundwater Basin. The groundwater quality for this area is ranked as Group D. Water in Group D is characterized as having exceedingly high levels of total dissolved solids (TDS), sulphates and fluoride, which makes it not suitable for human consumption.

The EPL is situated within the Karas dwarf shrubland in the Nama-Karoo. The dominant type is grasslands and low shrubs. The overall fauna diversity for this area is relatively low compared to other parts of the country. The //Kharas Region is the southernmost and least densely populated of the 14 regions of Namibia. The region has a well-developed energy and water network and an advanced postage and telecommunications system that links villages and towns with the rest of the country and the world at large. Water is obtained from the Orange River and a few boreholes on the farms. Whereas in the nearest major town electricity is supplied by NamPower. Excess water for irrigation is often obtained from the Orange River.

The following table summarises the outcomes of the impact assessment of the key aspects and the potentially significant impacts that could arise from the exploration activities. The significance rating is provided after the mitigations have been considered.

Aspect	Potential impact	Significance with mitigation
Water (surface - and groundwater);	Hydrocarbon leaks and spills could enter the Orange Groundwater Basin (aquifer) Causing contamination	Minor (3)
	Discharge and infiltration of non-contained wastewater	Minor (3)
	Waste items and litter can pollute drainage channels	Low (1)
Soil	Pollution of soil from spillage of hydrocarbons and hazardous waste	Low (1)
	Loss of soil quality due to mixing of earth matter, trampling and compaction	Low (1)
Visual	The creation of access roads and tracks up mountains will tarnish the scenic environment	Minor (4)
Noise and vibration	Ambient noise and vibration caused by moving or stationary machinery and equipment (e.g., drill rigs, generators, vehicles, aeroplanes)	Low (1)

Aspect	Potential impact	Significance with mitigation
	Resident and nesting organisms such as reptiles can be disturbed, injured or killed	Low (1)
Terrestrial biodiversity	Alien species and weeds can be introduced to the area	Low (1)
	Loss of grazing and organisms dying from a veld fire	Low (1)
	Loss/alteration of terrestrial habitats and loss of species	Low (1)
Community	The perceived impact from surveying activities on wild animals, livestock and humans	Low (1)
	The presence of exploration team could be blamed for stock theft and poaching	Low (1)
Air quality	Air quality, visual disturbance and loss of sense of place from dust plumes	Low (1)
Heritage	Potential damage to cultural heritage sites and artifacts	Minor (4)

Impacts concerning airborne dust are expected to be limited to vehicular traffic and drilling activities. There will be some release of exhaust fumes from machinery that will impact the immediate vicinity, but this will be of short duration. Noise impacts include those associated with drilling and other machine noise, which could be a disturbance to immediate neighbours, but this will be short in duration as well. The analysis of the impacts and the identification of mitigation and management methods, concludes that the likely significance of effects on humans from the cumulative impacts of physical disturbance, noise, dust and emissions is expected to be minor with a temporary qualitative reduction in the sense of place.

It was determined that the impacts from noise are considered to be of low significance. A major mitigation measure for the exploration activities will be that all activities will be undertaken during daylight hours.

Continual engagement with the stakeholders must be undertaken by the Proponent to identify any concerns or issues, and additional appropriate mitigation and management measures must be agreed upon and implemented.

The overall potential impact of this proposed Project is not considered significant as it does not exceed recognised levels of acceptable change, nor will it threaten the integrity of the receptors. The assessment is considered to be comprehensive and sufficiently identifies the potential impacts, and it is concluded that no further assessment will be required. The Draft

EMP provides the necessary mitigations and management measures required to reduce potential impacts to accepted levels.

The phases of the ESIA are provided in Figure 1.

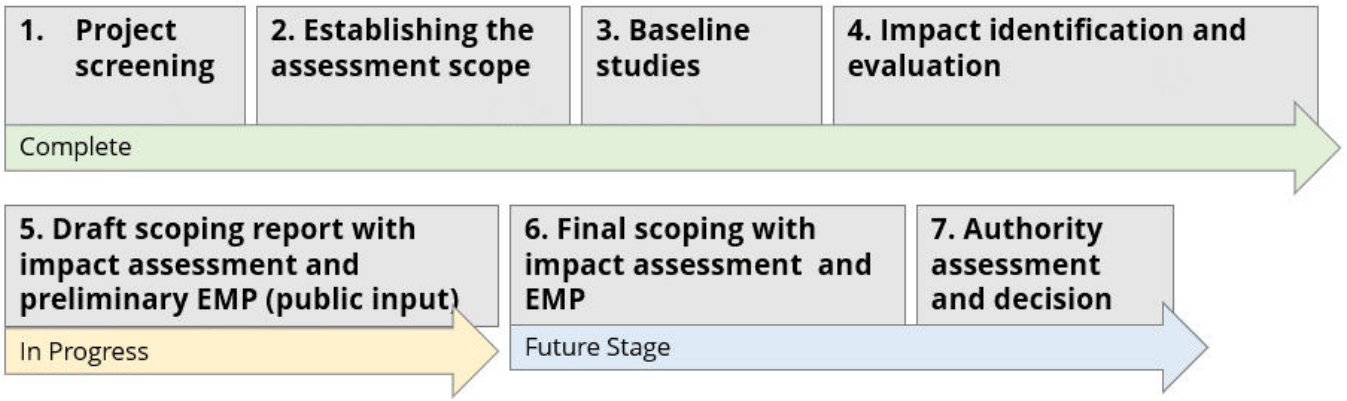

Figure 1 – Simplified Namibian ESIA process noting Karas Lithium EPL 7574 progress.

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TERMS AND ABBREVIATIONS

TERM OR ABBREVIATION	DESCRIPTION
<	The less than symbol means that the number on the left is less than the number on the right
˚C	degrees Celcius
%	percentage
BID	Background information document
ECC	Environmental Compliance Consultancy (Pty) Ltd
cm	A centimeter is a unit of displacement (distance or length)
CIA	Cumulative impact assessment
CO	carbon monoxide
CO_2	carbon dioxide
Competent Authority	Government Ministry that assists the MEFT in assessing a project and issuing a record of decision
Corp.	corporation
CSA	CSA Global - mining industry consultants
DD	diamond drilling
DEA	Directorate of Environmental Assessment
DWA	Department of Water Affairs
E	endemic
EAP	environmental assessment practitioner
ECC	Environmental Compliance Consultancy
ECC	environmental clearance certificate
EHS	environmental health and safety
EIA	environmental impact assessment
EMA	Environmental Management Act
EMP	environmental management plan
ENE	East northeast
EPL	exclusive prospecting licence
ESIA	environmental and social impact assessment
GDP	gross domestic product
GG	government gazette
GN	government notice
GROWAS	groundwater survey
ha	hectares
I&APs	interested and affected parties
i.e.	that is
IFC	International Finance Corporation
IUCN Red List	The International Union for Conservation of Nature Red List of Threatened Species
km/h	Kilometre per hour
Ltd.	Limited
Localised plant endemism	That plant species exist naturally only in one geographic place, restricted to a specific area.
Mesoproterozoic	A geologic era that occurred from 1,600 to 1,000 million years ago.

TERM OR ABBREVIATION	DESCRIPTION
m	metre
m/s	metre per second
m^3	cubic metres
m^3/day	cubic metres per day
Ma	million years ago
MAWLR	Ministry of Agriculture, Water and Land Reform
MEFT	Ministry of Environment, Forestry and Tourism
mg/m2/day	milligrams per metre squared per day
ML	mining licence
mm	millimetre
Mm^3	million cubic metres
MME	Ministry of Mines and Energy
MRE	Mineral Resource Estimates
No.	number
N$	Namibian dollar
Na	sodium
NDP	national development plan
NHC	National Heritage Council
NSA	National Statistics Agency
NSR	noise-sensitive receptor
NT	near-threatened
ORKCA	Orange River Karoo Conservation Area
PEA	preliminary economic assessment
Project	Karas Lithium EPL 7574 Project
Proponent	Karas Lithium Resources (Pty) Ltd.
Pty	proprietary
QGIS	free and open-source cross-platform desktop geographic information system application that supports viewing, editing, printing, and analysis of geospatial data
RC	Reverse circulation
REE	Rare Earth Elements
Reg	registration
RH	Relative humidity
SOP	Standard operating procedure
SW	Southwest
TDS	total dissolved solutes
W	West
WSW	West Southwest

1 INTRODUCTION

1.1 COMPANY BACKGROUND

Environmental Compliance Consultancy (ECC) has been engaged by Karas Lithium Resources (Pty) Ltd (Karas Lithium) to conduct an environmental impact assessment for their proposed exploration activities on exclusive prospecting licence (EPL) 7574 in the //Kharas Region, Namibia. The EPL is located in the Karasburg district, south of Karasburg near the Orange River. The EPL overlaps farm Pelladrift, Oranje Fall, Kambreek and Pelgrimrust and can be accessed via the B3 to Karasburg and then the C10, as shown in Figure 2.

The Proponent has focused on the acquisition and development of potential lithium resources. The EPL was originally granted in 2020, to explore for base and rare metals, dimension stones, industrial minerals (lithium and tantalum), non-nuclear fuels, precious metals, and precious stones. Non-invasive exploration such as remote sensing and reconnaissance began in 2022.

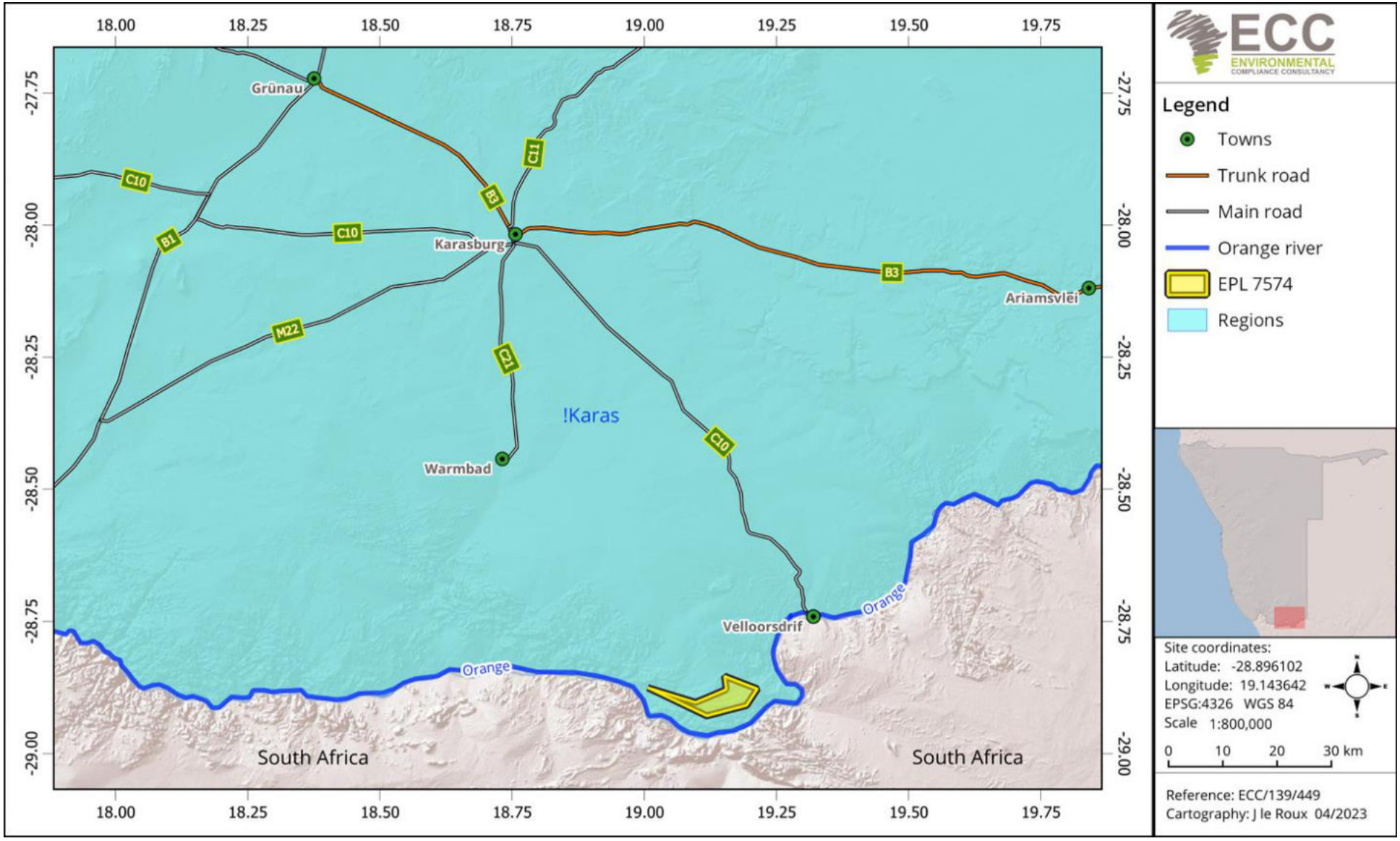


Figure 2 – Project location and regions

1.2 PURPOSE OF THE SCOPING REPORT

An environmental and social impact assessment (ESIA) has commenced in accordance with the requirements of the Environmental Management Act, No. 7 of 2007 (EMA 2007) and its regulations. The purpose of this report is to present the findings of the scoping study phase that forms part of the larger ESIA process.

The draft scoping report with impact assessment summarises the prescribed ESIA process followed, provides information on the baseline biophysical and socioeconomic environments, and project description details, outlines the methodology for the assessment phase, assesses the potential impacts of the proposed Project and provides a rating of the impact before and after mitigation and management measures have been provided and prepares a draft environmental management plan (EMP).

ECC's terms of reference for the assessment are strictly to address potential impacts, whether positive or negative, and their relative significance, explore alternatives for technical recommendations and identify appropriate mitigation measures.
This report provides information to the public and stakeholders to aid in the decision-making process for the proposed Project. The objectives are to:

- Describe the proposed activity and the site on which the activity is to be undertaken, and the location of the activity on the site;
- Describe the environment that may be affected by the activity;
- Identify the laws and guidelines that have been considered in the assessment and preparation of this report;
- Provide details of the public consultation process;
- Describe the need and desirability of the activity; and
- Report the assessment findings, identifying the significance of effects, including cumulative effects, and effective and feasible mitigation measures.

In addition to the environmental assessment, a preliminary Environmental Management Plan (EMP) (Appendix A) is also required in terms of the Environmental Management Act, No. 7 of 2007. A preliminary EMP has been developed to provide a management framework for the planning and implementation of exploration activities. The EMP provides exploration standards and arrangements to ensure that the identified environmental and social impacts are mitigated, prevented, and/or minimised as far as reasonably practicable and that statutory requirements and other legal obligations are fulfilled.

1.3 THE PROPONENT OF THE PROPOSED PROJECT

The Proponents' details are provided in Table 1.

Table 1 – Proponent's details

Company Representative:	Contact Details:
Mr William Morrell Director	Karas Lithium Resources (Pty) Ltd Private Bag 12012 Ausspannplatz Windhoek william@continentalafricali.com +264 81 703 6882 / +27 (78) 663 9653

1.4 ENVIRONMENTAL AND SOCIAL ASSESSMENT PRACTITIONER

The report has been prepared by Environmental Compliance Consultancy Pty Ltd (ECC) (Reg. No. 2022/0593) on behalf of the Proponent.

Authored by ECC employees with no material interest in the report's outcome, ECC maintains independence from the Proponent and has no financial interest in the Project apart from fair remuneration for professional fees. Payment of fees is not contingent on the report's results or any government decision. ECC members or employees are not, and do not intend to be, employed by the Proponent, nor do they hold any shareholding in the Project. Personal views expressed by the writer may not reflect ECC or its client's views. The environmental report's information is based on the best available data and professional judgment at the time of writing. However, please note that environmental conditions can change rapidly, and the accuracy, completeness, or currency of the information cannot be guaranteed.
All compliance and regulatory requirements regarding this report should be forwarded by email or posted to the following address:

Environmental Compliance Consultancy
PO Box 91193, Klein Windhoek, Namibia
Tel: +264 81 669 7608
Email: info@eccenvironmental.com

1.5 ENVIRONMENTAL REQUIREMENTS

The Environmental Management Act, 2007, and its regulations stipulate that an environmental clearance certificate is required before undertaking any of the listed activities that are identified in the Act and its regulations. Potential listed activities triggered by the Project are provided in Table 2.

Table 2 – Activities potentially triggered by the Karas Lithium Project

Source: Environmental Management Act, 2007, and its regulations

Listed activity	As defined by the regulations of the Act	Relevance to the project
Waste management, treatment, handling, and disposal activities	(2.2) Any activity entailing a scheduled process referred to in the Atmospheric Pollution Prevention Ordinance, 1976. (2.3) The import, processing, use and recycling, temporary storage, transit or export of waste	– Waste generated, which will be mainly solid waste and general waste during the exploration phase will be removed and will be disposed of at the nearest licensed municipal landfill site. – A portable toilet or chemical toilets will be used during exploration activities.
Mining and quarrying activities	(3.2) Other forms of mining or extraction of any natural resources whether regulated by law or not. (3.3) Resource extraction, manipulation, conservation and related activities.	– The proposed project requires an environmental clearance from DEA/MEFT for the extraction of industrial minerals. – Minerals (soil and sand), and industrial minerals will be sourced within the project's footprint through bulk sampling. – The Proponent will also undertake geochemical surveys, geophysical surveys, airborne surveys and recirculation and diamond core drilling.
Forestry activities	(4.) The clearance of forest areas, deforestation, aforestation, timber harvesting or any other related activity that requires authorisation in terms of the Forest Act, 2013.	– During operations, limited vegetation clearing will be required as the Project develops. The necessary permits will be acquired as needed.
Water resource development	(8.1) The abstraction of ground or surface water for industrial or commercial purposes	For the drilling of exploration boreholes, groundwater may need to be abstracted or surface water will be sourced.
Hazardous substance treatment, handling and storage	(9.1) The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.	Portable toilets, or chemical toilets will be used during exploration activities.

2 APPROACH TO THE ASSESSMENT

2.1 PURPOSE AND SCOPE OF THE ASSESSMENT

This assessment aims to determine which impacts are likely to be significant, to scope the available data and identify any gaps that need to be filled, to determine the spatial and temporal scope, and to identify the assessment methodology.

The scope of the assessment was determined by undertaking a preliminary assessment of the proposed Project against the receiving environment, obtained through a desktop review and available site-specific literature.

2.2 THE ASSESSMENT PROCESS

The ESIA methodology applied to this assessment has been developed using the International Finance Corporation (IFC) standards and models, in particular, Performance Standard 1, 'Assessment and management of environmental and social risks and impacts' (International Finance Corporation, 2017) (International Finance Corporation, 2012), which establishes the importance of:

- Integrated assessment to identify the environmental and social impacts, risks, and opportunities of Projects;
- Effective community engagement through disclosure of Project-related information and consultation with local communities on matters that directly affect them; and
- The Proponent's management of environmental and social performance throughout the life of the Project.

Furthermore, the Namibian Draft Procedures and Guidance for ESIA and EMP (Republic of Namibia, 2008), as well as international and national best practices, and over 25 years of combined EIA experience, were also drawn upon in the assessment process. This impact assessment is a formal process in which the potential effects of the Project on the biophysical, social, and economic environments are identified, assessed, and reported so that the significance of potential impacts can be taken into account when considering whether to grant approval, consent, or support for the proposed Project.

2.3 SCREENING OF THE PROJECT

The first stages in the ESIA process are to register the Project with the DEA/MEFT (completed on the 4th of April 2023) and undertake a screening exercise to determine whether it is considered a listed activity under the Environmental Management Act, No. 7 of 2007 and associated regulations, and if significant impacts may arise from the Project. The location, scale, and duration of Project activities will be considered against the receiving environment. The full ESIA process is shown in Figure 3.

The proposed Project is a listed activity and potential impacts could occur. Thus, it was concluded that a scoping report with an impact assessment would suffice for the exploration project and that a preliminary EMP would be submitted with the scoping report as part of the application process for the environmental clearance certificate.

1. Project screening

Complete

The first stages in the ESIA process are to undertake a screening exercise to determine whether the Project triggers listed activities under the Environmental Management Act, 2007, and its regulations. The screening phase of the Project is a preliminary analysis, in order to determine ways in which the Project might interact with the biophysical, social, and economic environments.

Stakeholder engagement:
- Registration of the project
- Preparation of the BID

2. Establishing the assessment scope

Complete

Where an ESIA is required, the second stage is to scope the assessment. The main aim of this stage is to determine which impacts are likely to be significant; to scope the available data and any gaps that need to be filled; to determine the spatial and temporal scope; and to identify the assessment methodology.

The scope of this assessment was determined through undertaking a preliminary assessment of the proposed Project against the receiving environment. Feedback from consultation with the public and the Proponent informs this process. The following environmental and social topics were scoped into the assessment, as there was the potential for significant impacts to occur. Impacts that are identified as potentially significant during the screening and scoping phase are taken forward for further assessment in the ESIA process. These are:

SOCIOECONOMIC ENVIRONMENT
- Visual impacts on sense of place

BIOPHYSICAL ENVIRONMENT
- Noise and air quality, including dust emissions
- Surface and ground water
- Heritage and culture
- Biodiversity
- Soils

The following topics were scoped out of the ESIA, and they are therefore not discussed further in this report.
- An assessment of safety impacts or risks associated with exploration are not included within the scope of this assessment, and will be addressed by the Proponent in a site-specific safety management plan.

3. Baseline studies

Complete

A robust baseline is required, in order to provide a reference point against which any future changes associated with a Project can be assessed, and to allow suitable mitigation and monitoring to be identified.

The region and general area have been studied for various projects and assessments. This literature was available to be referenced. The Project site-specific area has been studied as part of the ESIA process, and the following has been conducted as part of this assessment:
- Field surveys
- Desktop studies
- Consultation with stakeholders

The environmental and social baselines are provided in the scoping study.

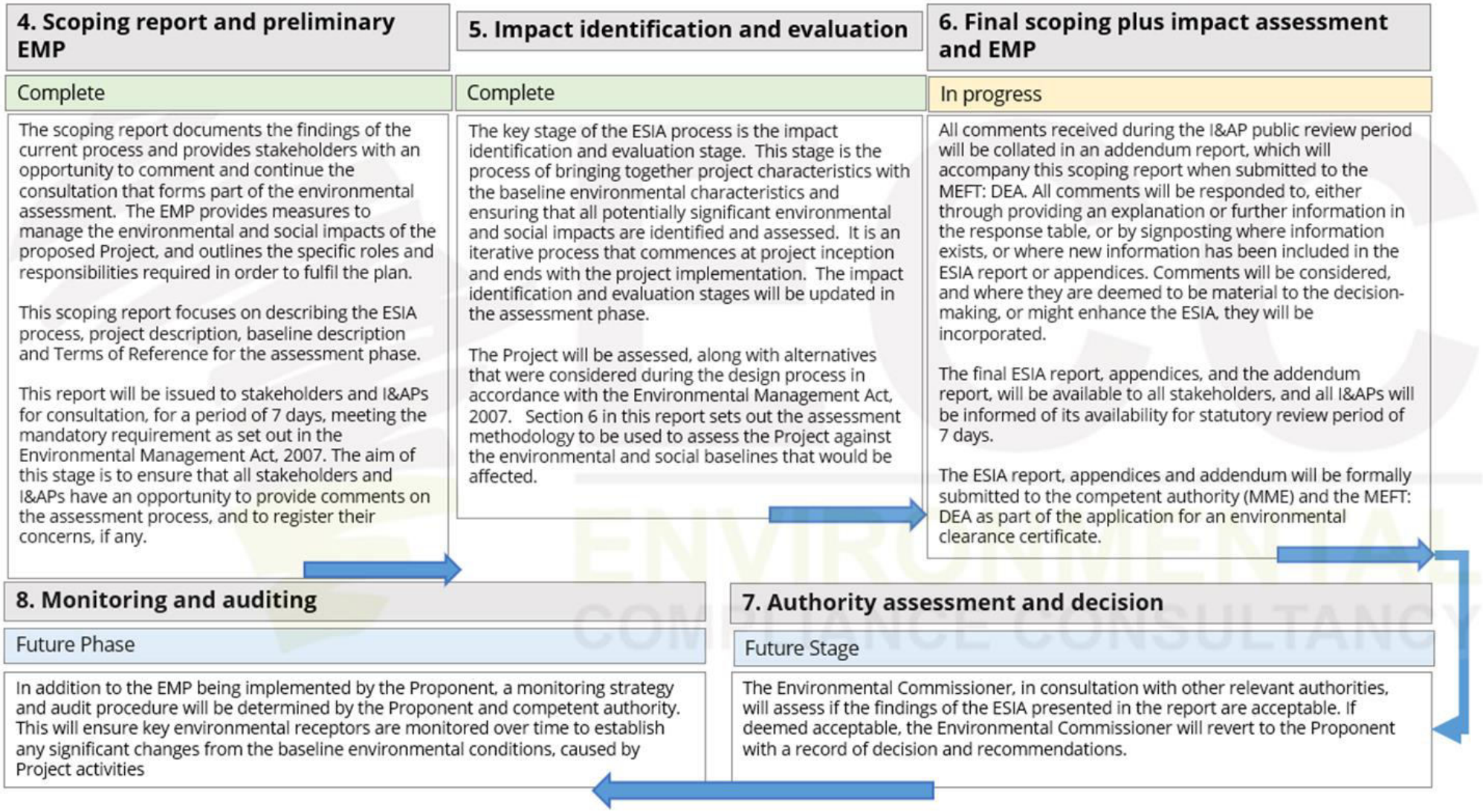


Figure 3 – ESIA process and stages complete

2.4 SCOPING AND THE ENVIRONMENTAL ASSESSMENT

Where a detailed assessment is required, the second stage is to scope the assessment. The main aims of this stage are to determine which impacts are likely to be significant; scope the available data and any gaps which need to be filled; determine the spatial and temporal scope and identify the assessment methodology.

The scoping phase of the Project is a preliminary analysis to determine ways in which the Project interacts with the biophysical, social, and economic environment. Potential impacts are identified, and the significance is assessed during the screening and scoping phase. The details and outcome of the impact assessment are discussed in sections 6 and 7 of this scoping report. Feedback from consultation with the Proponent and stakeholders also informs the analysis of the impacts. The following environmental and social aspects were considered in the impact assessment process:

SOCIO-ECONOMIC ENVIRONMENT

- Procurement of goods and services within the local economy
- Employment from local communities
- Skills development within local communities to enable the provision of goods, services and employment.

BIOPHYSICAL ENVIRONMENT

- Dust emissions
- Soil and geology
- Terrestrial ecology
- Terrestrial biodiversity (including fauna and flora)
- Surface and groundwater

2.5 BASELINE STUDIES

Baseline studies are undertaken as part of the scoping stage, which involves collecting all pertinent information from the status of the receiving environment. This provides a baseline against which changes that occur as a result of the proposed Project can be measured. For the proposed Project, baseline information was obtained through a desktop study, consultation, and engagement with stakeholders (Appendix B), focusing on environmental receptors that could be affected by the proposed Project, and verified through site-specific information. The baseline information is covered in Chapter 5.

2.6 PUBLIC CONSULTATION

Public participation and consultation are a requirement as stipulated in the Environmental Impact Assessment Regulations (Regulations 21 and 23) of the EMA, No.7 of 2007, for a project undertaking a listed activity that requires an environmental clearance certificate. Consultation is a compulsory and critical component of the ESIA process for achieving transparent decision-making and can provide many benefits. Consultation is ongoing during the ESIA process. The objectives of the public participation and consultation process are to:

- Provide information on the Project, introducing the overall project concept and planning in the form of a background information document (BID).
- Determine the relevant government, regional, and local regulating authorities.
- Listen to and understand community issues, record concerns and questions.
- Explain the process of the ESIA and the timeframes involved and establish a platform for ongoing consultation.

2.6.1 IDENTIFICATION OF KEY STAKEHOLDERS AND INTERESTED AND AFFECTED PARTIES

A stakeholder mapping exercise was undertaken to identify individuals or groups of stakeholders and the method by which they will be engaged during the ESIA process.
Stakeholders were approached through direct communication (letters and phone calls), the national press, or directly by email. A summarized list of stakeholders for this project is given below:

- The Farm owners;
- The general public with an interest in the Project;
- Ministry of Environment, Forestry, and Tourism (MEFT);
- Ministry of Mines and Energy (MME);
- //Kharas Regional Council;
- Karasburg Town Council;
- Revolutionary Union and
- Orange River-Karoo Conservation Area (ORKCA).

The records of the public consultation process in the form of a summary report provide a list of interested and affected parties (I&APs), evidence of consultation, including minutes of public meetings, advertisements in national newspapers, and a summary of the comments or questions raised by the public.

2.6.2 NON-TECHNICAL SUMMARY

The BID presents a high-level description of the proposed Project, sets out the ESIA process, and outlines when and how consultation will be undertaken. It also provides contact details for further Project-specific inquiries to all registered I&APs. The BID was distributed to registered I&APs, and it can be found in Appendix B.

2.6.3 NEWSPAPERS AND ADVERTISMENTS

Notices regarding the proposed Project and associated activities were circulated in three newspapers namely the 'Republikein, Sun, and Allgemeine Zeitung' on the 19th of April 2023 and the 26th of April 2023 (see Appendix B). The purpose of this was to commence the consultation process by informing the public about the Project and enabling I&APs to register any comments and interest raised for the Project.

2.6.4 SITE NOTICES

A site notice ensures neighbouring properties and stakeholders are made aware of the proposed Project. The notice was set up at the boundary of the EPL as illustrated in Appendix B.

2.6.5 FOCUS GROUP MEETING

In terms of Section 22 of the Environmental Management Act, No. 7 of 2007 and its regulations, to register I&APs. A public or focus group meeting is not a requirement during the public consultation process for all projects. However, the Proponent and the EAP arranged a focus group meeting with the farm owners over which the EPL overlaps was held on the 31st of May 2023 virtually on Zoom. The farm owners were allowed to have a face-to-face discussion with the Proponent and the EAP. During this session, the EIA process proposed exploration activities to take place on the EPL was explained. The farm owners and other I&APs were also allowed to raise questions or concerns they may have had and receive feedback from the Proponent and the EAP.

2.7 DRAFT SCOPING REPORT WITH IMPACT ASSESSMENT AND PRELIMINARY EMP

The draft scoping report with impact assessment and preliminary EMP will be submitted to the public for review before submission to the competent authority and DEA. This report documented the findings of the assessment process, provides stakeholders with the opportunity to comment and continue to engage in consultation and forms part of the environmental clearance application.

The preliminary EMP provides measures to manage the potential environmental and social impacts of the proposed Project and outlines specific roles and responsibilities to fulfil the plan. The draft documents will be updated with the additional comments that stem from the public review of the reports.

2.8 FINAL SCOPING REPORT WITH IMPACT ASSESSMENT AND EMP

The final scoping report with impact assessment, and associated appendices will be available to all stakeholders on the ECC website https://eccenvironmental.com/download/the-proposed-exploration-of-industrial-minerals-on-epl-7574-kharas-region-namibia/ and MEFT portal at http://eia.met.gov.na/. All I&APs will be informed of this via email.

These same final documents are formally submitted to the competent authority, namely, the Ministry of Mines & Energy (MME). A copy of the submission proof and the same set of the documents are submitted to the Office of the Environmental Commissioner, DEA department, as part of the application for an environmental clearance certificate.

2.9 AUTHORITY ASSESSMENT AND RECORD OF DECISION

The Environmental Commissioner in consultation with the MME and other relevant authorities will assess the findings of the final scoping with impact assessment. If deemed acceptable, the Environmental Commissioner will revert to the Proponent with a record of decision and any recommendations. If the clearance is not granted, then reasons are normally provided. For example, it may be required for the Proponent to undertake a detailed assessment. A detailed assessment would most likely entail the commissioning of specialist studies with impact assessments.

2.10 MONITORING AND AUDITING

In addition to the EMP being implemented by the Proponent, a monitoring strategy and audit procedure will be determined by the Proponent and competent authority (i.e., MME). This will ensure that key environmental receptors are monitored over time to establish any significant changes from the baseline environmental conditions caused by Project activities.

3 REVIRE OF THE LEGAL ENVIRONMENT

As stated in Section 1, an environmental clearance certificate is required for any activity listed in the Government Notice No. 29 of 2012 of the EMA 2007. A thorough review of relevant legislation has been conducted for the proposed Project. Table 3 below identifies relevant legal requirements specific to the Project. Table 4 provides the national policies and plans. Table 5 specifies permits relevant to the Project. This chapter outlines the regulatory framework applicable to the proposed Project.

3.1 NATIONAL REGULATORY FRAMEWORK

Table 3 - Details of the regulatory framework as it applies to the proposed Project.

National Regulatory Regime	Summary	Applicability to the Project
Constitution of the Republic of Namibia (1990)	The constitution defines the country's position on sustainable development and environmental management. The constitution says that the State shall actively promote and maintain the welfare of the people by adopting policies aimed at the following: "Maintenance of ecosystems, essential ecological processes and biological diversity of Namibia, and the utilisation of living, natural resources on a sustainable basis for the benefit of all Namibians, both present and future."	The Proponent is committed to the sustainable use of the environment and has aligned its corporate mission, vision, and objectives with this ambit of the Constitution of the Republic of Namibia (1990).
Minerals (Prospecting and Mining) Act No. 33 of 1992	The Act provides for the granting of various licences related to mining and exploration. Section 50 (i) requires: "An environmental impact assessment indicating the extent of any pollution of the environment before any prospecting operations or mining operations are being carried out, and an estimate of any pollution, if any, likely to be caused by such prospecting operations or mining operations." The holder of the mineral licence is required to comply with its terms and conditions. The Act also contains relevant provisions for pollution control related to mining activities and land access agreements and provides provisions that mineral licence holders are liable for any damage to land, water, plant, or animal life, caused by spilling or pollution,	Exclusive Prospecting Licence EPL 7574 was issued to the Proponent in November 2020 and is valid for a period of 3 years. The proposed prospecting activity on EPL 7574 requires an EIA to be carried out, as it triggers listed activities as defined in Government Notice 29 in the Environmental Management Act 2007. Prospecting activities in EPL 7574 shall not commence until an Environmental Clearance Certificate has been issued in accordance with the provisions of the Environmental Management Act 2007. The Proponent shall be compliant with Section 76 of the Minerals Act with regard to records, maps, plans and

National Regulatory Regime	Summary	Applicability to the Project
	and must take all such steps as may be necessary to remedy such spilling, pollution, loss, or damage, at its own costs.	financial statements, information, reports and returns submitted.
Environmental Management Act, 2007 (Act No. 7 of 2007) and its regulations (2012), including the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011)	The Act aims to promote sustainable management of the environment and the use of natural resources. The Act requires certain activities to obtain an environmental clearance certificate before Project development. The Act states that an EIA should be undertaken and submitted as part of the environmental clearance certificate application process. The MEFT is responsible for the protection and management of Namibia's natural environment. The Department of Environmental Affairs, under the MEFT, is responsible for the administration of the EIA process.	This scoping report with impact assessment documents the findings of the scoping phase and includes an environmental and social impact assessment sufficient for the project's activities. The process has been undertaken in line with the requirements of the Environmental Management Act and its regulations. Prospecting activities on EPL 7574 will not commence until an Environmental Clearance Certificate has been issued in accordance with the provisions of the Environmental Management Act 2007.
Hazardous Substances Ordinance, No. 14 of 1974	This Ordinance provides for the control of toxic substances and can be applied in conjunction with the Atmospheric Pollution Prevention Ordinance, No. 11 of 1976. This applies to the manufacture, sale, use, disposal, and dumping of hazardous substances, as well as their import and export.	The Proponent must handle and store hazardous substances such as fuels, reagents, and industrial chemicals safely and responsibly, thereby avoiding any harm to the environment.
Labour Act, No. 11 of 2007	The Labour Act, No. 11 of 2007 (Regulations relating to the Occupational Health & Safety provisions of Employees at Work, promulgated in terms of Section 101 of the Labour Act, No. 6 of 1992 - GN156, GG 1617 of 1 August 1997)	The Proponent must adhere to all labour provisions and guidelines, as enshrined in the Labour Act. The Project shall also develop and implement a comprehensive occupational health and safety plan to ensure adequate protection for its personnel throughout the Project lifecycle.

National Regulatory Regime	Summary	Applicability to the Project
Petroleum Products and Energy Amendment Act, No.3 of 2000	Provides provision for the Minister to regulate the cleaning up of petroleum product spills, leaks and related incidents. The Proponent is required to carry all costs associated with such incidents.	The Proponent must take into consideration the requirements that are stipulated in both the Act and its Regulations. Measures in the EMP sets out methods to comply with the Regulations, specifically waste disposal during exploration.

3.2 NATIONAL POLICIES AND PLANS

Table 4 - National policies and plans applicable to the proposed Project.

Policy or plan	Description	Relevance to the Project
Vision 2030	Vision 2030 sets out the nation's development targets and strategies to achieve its national objectives. Vision 2030 states that the overall goal is to improve the quality of life of the Namibian people aligned with the developed world.	The Proponent is encouraged to meet the objectives of Vision 2030 and shall contribute to the overall development of the country through continued employment opportunities and ongoing contributions to the gross domestic product (GDP).
Fifth National Development Plan (NDP5)	The NDP5 is the fifth in a series of seven five-year national development plans that outline the objectives and aspirations of Namibia's long-term vision. The NDP5 pillars are economic progression, social transformation, environmental sustainability, and good governance.	The Proponent is encouraged to support the Government's objectives of the NDP5 through creating opportunities for continued employment.
The Harambee Prosperity Plan II (2021 – 2025)	Second Pillar: Economic advancement – ensuring increasing productivity of priority key sectors (including mining) and the development of additional	The Proponent will contribute to the continued advancement of the mining industry and create an additional employment generation engine within the regional and national landscape.

Policy or plan	Description	Relevance to the Project
	engines of growth, such as new employment opportunities	
Namibia's Green Plan, 1992	Namibian has developed a 12-point plan for integrated sustainable environmental management to ensure a safe and healthy environment and to maintain a viable economy. Clause 2 (f) makes specific mention of guidelines related to Mining and Sustainable Development.	The Proponent is encouraged to adhere to best practise during operational activities.
Minerals Policy	The Minerals Policy was adopted in 2002 and sets guiding principles and direction for the development of the Namibian mining sector while communicating the values of the Namibian people. The policy strives to create an enabling environment for local and foreign investments in the mining sector and seeks to maximise the benefits for the Namibian people from the mining sector while encouraging local participation. The objectives of the Minerals Policy are in line with the objectives of the Fifth National Development Plan that include the reduction of poverty, employment creation, and economic empowerment in Namibia.	The Proponent must conform to the Policy and where applicable support local spending and procurement. The Proponent must comply with the general guidelines of the Policy through the adoption of various legal mechanisms to manage all aspects of the environment effectively and sustainably from the start. The ESIA is one such mechanism to ensure environmental integrity throughout the planned Project's lifecycle.

Table 5 - Specific permit and licence requirements for the proposed Project

Permit or licence	Act or Regulation	Related activities requiring a permit	Relevant Authority
Environmental clearance certificate	Environmental Management Act, No 7 of 2007	Required for all listed activities shown in Table 2. Requires issuance of Environmental Clearance Certificate by the Environmental Commissioner.	Ministry of Environment, Forestry and Tourism (MEFT)
Exclusive Prospecting Licence	Section 90 (2) (A) of the Minerals Act, No.33 of 1992	Written permission from the Mining Commissioner in the form of an Exclusive Prospecting Licence (EPL 7574) has been issued to date.	Ministry of Mines and Energy (MME)
Vegetation Clearing	Forestry Act No. 12 of 2001	A permit is required for the removal or clearing of any vegetation.	Ministry of Environment, Forestry and Tourism (MEFT)
Water abstraction permit	Water Act, 1996	This Act provides for "the control, conservation and use of water for domestic agricultural, urban and industrial purposes; to make provision for the control, in certain respects and for the control of certain activities on or in water in certain areas". The Ministry of Agriculture, Water and Land Reform Department of Water Affairs is responsible for the administration of the Water Act. The Minister may issue a Permit in terms of regulations 5 and 9 of the government notice R1278 of 23 July 1971 as promulgated under section 30 (2) of the Water Act no. 54 of 1956, as amended. To abstract water from a controlled water source, a WA 002 should be filled and submitted to the MAWF.	Ministry of Agriculture, Water and Land Reform (MAWLR)
Notice of Intention to drill	Water Resources Management Act, 2004	Despite any other law to the contrary, a person who proposes to drill a new borehole, or to improve any existing borehole, to search for or extract minerals or other substances, or for road construction or any other purposes other than exploring for	Ministry of Mines and Energy (MME)

Permit or licence	Act or Regulation	Related activities requiring a permit	Relevant Authority
		groundwater must inform the Minister of such proposal; furnish the Minister with such data and information as the Minister may require in connection with such borehole drilling or improvement; and take such measures as may be required by the Minister for conserving and protecting groundwater. Any excess water collected as a result of any operation contemplated in subsection (1) must be disposed of as prescribed	

4 PROJECT DESCRIPTION

4.1 NEED FOR THE PROJECT

The mining sector in Namibia contributes to the country's Gross Domestic Product (GDP), government tax receipts and export revenues. For this reason, exploration activities are encouraged in Namibia. The vision of the Minerals Policy is to "attract investment and enable the private sector to take the lead in exploration, mining, mineral beneficiation and marketing" supports mineral exploration and development.

The proposed Project is in line with this vision and has the potential to create employment in local communities in the //Kharas Region. If exploration activities are successful, and a resource can be defined as having commercially viable mineral concentrations, then socio-economic development can be realised in the region.

4.2 ALTERNATIVES CONSIDERED

In terms of the Environmental Management Act, No. 7 of 2007 and its regulations, alternatives considered should be analysed and presented in the EIA reports. This requirement ensures that during the design evolution and decision-making process, potential environmental impacts, costs, and technical feasibility have been considered, which leads to the best option(s) being identified.

Exploration activities range from extremely low-impact exploration such as remote sensing from satellites to more intensive methods such as closely spaced drilling. The methods that will be used are based on the exploration programme which is adjusted as more information and data is obtained. At this stage of the Project, the exploration programme is yet to be finalised and therefore a range of options still exist. All the options and methods have been identified to ensure all the potential impacts on the environment and society are minimal.

4.2.1 NO-GO ALTERNATIVES

Should exploration activities within EPL 7574 not take place, the anticipated environmental impacts from exploration activities would not occur. However, the social and economic benefits associated with the Project would also not materialise. Additionally, there would not be an opportunity to define resources within the Project area, which would be a missed opportunity for geological mapping and data collection that typically adds to regional knowledge of Namibia's mineral wealth and, if found to be viable for mining, would benefit the Namibian economy.

4.3 EXPLORATION METHODOLOGY

The schedule of the activities is presented in Figure 6 below:

Table 6 - Preliminary Exploration Schedule

Phase	Time Period	Activity Description
1	Completed	Remote sensing spectral analysis has been completed. The objectives of the assessments were to delineate areas of focus.
	2-3 Months	Ground truthing to all defined target areas (pegmatite bodies), rock chips (grab) sampling, geological mapping, and soil sampling downhill of orebodies as the EPL 7574 has a rugged topography. Channel sampling will be conducted perpendicular to the strike direction of the pegmatite bodies /outcrops and possible trenching/pitting may be considered. The activities will be conducted sequentially to minimise the impact footprint of exploration activities.
	2 – 3 Months	Geochemical analysis of samples collected from the EPL will be analysed by assay laboratories and if assay results are encouraging a more invasive stage 2 of exploration will commence
2	6-12< months	To determine if the target pegmatites have a potential economic size (tonnage) and grade (%) for lithium and rare earth element (REE) below the surface. To define the mineralization below the surface cover, either a Reverse Circulation (RC) technique or a diamond core (DD) drill survey will be used. During this stage, infill sampling will be an ongoing exercise.
3	To be determined	Mineral Resource Estimates - The aim would be to define the mineral resource potential of the orebodies and would culminate into the preliminary economic assessment of the deposit (PEA). Exploration techniques employed would include drilling campaigns for resources estimation, preliminary engineering and metallurgical test work

4.3.1 PHASE 1 0 NON-FIELD EXPLORATION ACTIVITIES

REMOTE SENSING

The first phase of exploration activities commenced in 2022. The Proponent conducted various non-field exploration activities. These were remote sensing spectral analysis, which came to completion at the end of March 2023, and they compiled a Mineral Potential Evaluation Technical Report. This enables the proponent to identify potential mineralisation without having to undertake ground-based exploration activities. These assessments also allowed the Proponent to delineate areas of focus for more in-depth exploration work.

4.3.2 PHASE 2 – GROUND FIELD RECONNAISSANCE ACTIVITIES

RECONNAISSANCE SURVEYS

Subsequently, ground truthing of all defined target areas (potentially economic Pegmatite bodies), will be undertaken to collect basic information about the possible ore body present on the license. Additionally, the proponent will collect samples of rock chips and soil downhill and in the valleys of the license area and various geological mapping exercises will take place. A sample storage yard will be established in the closest permanent settlement, either on local farms or nearby towns.

Furthermore, the Proponent will undertake channel sampling that will be conducted perpendicular to the strike direction of the pegmatite bodies/outcrops and possible trenching/pitting may be considered.

GEOCHEMICAL ANALYSIS

Geochemical analysis of the samples collected from the licence area will then be sent to an overseas international laboratory to be assayed. Should the results of the assay deem promising an invasive mid-stage phase 2 will commence.

4.3.3 PHASE 2 - EVALUATION STAGE

DRILLING

The drilling campaigns will aim to determine if the pegmatites have the potential size (tonnage) and grade (%) for lithium and Rare Earth Elements (REE) below the surface. To define the mineralization below the surface either a reverse circulation (RC) technique or a diamond core (DD) drilling campaign will be conducted. Infill drilling will also take place simultaneously with RC or DD drilling.

4.3.4 PHASE 3 – ADVANCED EXPLORATION STAGE

This stage will be a continuation of the evaluation stage however there will be a specific focus on defining the mineral resources (Mineral Resource Estimates - MRE) of the ore body and would develop into a preliminary economic assessment (PEA). Further drilling campaigns would be required for the resource estimation and preliminary engineering and metallurgical test work activities would run in parallel.

4.4 EXPLORATION SCHEDULE

The exploration activities will be managed from the Proponent's offices in Windhoek, Stellenbosch and Johannesburg. Field exploration is likely to occur throughout the validity period of the license. The ground truthing and surveys will take approximately two to three months. The channel sampling will also take two to three months and will run concurrently with the surveys. The project may then progress to various drilling campaigns which could take anywhere from six to twelve months.

Drilling programs are variable and dynamic and usually depend on the information that is gained during drilling to finalise the scope of the drilling campaign. Renewal applications for the

environmental clearance certificate and other permits will be made should a renewal of the EPL be required.

4.5 EQUIPMENT AND MATERIAL

During the exploration phase, two to three double and single-cab vehicles and all-terrain vehicles will be used to transport materials and equipment to the site. Geochemical sampling or soil sampling comprises the collection of small rock, soil or sediment samples in the field along a designed grid, and the analysis of the samples to identify geochemical anomalies. These surveys are typically conducted using shovels, picks, hammers, plastic bags, etc.

Drilling equipment, diesel fuel and consumables shall be brought to the exploration site to support drilling exploration activities when/if needed. For advanced exploration, a drill rig (track-, truck- or trailer-mounted) will be brought to the site for RC or diamond drilling, along with a water truck and supporting equipment (rods truck, water and fuel bowsers, and RC compressor) for use during drilling. For RC drilling, the rock is crushed down the hole using a percussive drill bit and the crushed rock is brought to the surface using compressed air. Whereas, with diamond drilling, a diamond-impregnated drill bit is used to cut a cylinder of the rock out, which allows for more detailed interpretation.

Existing tracks shall be used as far as reasonably practicable. If new tracks are required, they will be developed by hand or by use of a bulldozer, terrain dependent. Vegetation clearing will be limited to clearing for access tracks, drilling pads and site camps. Should additional areas be cleared for exploration activities the Forest Act, No. 12 of 2001 and its regulations will be complied with (the relevant forestry permits will be applied for if required).

4.6 POWER SUPPLY

The individual contractors will be responsible to supply their own energy needs throughout the duration of their stay within the field camps one option may be to use small generators.

4.7 WATER SUPPLY

Water for exploration activities will not be required during early-stage exploration. If the Project progresses to the advanced exploration stage, the Proponent will source water from the Orange River located roughly ten to twelve kilometres south of the license or will source water from privately owned boreholes on farms within the EPL if agreed upon with the farm owners. An alternative option would also be to truck water in from a nearby approved water source. The proponent envisions that the project would require roughly but not exceeding 10 000L of water per day once drilling begins.

4.8 WORKERS AND ACCOMMODATION

A technical team consisting of Namibian and international geologists, geo-technicians and field technicians, sources from the nearest towns and settlements such as Karasburg and Warmbad will make up the exploration team. Initial teams will comprise not more than 10 people per drill rig. The workers may be accommodated on-site, erecting campsites at the various exploration stations with the EPL with the necessary approvals in place from farm owners. The contractor's camp infrastructure includes tents and portable toilets, or chemical toilets, which would be set up on-site temporarily, or if there is a village nearby, the Proponent will make arrangements to accommodate workers in Karasburg or surrounding areas.

4.9 WASTE MANAGEMENT

The varying waste categories expected to be produced by the project are general household waste, plastics, chemical containers and hazardous waste, e.g. hydrocarbons. All household or non-hazardous waste will be disposed of at the local landfill site in either Karasburg or Warmbad. While hazardous waste will be transported to appropriate sites for safe disposal at Windhoek or the closest licensed disposal or recycling facility.

4.10 WASTEWATER EFFLUENT

Early-stage exploration does not produce wastewater. If a significant discovery is made, diamond drilling will be involved, which does generate wastewater. This water is circulated down each hole while adding environmentally friendly drill mud. Once drilling is completed the mud and drill cuttings are separated from the water and the water circulated down the hole, while the drilling muds will be disposed of at Karasburg landfill or other suitable and permitted site.

4.11 REHABILITATION

Once exploration activities are completed the areas shall be rehabilitated to a condition as close to the original state as far as possible. Drill pads, drill holes and roads or tracks may remain in their current state should they be part of the future production area footprint, however, pits and trenches should be made safe and stable if they cannot be fully rehabilitated. Rehabilitation shall be determined during the exploration programme and shall be agreed upon with the landowners and authorities as per legislation (discussed in Section 3). Before and after photographs will be used to monitor rehabilitation success.

5 ENVIRONMENTAL AND SOCIAL BASELINE

A detailed environmental and socio-economic baseline is provided in this section. A description of the existing biophysical environment is given. This section has been compiled from a desktop study.

5.1 LAND USE

EPL 7574 is situated south of Karasburg and southeast of Velloorsdrift, approximately 12 km north of the Orange River and South Africa. The region has mixed agriculture (Livestock and game farms) and exploration activities. The location of the EPL about the nearest settlement, the Orange River and South Africa and the farms over which the license overlaps is shown in Figure 4. Parts of the EPL also fall within a privately owned conservation area, the Orange River Karoo Conservation Area (ORKCA).

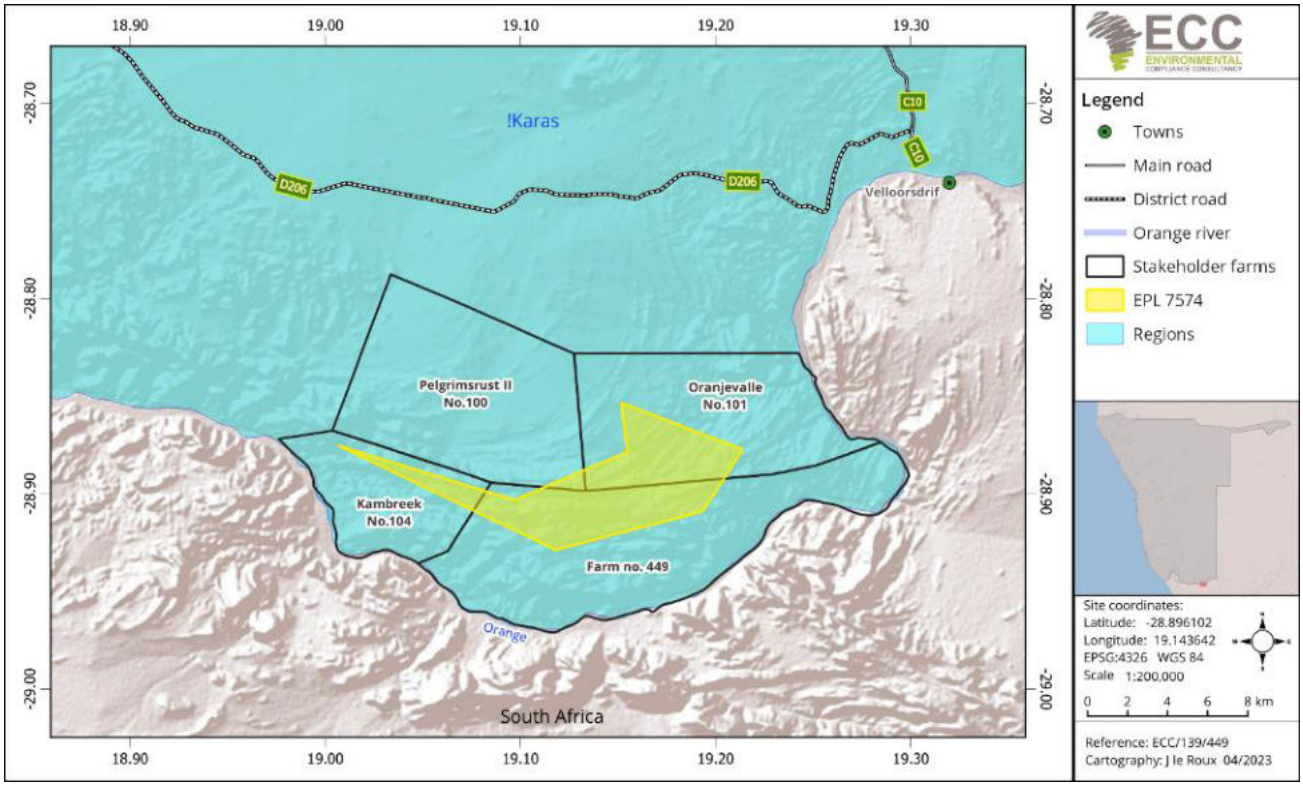


Figure 4 - Stakeholder map

5.2 CLIMATE

Climate and weather data from meteoblue (2023) along with desktop QGIS data for the site has been used to give the most accurate data for the license area. The climatic condition characterizing the EPL area are warm summers and cool winters with mean temperatures between 20˚C and 21˚C, mean maximum temperatures ranging between 34˚C and 36˚C and mean minimum temperatures ranging between 4˚C and 8˚C. The hottest months of the year are between October and March and the coolest months of the year are between May and September.

The months with the highest humidity, have a humidity of approximately 60% relative humidity (RH) and the driest months have a humidity of approximately 10% RH. The average rainfall in this area during the year is between 50 and 100mm. Potential evaporation is between 1900 and 2000mm per year as shown in Figure 5. The site area receives wind speeds up to 38Km/h, of which the months of July and November, with the most predominant wind directions being West (W), West-Southwest (WSW), Southwest (SW) and East-Northeast (ENE) and this is shown in Figure 6 below.

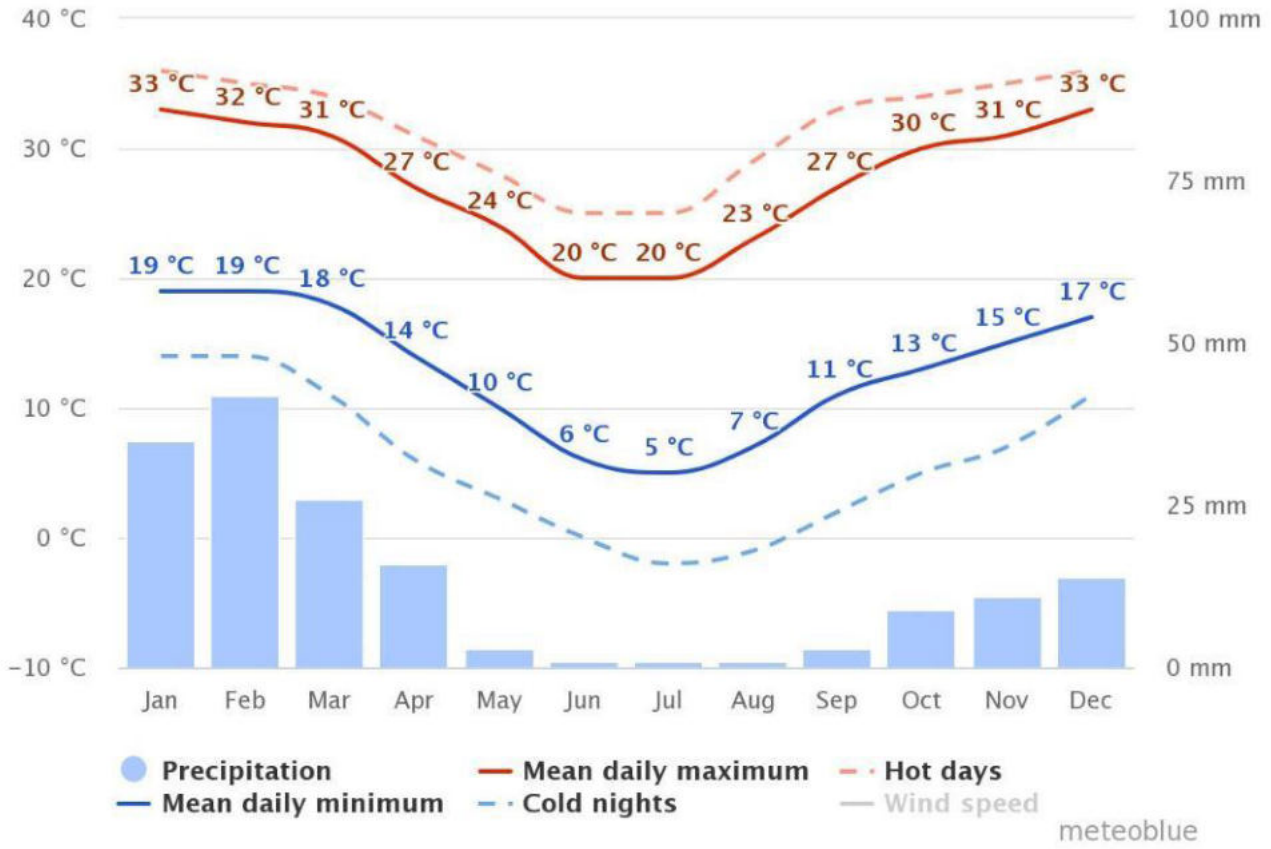


Figure 5 - Yearly expected weather conditions (meteoblue, 2023).

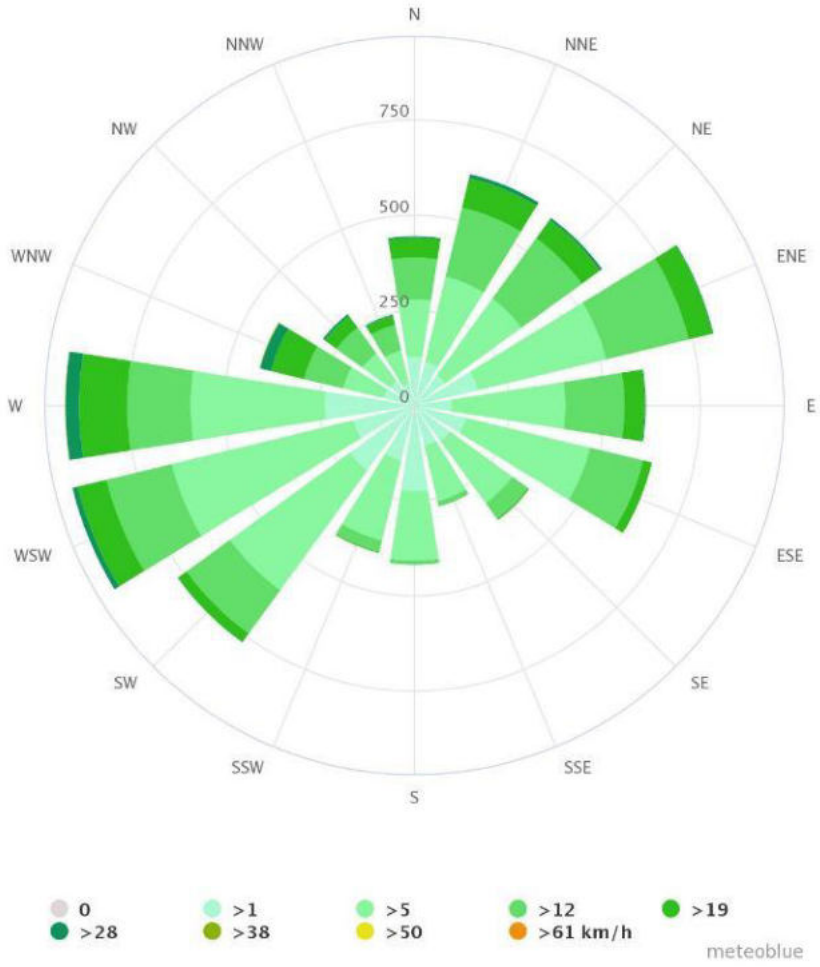


Figure 6 - Average wind speed and direction in this area.

5.3 SOILS, GEOLOGY AND TOPOGRAPHY

The regional geology of this area consists mainly of the Namaqua Metamorphic Complex Group. The Namaqua Metamorphic Complex Group is a Mesoproterozoic low-pressure, granulite facies belt situated on the south-western margin of the Kaapval Craton and consists of various types of granitoids intercalated with metapelites and calc-silicate rocks (Bial et al., 2015) shown in Figure 7 below.

The main rock types for this area are gneiss and graphite. Gneiss is a foliated metamorphic rock identified by its bands and lenses of varying mineral composition. Some of these bands contain granular minerals that are bound together in an interlocking texture. While graphite is a mineral composed of stacked sheets of carbon atoms with a hexagonal crystal structure, it is typically soft and is relatively non-reactive with high electrical and thermal conductivity.

The soil type in this area is dominated and characterised by Eutric leptosols. The first part of the soil name denotes soil properties. Eutric soils are characterised as being fertile soils with high base saturation. The second part of the name reflects the conditions and process which have led to the formation of the soils. The geology of the area is shown are typically formed in areas that are actively eroding, especially in hilly or undulating areas which cover a large part of the southern and north-western parts of Namibia. This type of soil is coarse-textured and offers limited depth due to the presence of hard-rock, highly calcareous or cemented layer within 30cm of the surface. Leptosols are the shallowest soils in Namibia and often contain gravel. It has a low water-holding capacity and so water run-off and water erosion can be very high in these areas if heavy rainfall occurs (Atlas of Namibia Team, 2022).

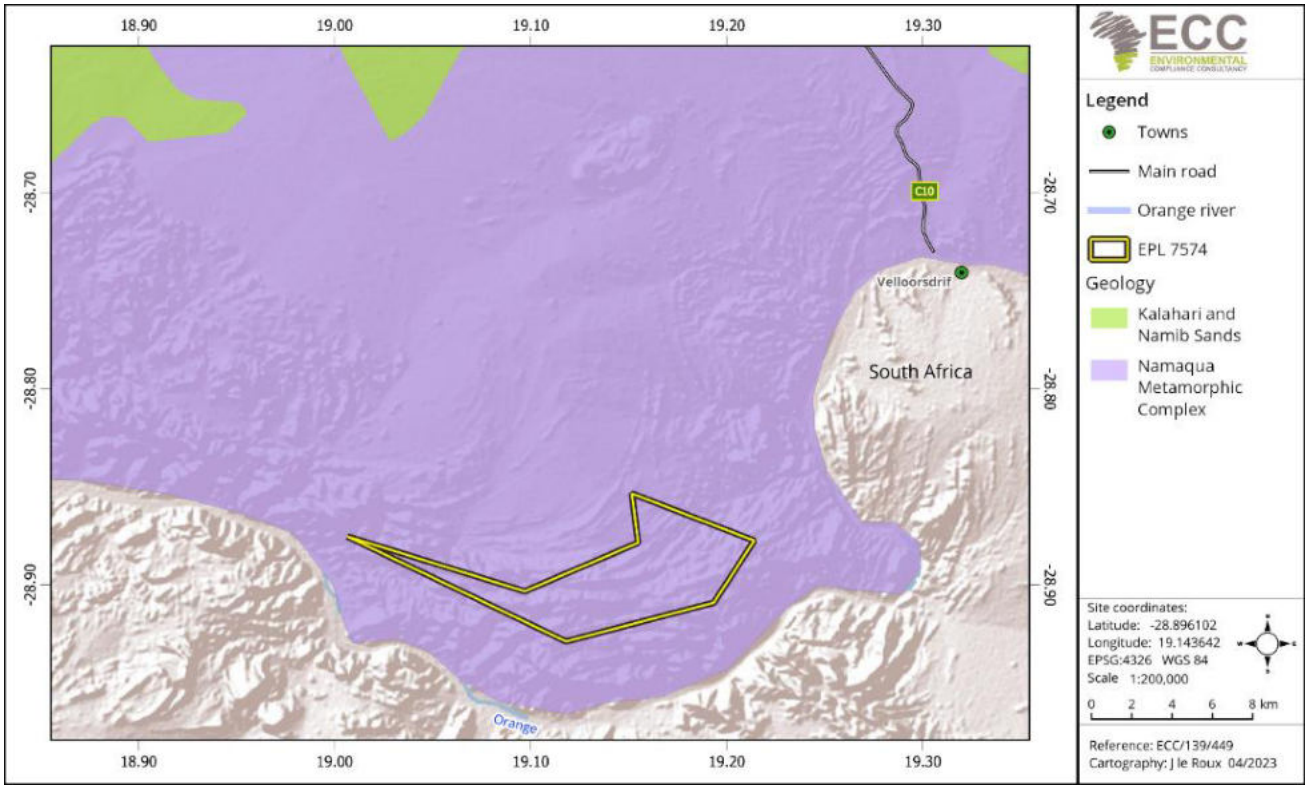


Figure 7 - Geology of the area.

The topography of the Project site is relatively mountainous and hilly. The elevation decreases from the western side of the EPL towards the eastern side and the overall EPL of the varies between 225m and 1200m. but elevation across the EPL varies due to various elevated areas (i.e., hills) shown in Figure 8.

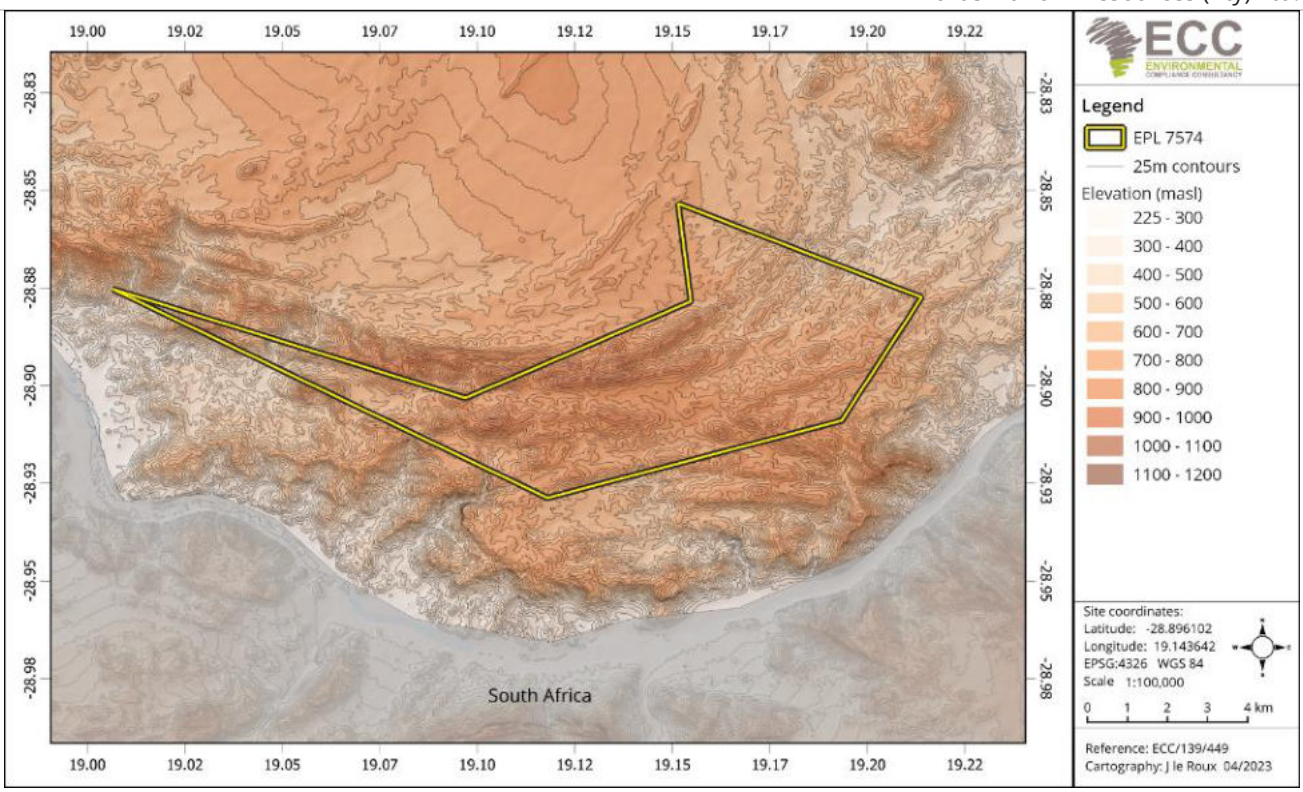


Figure 8 - Elevation of this area

5.4 HYDROLOGY

According to the Namibian Monitoring Information System & Hydrological Map of Namibia (https://na-mis.com/), the site falls over rock bodies with moderate to very low groundwater potential. The groundwater vulnerability in this area is considered to be low to very low and groundwater recharge within this area is also considered to be low (0 to <0.5 % of the total average rainfall). Groundwater quality in this area is generally poor and not suitable for human consumption (Group D and C) with some good to excellent quality pockets (Group A and B), found around the site (northeast).

The EPL area overlays the Orange Groundwater Basin as shown in Figure 9. This rock body has very limited groundwater potential and yields less than 0.5m^3 of water per hour. There is also a lack of recharge and poor groundwater quality in most areas above the basin. The groundwater quality for this area is ranked as Group D. Water in Group D is characterized as having exceedingly high levels of total dissolved solids (TDS), sulphates and fluoride, which makes it not suitable for human consumption (Atlas of Namibia Team, 2022).

The EPL is approximately five kilometers from the Orange River which flows to the Atlantic Ocean in a generally westerly direction for some 2092.15km. The average monthly flow of the Orange River shows a less distinct seasonal pattern than expected due to the high demands on the river and the

upstream damming has reduced the quantity of water reaching downstream and has altered its pattern of flow.

The closest bulk water supply source is at Dreihuk, a storage dam capacity of between 5-20 million cubic meters of water to Karasburg which is about 100km from the EPL (Atlas of Namibia Team, 2022).

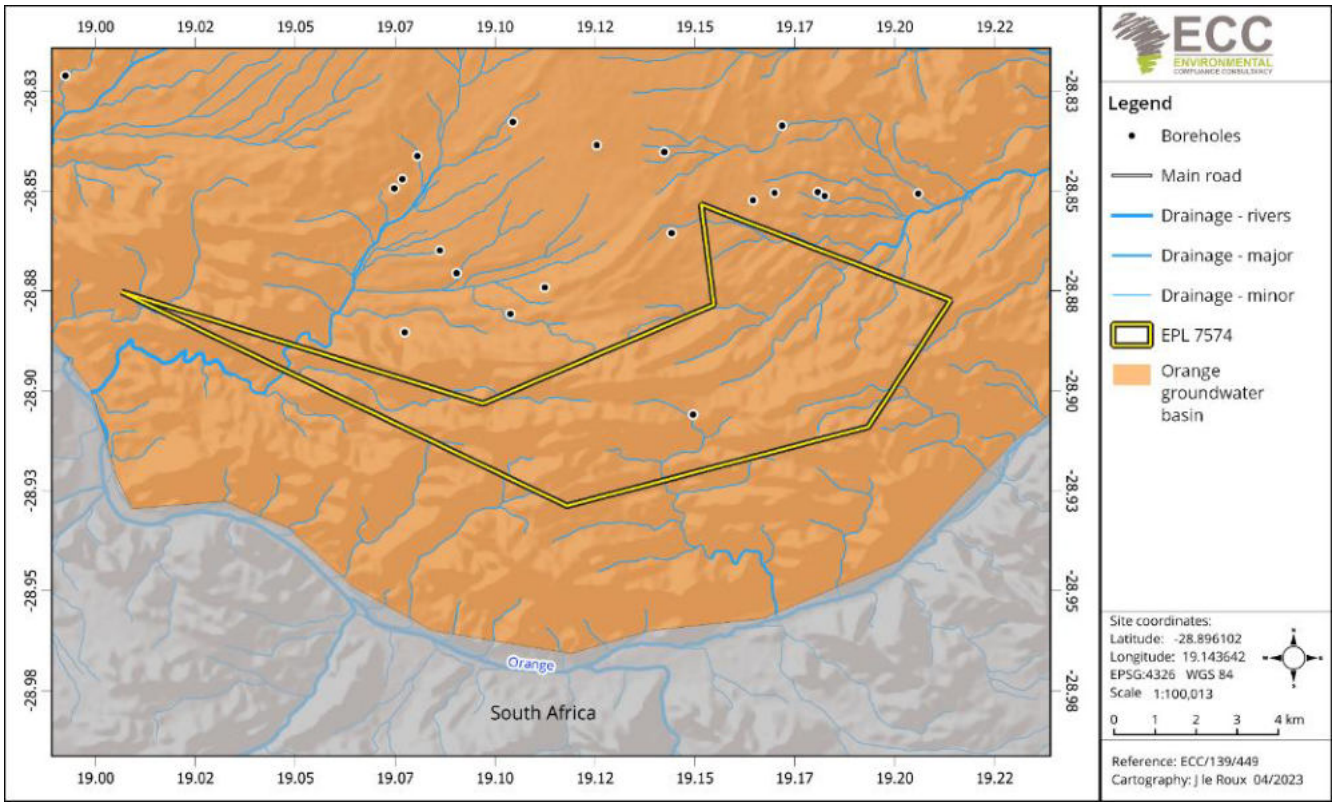


Figure 9 - Hydrology of the area

5.5 BIODIVERSITY BASELINE

5.5.1 FLORA

The EPL is situated within the Karas dwarf shrubland in the Nama-Karoo. The dominant type is grasslands and low shrubs. The plant diversity (<50 to up to 150 species) for this area is low with low plant endemism (2-10 species). This area has a localised plant endemism of between 1 to 3 species. Appendix D lists the CITES protected or endangered species and endemic flora species found in the area. Most of Namibia's 4 000 plant species can be classified into nine floristic groups. The EPL area falls within the Gordonia floristic group (Atlas of Namibia Team, 2022).

Most of the endemic, protected, endangered and critically endangered flora species are found on rocky slopes, outcrops and lower reaches on the westward-flowing ephemeral rivers. Therefor driving in and drilling in these areas that should be managed carefully by the exploration team when

preparing their exploration plans. Due to the low plant density and arid nature of the receiving environment the fire intensity of this area has been categorized as less than 50kW/m^2. However, caution should still be taken to prevent veld fires as the area is still a grassland (Atlas of Namibia Team, 2022).

5.5.2 FAUNA

The overall fauna diversity for this area is relatively low compared to other parts of the country. The area within the EPL has a low bird diversity of less than 51 species, a low diversity of reptiles of between 31-40 species, a low diversity of amphibians of between 5 to 8 species and a medium diversity of mammals of between 60-70 species. The area has a low endemism of birds, reptiles and scorpions and a high endemism of invertebrate and mammals.

Due to the founding of ORKCA, various wildlife such as oryx, springbok, eland, Hartmann's Mountain zebra, greater kudu and red hartebeest have been reintroduced into the area and their populations are increasing. While various predators like the leopard, brown hyena, caracal, African wildcat, aardwolf, black-backed jackal, bat-eared fox and cape fox can also be observed in the area, although not in large numbers (Orange River-Karoo Conservation Area, 2023). Of these animals mentioned the leopard, brown hyena and mountain zebra are on the IUCN red list.

5.6 SOCIAL AND SOCIO-ECONOMIC

The //Kharas Region is the southernmost and least densely populated of the 14 regions of Namibia. The region has a well-developed energy and water network and an advanced postage and telecommunications system that links villages and towns with the rest of the country and the world at large. Water is obtained from the Orange River and a few boreholes on the farms. Whereas in the nearest major town electricity is supplied by NamPower. Excess water for irrigation is often obtained from the Orange River.

5.6.1 EMPLOYMENT

In 2011, as a region 75.4% of the population of the Karas Region that were eligible to work were part of the Karas Region Labour Force. Wages and salaries represented the main income source of 71.6 % of households in the Karas Region. Overall, the rate of unemployment is estimated at 32.2 % for people residing in the Karas Region, using the broad definition of unemployment (NSA, 2011).

5.6.2 ECONOMIC ENVIRONMENT

Mining plays a pivotal role in the economy of Namibia. Since independence, it has consistently been the biggest contributor to Namibia's economy in terms of revenue and accounts for 11% of the country's income (National Planning Commission, 2021). Mining is one of the main contributors to GDP, and one of the largest economic sectors of Namibia.

In 2022 Namibia recorded a growth of 4.6% which was mainly driven by mining (especially due to the growth of the diamond production) due to the fact that this industry saw a growth of 45.1% in 2022. Primary industries saw a growth of 12.9% mainly attributed to mining and quarrying falling under this industry (Namibia Statistics Agency, 2022).

Secondary industries saw a recovery from 2021 of 3.3% (Namibia Statistics Agency, 2022). However, agricultural industries have been negatively impacted due to drought and the war in Ukraine. With ever increasing fuel prices, inflation has increased to a high of 6.1%, an all-time high since 2017 thus affecting the most vulnerable (The World Bank, 2023).

5.7 CULTURAL HERITAGE

From the assessment undertaken by Dr Eliot Mowa, two potential archaeological or heritage resources were identified. The sites identified by the assessment are hunting blinds as shown in the figures below and were potentially used by hunter-gathers to shield themselves from prey when embarking on elaborate hunting missions (Mowa, 2023).

Further heritage evaluation of the site can be found in the heritage assessment in Appendix D. Nevertheless, there is still the potential to uncover previously undiscovered heritage remains. A chance finds plan must be incorporated into the EMP.

1. **Five Natural Caves and Rock Shelters**

Description: Five caves and rock shelters are currently inhabited by animals such as Rock Dassie along a steep gradient. The formations are located at the confluence of three rivers (Figure 10).

Coordinate: -28,894977 S 19,048215 E

Figure 10 - Caves and one rock shelter along the river passing through EPL 7574.

2. Hunting Blinds

Description: Suspected hunting blinds overlooking a plain to the north and south. Rugged vertical faced ridges extending lineally north easterly and south westerly direction (Figure 11).

Coordinate: 28°51’29”S 19°09’20”E

Figure 11 - Suspected Hunting Blinds within part of EPL 7574

Figure 12 below map the identified heritage sites against the Proponents drill sites to show the proximity of the Proponents drill sites to potentially identified heritage sites, to assist in assessing the impact of the Proponent's potential drill locations on the EPL's heritage sites.

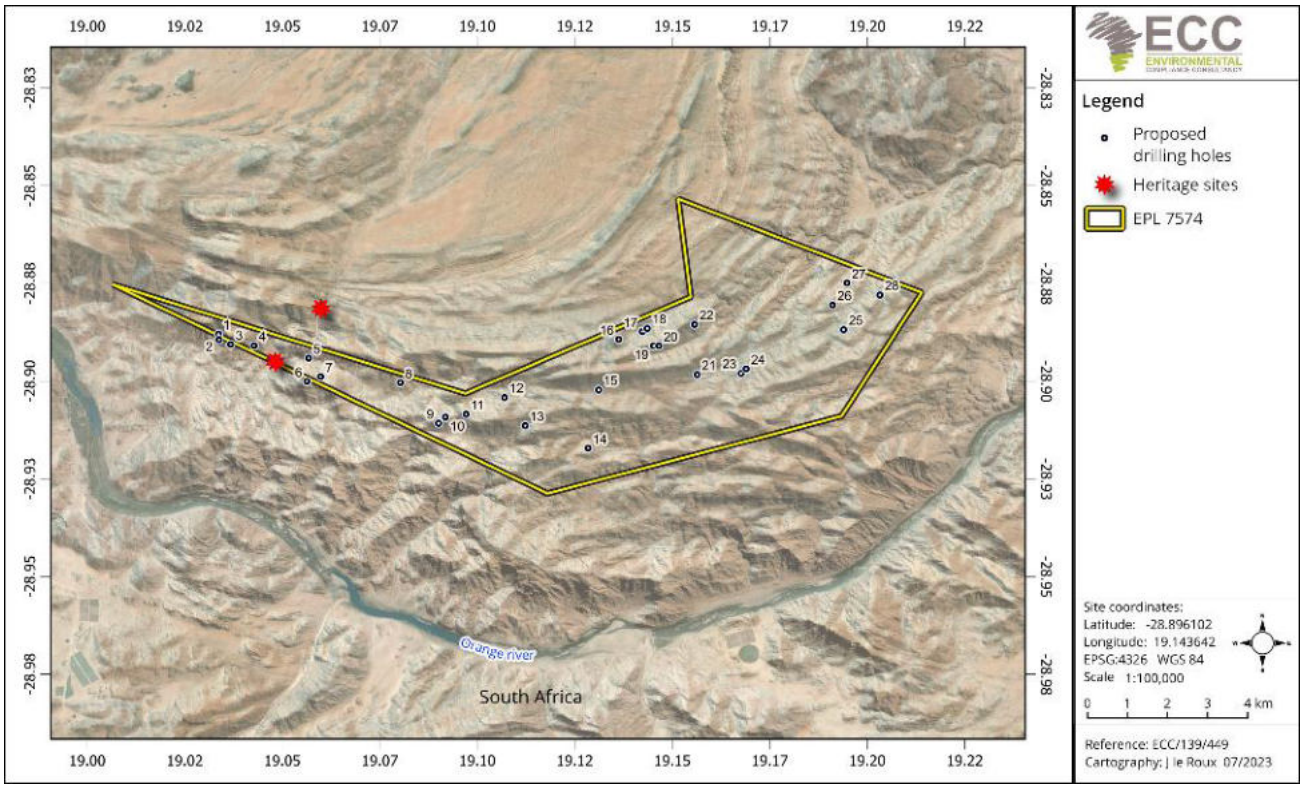


Figure 12 - Heritage sites identified on EPL 7574 mapped against the Proponent's potential drill sites.

6 IMPACT IDENTIFICATION AND EVALUATION METHODOLOGY

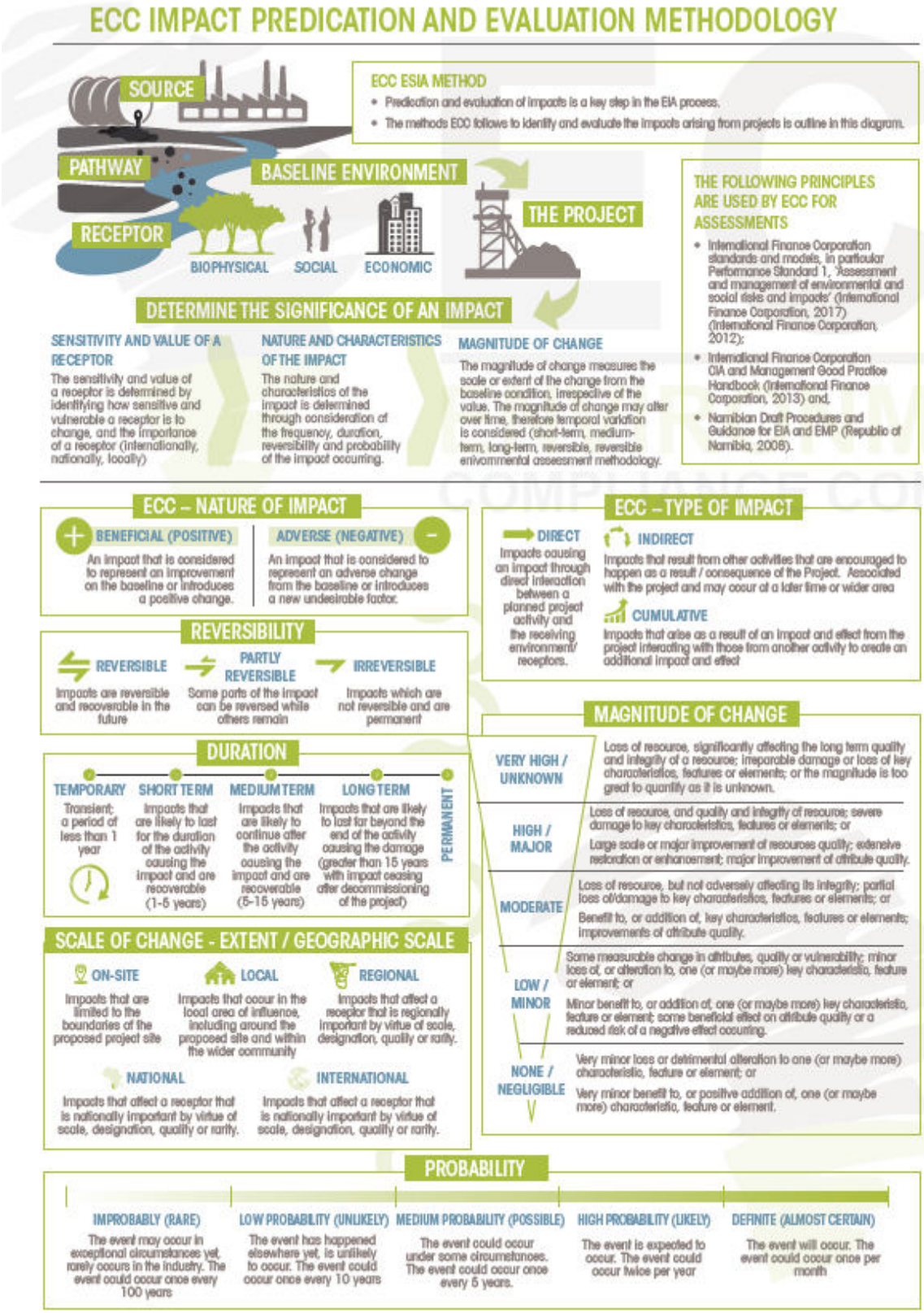
6.1 INTRODUCTION

The impact assessment method described in this chapter by ECC is designed to systematically identify and evaluate potential environmental and social impacts that may arise from a proposed project. The method takes into consideration the baseline characteristics of the project area and assesses the significance of impacts based on various factors, including the sensitivity and value of environmental and social receptors, the nature and characteristics of the potential impact, and the magnitude of potential change.

The method shown in Figure 13 provides assessment guidance that is used to evaluate impacts, and it also acknowledges any limitations, uncertainties, and assumptions associated with the assessment methodology. It outlines how impacts are identified and evaluated, and how the level of significance is derived. The method also addresses the application of mitigation measures in the assessment, and how additional mitigations are identified.

This chapter provides a structured approach for evaluating the potential impacts of a proposed project on the environment and social aspects. It considers various factors to determine the significance of impacts and provides guidance on how to identify and evaluate potential impacts. It also recognises the limitations and uncertainties associated with impact assessment methodologies, which adds transparency and credibility to the assessment process.

Overall, this chapter provides a comprehensive and systematic approach for conducting impact assessments, which can help ensure that potential environmental and social impacts are thoroughly evaluated and addressed in the decision-making process for the proposed project. However, it is important to note that the effectiveness of this method would ultimately depend on its implementation and the accuracy of the baseline data and assumptions used in the assessment. Therefore, regular reviews and updates of the methodology based on new information and feedback from stakeholders would be recommended to improve its accuracy and relevance.


ECC IMPACT PREDICATION AND EVALUATION METHODOLOGY
SOURCE
PATHWAY
RECEPTOR
BASELINE ENVIRONMENT
BIOPHYSICAL
SOCIAL
ECONOMIC
THE PROJECT
ECC ESIA METHOD
• Predication and evaluation of impacts is a key step in the EIA process.
• The methods ECC follows to identify and evaluate the impacts arising from projects is outline in this diagram.
THE FOLLOWING PRINCIPLES ARE USED BY ECC FOR ASSESSMENTS
• International Finance Corporation standards and models, in particular Performance Standard 1, 'Assessment and management of environmental and social risks and impacts' (International Finance Corporation, 2017) (International Finance Corporation, 2012);
• International Finance Corporation CIA and Management Good Practice Handbook (International Finance Corporation, 2013) and,
• Namibian Draft Procedures and Guidance for EIA and EMP (Republic of Namibia, 2008).
DETERMINE THE SIGNIFICANCE OF AN IMPACT
SENSITIVITY AND VALUE OF A RECEPTOR
The sensitivity and value of a receptor is determined by identifying how sensitive and vulnerable a receptor is to change, and the importance of a receptor (internationally, nationally, locally)
NATURE AND CHARACTERISTICS OF THE IMPACT
The nature and characteristics of the impact is determined through consideration of the frequency, duration, reversibility and probability of the impact occurring.
MAGNITUDE OF CHANGE
The magnitude of change measures the scale or extent of the change from the baseline condition, irrespective of the value. The magnitude of change may alter over time, therefore temporal variation is considered (short-term, medium-term, long-term, reversible, reversible environmental assessment methodology.
ECC – NATURE OF IMPACT
BENEFICIAL (POSITIVE)
An impact that is considered to represent an improvement on the baseline or introduces a positive change.
ADVERSE (NEGATIVE)
An impact that is considered to represent an adverse change from the baseline or introduces a new undesirable factor.
ECC – TYPE OF IMPACT
DIRECT
Impacts causing an impact through direct interaction between a planned project activity and the receiving environment/ receptors.
INDIRECT
Impacts that result from other activities that are encouraged to happen as a result / consequence of the Project. Associated with the project and may occur at a later time or wider area
CUMULATIVE
Impacts that arise as a result of an impact and effect from the project interacting with those from another activity to create an additional impact and effect
REVERSIBILITY
REVERSIBLE
Impacts are reversible and recoverable in the future
PARTLY REVERSIBLE
Some parts of the impact can be reversed while others remain
IRREVERSIBLE
Impacts which are not reversible and are permanent
MAGNITUDE OF CHANGE
VERY HIGH / UNKNOWN
Loss of resource, significantly affecting the long term quality and integrity of a resource; irreparable damage or loss of key characteristics, features or elements; or the magnitude is too great to quantify as it is unknown.
HIGH / MAJOR
Loss of resource, and quality and integrity of resource; severe damage to key characteristics, features or elements; or
Large scale or major improvement of resources quality; extensive restoration or enhancement; major improvement of attribute quality.
MODERATE
Loss of resource, but not adversely affecting its integrity; partial loss of/damage to key characteristics, features or elements; or
Benefit to, or addition of, key characteristics, features or elements; improvements of attribute quality.
LOW / MINOR
Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (or maybe more) key characteristic, feature or element; or
Minor benefit to, or addition of, one (or maybe more) key characteristic, feature or element; some beneficial effect on attribute quality or a reduced risk of a negative effect occurring.
NONE / NEGLIGIBLE
Very minor loss or detrimental alteration to one (or maybe more) characteristic, feature or element; or
Very minor benefit to, or positive addition of, one (or maybe more) characteristic, feature or element.
DURATION
TEMPORARY
Transient; a period of less than 1 year
SHORT TERM
Impacts that are likely to last for the duration of the activity causing the impact and are recoverable (1-5 years)
MEDIUM TERM
Impacts that are likely to continue after the activity causing the impact and are recoverable (5-15 years)
LONG TERM
Impacts that are likely to last far beyond the end of the activity causing the damage (greater than 15 years with impact ceasing after decommissioning of the project)
PERMANENT
SCALE OF CHANGE - EXTENT / GEOGRAPHIC SCALE
ON-SITE
Impacts that are limited to the boundaries of the proposed project site
LOCAL
Impacts that occur in the local area of influence, including around the proposed site and within the wider community
REGIONAL
Impacts that affect a receptor that is regionally important by virtue of scale, designation, quality or rarity.
NATIONAL
Impacts that affect a receptor that is nationally important by virtue of scale, designation, quality or rarity.
INTERNATIONAL
Impacts that affect a receptor that is nationally important by virtue of scale, designation, quality or rarity.
PROBABILITY
IMPROBABLY (RARE)
The event may occur in exceptional circumstances yet, rarely occurs in the industry. The event could occur once every 100 years
LOW PROBABILITY (UNLIKELY)
The event has happened elsewhere yet, is unlikely to occur. The event could occur once every 10 years
MEDIUM PROBABILITY (POSSIBLE)
The event could occur under some circumstances. The event could occur once every 5 years.
HIGH PROBABILITY (LIKELY)
The event is expected to occur. The event could occur twice per year
DEFINITE (ALMOST CERTAIN)
The event will occur. The event could occur once per month

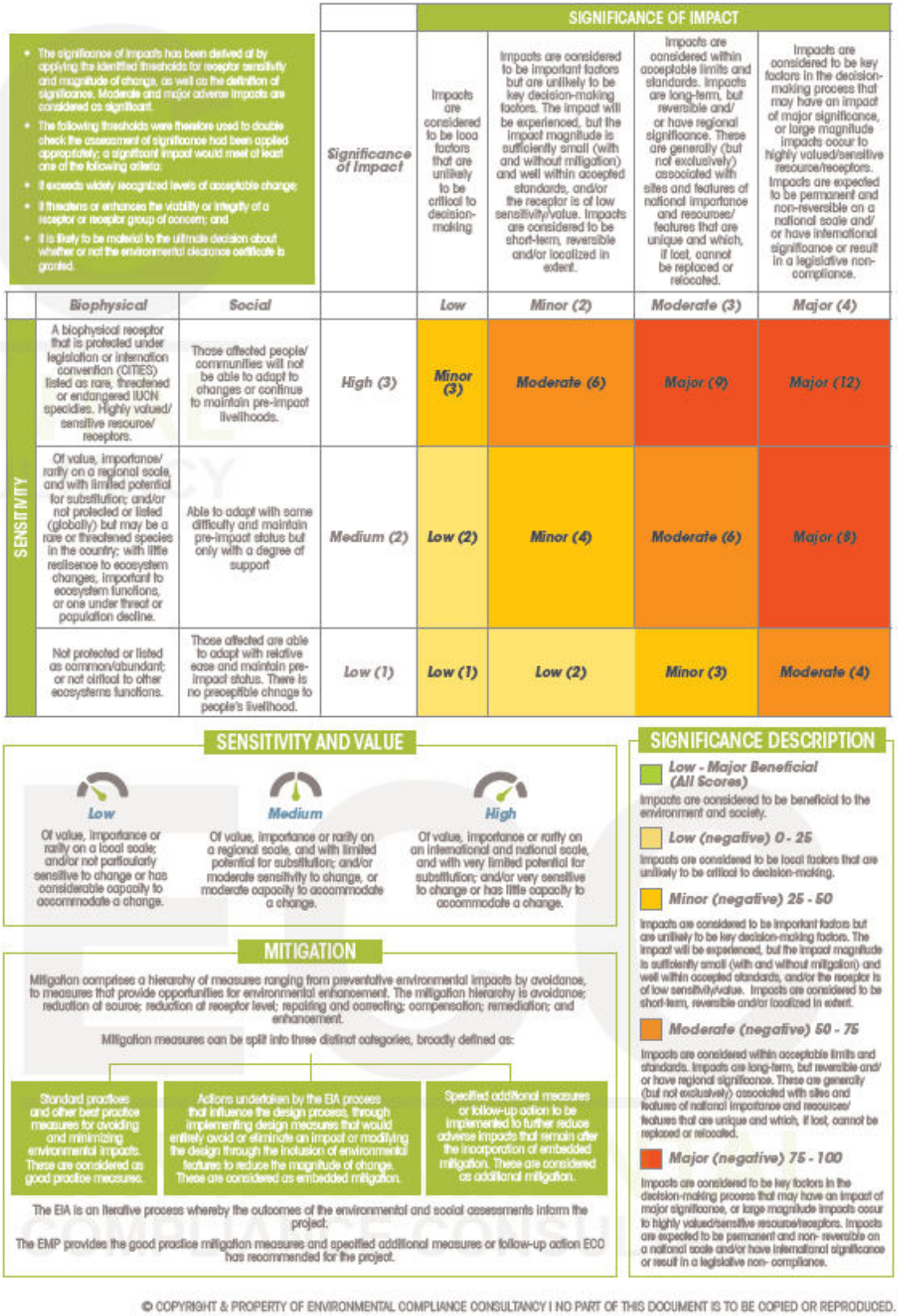


Figure 13 - ECC ESIA methodology based on IFC standards.

6.2 ASSESSMENT GUIDANCE

The principal documents used to inform the assessment method are:

- International Finance Corporation standards and models, in particular Performance Standard 1, 'Assessment and management of environmental and social risks and impacts' (International Finance Corporation, 2017) (International Finance Corporation, 2012);
- International Finance Corporation CIA and Management Good Practice Handbook (International Finance Corporation, 2013); and,
- Namibian Draft Procedures and Guidance for EIA and EMP (Republic of Namibia, 2008).

6.3 LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS

The limitations and uncertainties associated with the assessment methodology in Namibia were observed to include the absence of topic-specific assessment guidance, with a generic methodology being applied based on IFC guidance and professional judgement. This implies that there may be limitations in terms of tailoring the assessment to specific topics or issues relevant to Namibia, and that the methodology may not fully capture the unique characteristics and nuances of the local context.

The impact assessment process also acknowledged the presence of uncertainties, and assumptions were made based on realistic worst-case scenarios to ensure that potential environmental impacts were identified and assessed comprehensively. These assumptions and uncertainties were identified and documented during the assessment process shown in Table 7 in line with best practice.

A cautious approach was applied where uncertainties existed, allowing for the identification and assessment of potential impacts based on worst-case scenarios. The limitations and uncertainties were acknowledged and described in the baseline section of the assessment, indicating transparency and awareness of potential limitations in the methodology.

It is important to note that the limitations and uncertainties identified in the assessment methodology may introduce potential biases or inaccuracies in the assessment results. Therefore, it is recommended to regularly review and update the methodology to address these limitations and uncertainties, and to ensure that it remains robust and relevant for the specific context of Namibia. Additionally, incorporating stakeholder feedback and local knowledge can also contribute to improving the accuracy and comprehensiveness of the assessment process.

Table 7 - Limitations, uncertainties and assumptions

Limitation/uncertainty	Assumption
Number of access roads and temporary exploration campsites	The making of new tracks or access roads will be avoided as far as possible, and existing tracks and routes will be used as far as possible. While every effort will be made to minimise environmental damage, in some cases it will be necessary to clear some vegetation. Temporary campsites near the drill sites may be required.
The program of exploration works is not confirmed	It is assumed that exploration work shall be undertaken in campaigns over the course of the current licence or renewal period. Activities involve drilling; aerial or remote sensing; and mineral sampling. The incremental methodology for exploration is aimed at using minimally invasive techniques early on to eliminate potential sub-economic targets to reduce footprint impact.
Number of workers, the area from where they will come and accommodation	It is planned that approximately ten people will be contracted for the proposed exploration stage of the project per drill rig. Contractors will camp s close to the exploration sites as possible to minimise travel impacts.
Structures	No permanent infrastructure will be developed during any phase of project exploration activities.

7 IMPACT ASSESSMENT FINDINGS AND PROPOSED MITIGATION MEASURES

7.1 INTRODUCTION

This chapter presents the findings of the impact assessment for the proposed project, with a focus on significant potential impacts. The design of the proposed project and best practice measures were considered during the assessment to identify likely significant impacts and recommend mitigation measures. A summary list of potential impacts was provided, including water (surface and groundwater), soil, landscape (visual impacts, sense of place), socioeconomics (employment, demographics, and land use), noise, ecology (fauna and flora), air quality (emissions, pollutants, and dust), and heritage (including culture, history, archaeology, and palaeontology).

Table 8 outlines the impact assessment findings, identifying the activities that could be the source of impacts, the receptors that could be affected, and the pathways between them. Where activities or receptors have not been identified and analysed, potential impacts are deemed unlikely, and no assessment or justification is provided. Justification for further assessment may or may not be required where the activity, receptor, and pathway have been identified and analysed.

The nature and localised scale of the exploration activities and the environmental context of the EPL is expected to limit the potential environmental and social effects, should they occur. However, uncertainties related to the potential increase in movements and presence of people, which may lead to illegal and covert activities such as poaching, stock theft, and collection of organisms, were identified. Accidental veld fires may also increase with the presence of contractor personnel, potentially affecting terrestrial ecology and biodiversity in Namibia, as well as local landowners and their neighbours. Mitigation measures are recommended and provided in Table 8 to address these potential impacts.

Cumulative impacts resulting from physical disturbance, noise, dust, and loss of sense of place may be experienced by farm owners, neighbours, visitors, and tourists. Mitigation measures are recommended and provided in Table 8 to address these impacts. Precautions must also be taken to prevent damage to heritage sites, and a chance find procedure will be implemented if paleontological remains are discovered during exploration activities. With the necessary mitigation measures in place, the significance of the impact reduces from moderate to minor, as outlined in the report.

It is important to ensure that the recommended mitigation measures are effectively implemented and monitored during project implementation to minimise potential impacts and ensure compliance with environmental regulations and best practices. Regular monitoring and review of the impacts and effectiveness of mitigation measures should also be conducted throughout the project lifecycle

to address any emerging issues and make necessary adjustments to the mitigation measures as needed.

All necessary precautions should be taken to prevent damage to heritage sites in case paleontological remains are discovered during exploration activities. The chance find procedure, as outlined in the report, should be implemented in such cases. With the recommended mitigation measures in place (as provided in Table 8), the significance of the impact is expected to reduce from moderate to minor.

It is important to ensure that the chance find procedure is followed diligently to prevent any harm to the discovered heritage sites. This may include halting or modifying the exploration activities in the vicinity of the site, conducting further assessments to determine the extent and significance of the paleontological remains, and implementing appropriate mitigation measures to protect and preserve the heritage site.

Regular monitoring and review of the chance find procedure and effectiveness of the mitigation measures should be conducted throughout the project implementation to address any emerging issues and ensure compliance with relevant regulations and best practices. Any updates or changes to the chance-find procedure or mitigation measures should be documented and communicated to relevant stakeholders as needed.

Furthermore, it is important to involve relevant experts, such as palaeontologists or archaeologists, in the implementation of the chance find procedure and in assessing the significance of the paleontological remains. Their expertise can help ensure that appropriate measures are taken to protect and preserve the heritage sites and their findings.

Overall, the report should provide clear and comprehensive information on the chance find procedure, mitigation measures, and the expected reduction of impact significance from moderate to minor, based on the implementation of these measures. It should also highlight the importance of diligent adherence to the chance find procedure and regular monitoring and review of the mitigation measures to minimise potential impacts on heritage sites during the exploration activities.

Table 8 - Impact assessment findings and proposed mitigation measures.

Description	**Details**	
Aspect	Water	
Description of activity	Site operations such as maintenance activities could lead to compromised containment of hazardous materials, e.g., accidental fuel / hydraulic fluid leaks and spills, or similar sources	
Description of impact	Hydrocarbon leaks and spills could enter the Orange Groundwater Basin (aquifer) causing contamination	
Assessment of impact	**Receptor**	**Groundwater quality**

Description	Details	
	Effect/description of the magnitude	Adverse Direct Irreversible Moderate long term Regional Low probability
	Value of sensitivity	Medium
	Magnitude of change	Moderate
	Significance of impact prior to mitigation	Minor (4)
Impact management/control measures	– Good housekeeping and training through toolbox talks and induction – All stationary vehicles and machinery must have drip trays to collect leakages of lubricants and oil – Spill kits and absorption material must be available during fuel delivery, storage or use – Accidental spills and leaks (including absorption material) must be cleaned as soon as possible – Major spills (significant release of chemicals or materials that pose a major health and safety risk to persons or damage to the environment that requires outside assistance to clean up) to be reported, also to the authorities – Maintenance and service schedules on equipment is in place – Store bulk fuel (200L or more) in adequate containment areas (non-porous surface, bunded) and discard damaged containers – Refuelling must be done in areas with adequate preventative measures in place – Servicing of equipment must not be done in the field	
Residual impact after mitigation	**Minor (3)**	

Aspect	Water	
Description of activity	Potential spillages of drill fluid, lubrication, etc. or drilling that penetrates the water table	
Description of impact	Hydrocarbon leaks and spills could enter the aquifer causing contamination	
Assessment of impact	**Receptor**	**Groundwater quality**
	Effect/description of the magnitude	Adverse Direct Irreversible Moderate long term Regional Low probability
	Value of sensitivity	Medium
	Magnitude of change	Moderate
	Significance of impact prior to mitigation	Minor (4)
Impact management/control measures	Ensure spill kits and preventative measures (e.g., drill pads) are in place at exploration sites	
Residual impact after mitigation	**Low (1)**	

Description	Details	
Aspect	Water – surface and groundwater	
Description of activity	Discharge and infiltration of non-contained wastewater	
Description of impact	Wastewater can contaminate surface and groundwater	
Assessment of impact	**Receptor**	**Surface and groundwater**
	Effect/description of the magnitude	Adverse Direct Irreversible High/Major long term Regional Low probability
	Value of sensitivity	High
	Magnitude of change	High/Major

Description	Details	
	Significance of impact prior to mitigation	Moderate (6)
Impact management/control measures	– All wastewater discharges must be contained, and if possible recycled in the drilling process – Unrecyclable wastewater must be removed from site and taken to site where discharge of wastewater is permitted. – Workers will be made aware of the importance of wastewater management – Good housekeeping – Ensure prompt clean-up of spills – Contaminated soils should be remediated on-site	
Residual impact after mitigation	**Minor (3)**	

Description	Details	
Aspect	Water – Surface and groundwater	
Description of activity	Inadequate management of solid waste	
Description of impact	Waste items and litter can pollute drainage channels	
Assessment of impact	**Receptor**	**Surface and ground water**
	Effect/description of magnitude	Adverse Cumulative Reversible Minor Temporary On-site Unlikely
	Value of sensitivity	Low
	Magnitude of change	Low
	Significance of impact prior to mitigation	Low (1)
Impact management/control measures	– Good housekeeping – Training and awareness through toolbox talks and induction – Implement a Standard Operational Procedure (SOP) on waste management, for all kinds of waste possible on-site (e.g., domestic, mineral, hydrocarbons, hazardous) – No hazardous waste should be stored on-site – Implement a culture of correct waste collection, waste segregation and waste disposal	
Residual impact after mitigation	**Low (1)**	

Description	Details	
Aspect	Soil – Impacts	
Description of activity	Inadequate management of hazardous and hydrocarbon waste	
Description of impact	Pollution of soil	
Assessment of impact	**Receptor**	**Soil**
	Effect/description of the magnitude	Adverse Direct Reversible Minor Short term On-site Possible

Description	Details	
	Value of sensitivity	Low
	Magnitude of change	Minor
	Significance of impact prior to mitigation	Low (2)
Impact management/control measures	– Good housekeeping – Training and awareness through toolbox talks and induction – Implement a Standard Operational Procedure (SOP) on waste management, for all kinds of waste possible on-site (e.g., domestic, mineral, hydrocarbons, hazardous) – Avoid hazardous waste on site – Implement a culture of correct waste collection, waste segregation, recycling and waste disposal – Contaminated soil should be remediated off-site, either by the Proponent at their own bioremediation site or taken to the Walvis Bay or Windhoek hazardous waste site	
Residual impact after mitigation	**Low (1)**	

Description	Details	
Aspect	Terrestrial ecology and biodiversity	
Description of activity	Vegetation clearing for access routes, drill pads and temporary contractor's camp	
Description of impact	Loss / alteration of terrestrial habitats and loss of species	
Assessment of impact	**Receptor**	**Terrestrial ecology and biodiversity**
	Effect/description of magnitude	Adverse Direct Reversible Minor Short term On-site Possible
	Value of sensitivity	Low
	Magnitude of change	Minor
	Significance of impact prior to mitigation	Low (2)

Description	Details
Impact management/control measures	– Use existing roads for access to avoid new tracks and cut lines. – Minimise clearance areas through proper planning of the exploration activities. – Where necessary, rescue and relocate plants of significance under the supervision. – Promote revegetation of cleared areas where possible upon completion of exploration activities. – Apply for vegetation clearing permits before removing any vegetation.
Residual impact after mitigation	**Low (1)**

Description		
Aspect	Terrestrial ecology and biodiversity	
Description of activity	Ambient noise and vibration caused by moving or stationary machinery and equipment (e.g., drill rigs, generators, vehicles, aeroplanes)	
Description of impact	Resident, slow-moving and nesting organisms may be disturbed by excessive noise or vibration	
Assessment of impact	**Receptor**	**Terrestrial ecology and biodiversity**
	Effect/description of the magnitude	Adverse Direct Reversible Minor Short term On-site Likely
	Value of sensitivity	Low
	Magnitude of change	Minor
	Significance of impact prior to mitigation	Low (2)
Impact management/control measures	– Restrict excessive noise to areas of activities only – No activities between dusk and dawn if close to sensitive receptors – Drill equipment shall be suitably positioned to ensure that noisy equipment is away from receptors – Maintain and carry out routine equipment checks – All equipment to be shut down or throttled back between periods of use.	

Residual impact after mitigation	**Low (1)**

Description	**Details**	
Aspect	Terrestrial ecology and biodiversity	
Description of activity	Increased movement of vehicles, machinery, and equipment	
Description of impact	Resident and nesting organisms such as reptiles can be disturbed, injured or killed	
Assessment of impact	**Receptor**	**Terrestrial ecology and biodiversity**
	Effect/description of magnitude	Adverse Direct Partly reversible Moderate Short term On-site Possible
	Value of sensitivity	Low
	Magnitude of change	Minor
	Significance of impact prior to mitigation	Low (2)
Impact management/control measures	– Restrict movements to areas of activities only – Use existing tracks and routes only – Identify rare, endangered, threatened and protected species in advance – Route new tracks around protected species and sensitive areas – Restrict movements to daytime hours or with adequate nighttime driving lights – No driving off designated access routes (into the bush) / off-road driving – No animals or birds may be collected, caught, consumed, or removed from site	
Residual impact after mitigation	**Low (1)**	

Description	**Details**
Aspect	Terrestrial ecology and biodiversity
Description of activity	Increased disturbance of areas with natural vegetation
Description of impact	Alien species and weeds can be introduced to the area

Description	Details	
Assessment of impact	**Receptor**	**Terrestrial ecology and biodiversity**
	Effect/description of the magnitude	Adverse Direct Irreversible High/Major Permanent Local Possible
	Value of sensitivity	Medium
	Magnitude of change	High/Major
	Significance of impact prior to mitigation	Minor (4)
Impact management/control measures	– All project equipment arriving on site from an area outside of the project or coming from an area of known weed infestations (not present on the project site) should have a weed and seed inspection completed prior to equipment being used – Monitor areas for weed and alien species where exploration was active – Eradicate weeds and alien species as soon as they appear – Make workers aware of alien species and weeds	
Residual impact after mitigation	**Low (2)**	

Description	Details	
Aspect	Terrestrial ecology and biodiversity	
Description of activity	Accidental and uncontrolled fire	
Description of impact	Loss of grazing and organisms dying from a veld fire	
Assessment of impact	**Receptor**	**Terrestrial ecology and biodiversity**
	Effect/description of the magnitude	Adverse Direct Partly Reversible Low Short Term Local Unlikely
	Value of sensitivity	low
	Magnitude of change	Negligible
	Significance of impact prior to mitigation	Low (2)

Description	Details
Impact management/control measures	– Restrict movements of people to areas of activities only – Ensure proper cooking facilities at the contractor's campsite – No cigarette buts should be discarded but contained and disposed of at an appropriate facility – Proper fire hazard identification signage to be placed in areas that store flammable material (i.e., hydrocarbons and gas bottles) – Control and reduce the potential risk of fire by segregating and storing materials safely – Avoid potential sources of ignition by prohibiting smoking in and around certain facilities – Firefighting equipment should always be at designated areas and should be maintained and checked regularly
Residual impact after mitigation	**Low (1)**

Description	Details	
Aspect	Soil	
Description of activity	Drilling and the use of drilling equipment	
Description of impact	Loss of soil quality due to mixing of earth matter, trampling and compaction	
Assessment of impact	**Receptor**	**Soil**
	Effect/description of the magnitude	Adverse Direct Reversible Moderate Short term On-site Possible
	Value of sensitivity	Low
	Magnitude of change	Minor
	Significance of impact prior to mitigation	Low (2)
Impact management/control measures	– Ensure erosion control and prevention measures are in place when vegetation clearance is required – Where necessary, plan access routes, drill pads and camps outside of existing drainage lines – Where necessary, install diversions to curb possible erosion – Restore drainage lines when disturbed	
Residual impact after mitigation	**Low (1)**	

Description	Details	
Aspect	Community	
Description of activity	Airborne surveying over the EPL, possible low flying	
Description of impact	The perceived impact from surveying activities on wild animals, livestock and humans	
Assessment of impact	**Receptor**	**Community and livestock**
	Effect/description of the magnitude	Adverse indirect Reversible Minor Temporary Local Unlikely
	Value of sensitivity	Low
	Magnitude of change	Minor
	Significance of impact prior to mitigation	Low (2)
Impact management/control measures	– 2 weeks prior to conducting aerial surveying, affected parties should be informed. – The following information is to be included in the written communication sent affected parties: ➢ Company name, ➢ Survey dates, time and duration, ➢ Purpose of the survey, ➢ Flight altitude, ➢ Survey location, Map of survey area and flight lines, and ➢ Contact details for enquiries. – Comply with all applicable laws and agreements – Maintain continuous engagement with residents to identify any concerns or issues, and appropriate mitigation and management measures agreed upon – Ensure appropriate supervision of all activities	
Residual impact after mitigation	**Low (1)**	

Description	Details
Aspect	Heritage
Description of activity	Drilling activities, movement of machinery and vehicles
Description of impact	Potential damage to cultural heritage sites and artifacts

Assessment of impact	Receptor	Heritage
	Effect/description of the magnitude	Adverse Direct Irreversible High Permanent On-site Possible
	Value of sensitivity	High
	Magnitude of change	Minor
	Significance of impact prior to mitigation	Moderate (6)
Impact management/control measures	– Implement a Chance Find Procedure – Raise awareness about possible heritage finds – Report all finds that could be of heritage importance – In case archaeological remains to be uncovered, cease activities and the site manager must assess and demarcate the area – Project manager to visit the site and determine whether work can proceed without damage to findings, mark exclusions boundary and inform ECC with GPS position – If needed, further investigation must be requested for a professional assessment and the necessary protocols of the Chance Find Procedure have to be followed, – Archaeologist will evaluate the significance of the remains and identify appropriate action, (record and remove; relocate or leave premises, depending on the nature and value of the remains), – Inform the police if the remains are human, – Obtain appropriate clearance or approval from the competent authority, if required, and recover and remove the remains to the National Museum or National Forensic Laboratory as directed. – Activities on the same site may resume once the green light is given by the relevant competent authority.	
Residual impact after mitigation	**Minor (4)**	

Description	Details	
Aspect	Air quality	
Description of activity	– Drilling activities, resulting in dust emissions – Windblown dust from exposed/cleared land during exploration activities	
Description of impact	Air quality, visual disturbance and loss of sense of place from dust plumes	
Assessment of impact	**Receptor**	**Community**
	Effect/description of magnitude	Adverse Direct Reversible Moderate Temporary Local Likely
	Value of sensitivity	low
	Magnitude of change	low
	Significance of impact prior to mitigation	Low (1)
Impact management/control measures	– Apply dust suppression where possible – Restrict speed of vehicles (<30km/h) – Specific activities that may generate dust and impact nearby farmers or tourists. – Dust generating activities should be avoided during strong wind events – All vehicles and machinery / equipment to be shut down or throttled back between periods of use – Barriers or fences shall be used if drilling occurs in locations that may affect farmers, farmer's livestock or tourists passing by along the dirt roads. – Maintain good housekeeping	
Residual impact after mitigation	**Low (1)**	

Description	Details	
Aspect	Community	
Description of activity	Movement of vehicles, exploration activities	
Description of impact	Presence of exploration team could be blamed for stock theft and poaching	
Assessment of impact	**Receptor**	**Community**
	Effect/description of magnitude	Adverse

Description	Details	
		Cumulative Reversible Minor Temporary Local Unlikely
	Value of sensitivity	Low
	Magnitude of change	Low
	Significance of impact prior to mitigation	Low (1)
Impact management/control measures	– Develop and implement an environmental management plan or procedures for working on farmlands – Implement monitoring programmes and keep register of vehicle movement. – Maintain continuous engagement with authorities to identify any concerns or issues, and employ appropriate mitigation and management measures where applicable – Ensure appropriate supervision of all activities is maintained – Raise awareness and sensitise employees about contentious issues such as stock theft and poaching – Accidents and incidents need to be reported to the project manager and recorded in the incident register	
Residual impact after mitigation	**Low (1)**	

Description	Details	
Aspect	Visual	
Description of activity	Creation of roads and tracks	
Description of impact	The creation of access roads and tracks up mountains will tarnish the scenic environment	
Assessment of impact	**Receptor**	**Community**
	Effect/description of the magnitude	Adverse Direct Irreversible High/Major Permanent On-site Likely
	Value of sensitivity	Medium
	Magnitude of change	High/Major
	Significance of impact prior to mitigation	Moderate (6)

Description	Details
Impact management/control measures	– Make use of existing roads – design new roads to maximise post-exploration land use potential – Keep road footprint to a minimum – Consult stakeholders during the design and location of roads.
Residual impact after mitigation	**Minor (4)**

8 CONCLUSION

ECC's ESIA methodology was used to undertake the environmental assessment for the proposed exploration activities on EPL 7574, to identify if there is potential for significant effects to occur as a result of the proposed Project.

Through the scoping process, the only risk to the environment is related to the cumulative impacts as a result of physical disturbance, nuisance of noise and dust and the loss of sense of place, thereby impacting human receptors in the area. Impacts with respect to airborne dust are expected to be limited to vehicular traffic and drilling activities. There will be some release of exhaust fumes from machinery that will impact the immediate vicinity but will be of short duration. Additionally, there will be associated drilling and machinery noise, which could be a disturbance to immediate neighbours, but this will be of short duration as well. Through further analysis and identification of mitigation and management methods, the assessment concludes that the likely significance of effects on humans from the cumulative impacts of physical disturbance, noise, dust and emissions will be a temporary qualitative reduction in the sense of place and expected to be low. Prior awareness and communication about the project shall be encouraged.

Due to the increased movements and presence of people, there is a potential that illegal and covert activities such as poaching, stock theft and the collection of organisms can be introduced to the area. Similarly, the potential of accidental veld fires may increase. In both cases the terrestrial ecology and biodiversity of Namibia is the receptor, although local landowners and their neighbours may experience these adversities first-hand. Through this investigation the significance of both impacts is indicated as low. In both cases numerous mitigation measures, with proven national success, exist and were also applied to reduce the significance to low.

Heritage sites may exist around and within the EPL. All precautions must be taken to prevent damage to heritage sites, as a result of the exploration activities. The chance find procedure will be implemented in such a case. With the necessary mitigation in place, the significance reduces from moderate to minor.

All other social and environmental receptors were scoped out as significant effects were unlikely and therefore no further assessment was deemed necessary. Various best practice and mitigation measures have been identified to avoid and reduce effects as far as reasonably practical, as well as ensure the environment is protected and unforeseen effect and environmental disturbances are avoided

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APPENDIX A – ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

APPENDIX B – PUBLIC CONSULTATION RECORDS

APPENDIX C – HERITAGE ASSESSMENT

APPENDIX D – NBRI SPECIES LIST

APPENDIX E – EAP CVS

CONTINENTAL LITHIUM AFRICA

Submitted to: Karas Lithium Resources (Pty) Ltd.
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REPORT:

EXPLORATION ACTIVITIES ON EPL 7574 – PRELIMINARY ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

PROJECT NUMBER:	ECC-139-449REP-05-A
REPORT VERSION:	REV 01
DATE:	31 JULY 2023

TITLE AND APPROVAL PAGE

Project Name:	Exploration activities on EPL 7574 – preliminary environmental and social management plan
Client Company Name:	Karas Lithium Resources (Pty) Ltd.
Client Name:	Mr William Morrell
Ministry Reference:	APP-001259
Authors:	Environmental Compliance Consultancy (Pty) Ltd
Status of Report:	Final for public review
Project Number:	ECC-139-449REP-05-A
Date of issue:	31 July 2023
Review Period	31 July 2023 – 6 August 2023

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DISCLAIMER

The report has been prepared by Environmental Compliance Consultancy Pty Ltd (ECC) (Reg. No. 2022/0593) on behalf of the Proponent. Authored by ECC employees with no material interest in the report's outcome, ECC maintains independence from the Proponent and has no financial interest in the Project apart from fair remuneration for professional fees. Payment of fees is not contingent on the report's results or any government decision. ECC members or employees are not, and do not intend to be, employed by the Proponent, nor do they hold any shareholding in the Project. Personal views expressed by the writer may not reflect ECC or its client's views. The environmental report's information is based on the best available data and professional judgment at the time of writing. However, please note that environmental conditions can change rapidly, and the accuracy, completeness, or currency of the information cannot be guaranteed.

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TERMS AND ABBREVIATIONS

TERM OR ABBREVIATION	DESCRIPTION
Competent Authority	Government Ministry that assists the MEFT in assessing a project and issuing a record of decision
dBA	decibels
DEA	Directorate of Environmental Assessment
DWA	Department of Water Affairs
E	endemic
EAP	environmental assessment practitioner
ECC	Environmental Compliance Consultancy
ECC	environmental clearance certificate
EHS	environmental health and safety
EIA	environmental impact assessment
EMA	Environmental Management Act
EMP	environmental management plan
EPLs	exclusive prospecting licences
ESIA	environmental and social impact assessment
g/t	grams per tonne
GDP	gross domestic product
GG	government gazette
GN	government notice
ha	hectares
IFC	International Finance Corporation

1 INTRODUCTION

1.1 PROJECT BACKGROUND

Environmental Compliance Consultancy (ECC) has been retained by Karas Lithium Resources (Pty) Ltd (herein after referred to as 'the proponent'). ECC is conducting an environmental impact assessment (EIA) for exploration and prospecting activities on Exclusive Prospecting Licence (EPL) 7574

The Proponent has obtained an EPL from MME; now requires an environmental clearance from DEA/MEFT for the search of for base and rare metals, industrial minerals (lithium and tantalum), non-nuclear fuels, precious metals, and precious stones.

The proposed Project will conduct ground truthing to all defined target areas (pegmatite bodies), rock chips (grab) sampling, geological mapping, soil sampling downhill of orebodies. Channel sampling and geochemical analysis of samples will be collected and analysed by assay laboratories. To define the mineralization below the surface, either a Reverse Circulation (RC) technique or diamond core (DD) drill survey will be used.

located south of Karasburg near the Orange River. The EPL overlaps farm Pelladrift, Oranje Fall, Kambreek and Pelgrimrust and can be accessed via the B3 to Karasburg and then the C10. The location of EPL 7574 is shown in Figure 1.

ECC has compiled this environmental management plan (EMP) in terms of the Environmental Management Act (EMA) of 2007 and its regulations of 2012. The purpose of this EMP is to support the full environmental impact assessment (EIA) report.

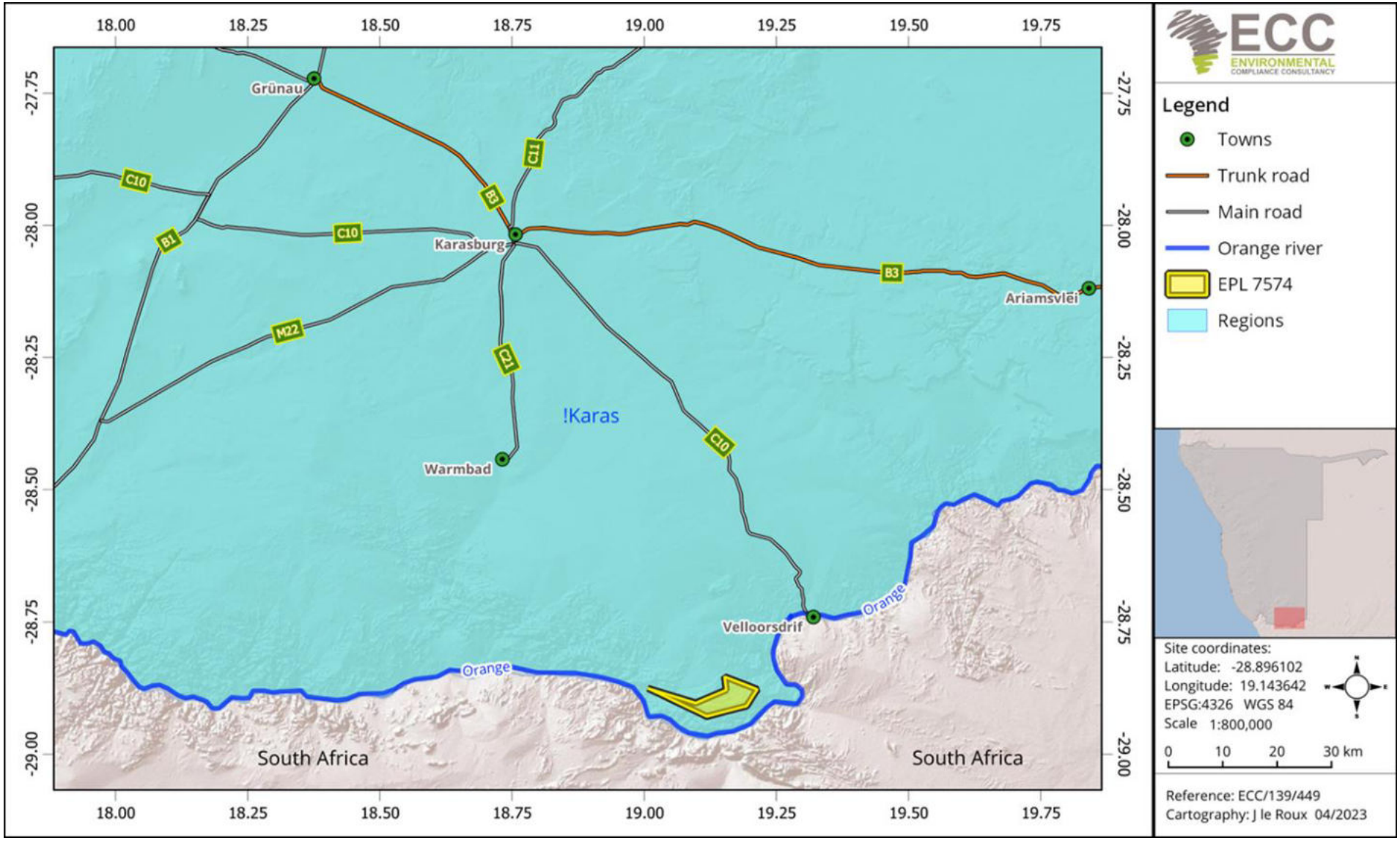

Figure 1 - Project location and regions

1.2 ENVIRONMENTAL REGULATORY REQUIREMENTS

The proposed Project is considered as a listed activity as stipulated in the Environmental Management Act, No. 7 of 2007 and its Regulations, promulgated in 2012. An environmental scoping report, environmental impact assessment (EIA) and environmental management plan (EMP) are required to be submitted as part of the application to support the decision-making process for issuing an environmental clearance certificate.

This report presents the EMP and has been undertaken in terms of the requirements of the Environmental Management Act, 2007 and its Regulations.

1.3 PURPOSE AND SCOPE OF THIS REPORT

The preliminary environmental management plan (hereafter referred to as the EMP) provides a logical framework, mitigation measures and management strategies for the activities associated with the proposed Project. In this way ensuring that the potential environmental impacts are curbed and minimised as far as practically possible and that statutory and other legal obligations are adhered to and fulfilled. Outlined in the EMP are the protocols, procedures and roles and responsibilities to ensure the management arrangements are effectively and appropriately implemented.

The EMP forms an appendix to the environmental scoping report and is based on the findings of the assessments carried out to date. The environmental scoping report should be referred to for further information on the proposed Project, assessment methodology and terms of reference (ToR), applicable legislation, and assessment findings.

This EMP is a live document and shall be reviewed at predetermined intervals, and or updated during the EIA process when or if the scope of work alters, or when further data or information is added. All personnel working on the Project will be legally required to comply with the requirements set out in the final draft EMP that is approved by the competent authorities and Ministry of Environment, Forestry and Tourism (MEFT).

The scope of this EMP includes all activities associated with the expansion activities undertaken.

1.4 MANAGEMENT OF THIS EMP

The proponent, will hold the environmental clearance certificate for the proposed project and will be responsible for the implementation and management of this EMP. Before the construction activities commence, this EMP will be reviewed, amended as required and approved ready for implementation. The implementation and management of this EMP, and thus the monitoring of compliance, will be undertaken through daily duties and activities, as well as monthly inspections.

1.5 LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS RELATED TO THIS EMP

This EMP does not include measures for compliance with statutory occupational health and safety requirements. This will be provided in the safety management plan to be developed by the Proponent.

Where there is any conflict between the provisions of this EMP and any contractor's obligations under their respective contracts, including statutory requirements (such as licences, project approval conditions, permits, standards, guidelines, and relevant laws), the contract should be amended, and statutory requirements are to take precedence.

The information contained in this EMP has been based on the project description as provided in the EIA report. Where the operation methods is different, this EMP may require updating and potential further assessment may be undertaken.

1.6 ENVIRONMENTAL ASSESSMENT PRACTITIONER

The report has been prepared by Environmental Compliance Consultancy Pty Ltd (ECC) (Reg. No. 2022/0593) on behalf of the Proponent.

Authored by ECC employees with no material interest in the report's outcome, ECC maintains independence from the Proponent and has no financial interest in the Project apart from fair remuneration for professional fees. Payment of fees is not contingent on the report's results or any government decision. ECC members or employees are not, and do not intend to be, employed by the Proponent, nor do they hold any shareholding in the Project. Personal views expressed by the writer may not reflect ECC or its client's views. The environmental report's information is based on the best available data and professional judgment at the time of writing. However, please note that environmental conditions can change rapidly, and the accuracy, completeness, or currency of the information cannot be guaranteed.

All compliance and regulatory requirements regarding this report should be forwarded by email or posted to the following address:

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2 ENVIRONMENTAL MANAGEMENT FRAMEWORK

This EMP provides measures, guidelines, and procedures for managing and mitigating potential environmental impacts. The EMP also indicates monitoring and reporting guidelines and sets responsibilities for those carrying out management and mitigation measures.

2.1 OBJECTIVES AND TARGETS

Environmental objectives and targets have been developed so that exploration activities can minimise potential impacts on the environment, as far as reasonably practicable.

Environmental objectives for the Project are as follows:

- Zero pollution incidents;
- Minimal vegetation clearing and earthworks;
- Minimal impact on regional groundwater users;
- Protect local flora and fauna, and
- Use natural resources effectively and efficiently.

2.2 ORGANISATIONAL STRUCTURE, ROLES AND RESPONSIBILITIES

The Proponent shall provide a Project team to oversee and undertake the preparation and expansion activities, which will be composed of the Proponent's personnel and contractors. A nominated role shall be identified to ensure the management and implementation of this EMP is carried out throughout the Project Life. The Proponent shall be responsible for:

- Ensuring all members of the project team, including contractors, comply with the procedures set out in this EMP;
- Ensuring that all persons are provided with sufficient training, supervision, and instruction to fulfil this requirement;
- Ensuring that any persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood; and
- Contractors shall be responsible for ensuring and demonstrating that all personnel employed by them are compliant with this EMP, and meet the responsibilities listed above.

Error! Reference source not found. lists the roles and responsibilities allocated to different m anagement levels in the company and specific personnel.

Table 1 - Roles and responsibilities

ROLE	RESPONSIBILITIES AND DUTIES
Proponent	– Responsible for the overall management and implementation of the EMP; – Ensure environmental policies are drafted/updated and communicated to all personnel throughout the company;

ROLE	RESPONSIBILITIES AND DUTIES
	– Responsible for providing the resources required to effectively run operations and comply with the EMP; – Appoint all managers needed to ensure effective running of operations; and – Ensure systems for proper induction and training of personnel and contractors are in place.
Exploration management	– Manage all activities on the exploration project; – Monitor operations and ensure systems are in place for implementation of the EMP; – Maintain the community issues and concerns register and keep records of complaints; – Ensure corrective action are taken and communicated to complainants, and – Maintain up to date records of employees who have completed training and induction. – Ensure that all contract workers, sub-contractors and visitors to the site are aware of the requirements of this EMP, relevant to their roles and always adhere to this EMP; – Report any non-compliance or incidents; – Receive, recording and responding to complaints; – Ensure adequate resources are available for the implementation of the EMP; – Ensure safe and environmentally sound operations and – Responsible for the management, maintenance, and revisions of this EMP.
HSE (Health, safety and Environment) Appointed Person/ Environmental Manager	– Maintain the exploration operation's environmental management system (EMS). – Draft and update exploration operation specific environmental procedures. – Ensure on-site induction training is relevant and address issues from this EMP. – Do all environmental audits and inspections and report findings to relevant personnel. – Check the implementation of corrective action for incidents and complaints. – Ensure all environmental monitoring and reporting is done. – Conduct environmental monitoring, audits and inspections, and – Compile draft environmental reports.
Employees	– Adhere to measures set out in the EMP. – Ensure they have undertaken a site induction.

ROLE	RESPONSIBILITIES AND DUTIES
	– Report any operations or conditions which deviate from the EMP as well as any non-compliant issues or incidents to the environmental manager.

2.3 CONTRACTORS

Any contractors hired during the exploration activities of the operations and for the project duration shall be compliant with this EMP and shall be responsible for the following:

- Undertaking activities in accordance with this EMP as well as relevant policies, procedures, management plans, statutory requirements, and contract requirements.
- Implementing appropriate environmental and safety management measures.
- Reporting of environmental issues, including actual or potential environmental incidents and hazards, to the site manager.
- Ensuring appropriate corrective or remedial action is taken to address all environmental hazards and incidents reported by employees and subcontractors.

2.4 EMPLOYMENT

The Proponent and all contractors shall comply with the requirements of the Republic of Namibia's regulations for Labour, Health and Safety, and any amendments to these regulations. The following shall be complied with:

- In liaison with local government and community authorities, the Proponent shall ensure that local people have access to information about job opportunities and, where they have the prerequisite skills and experience, are considered first for operation/maintenance contract employment positions.
- The number of job opportunities shall be made known together with the associated skills and qualifications to the locals in the area.
- The maximum length of time the job is likely to last for shall be indicated.
- Should foreign workers be hired, the proponent shall ensure that they have a valid work permit at all times.
- Every effort shall be made to recruit from the group of unemployed workers living in the surrounding area for positions that require unskilled work.

2.5 REGISTER ENVIRONMENTAL RISKS AND ISSUES

An environmental review of the proposed Project has been completed to identify all the commitments and agreements made. A list of environmental commitments and risks has been produced, which details deliverables including measures identified for the prevention of pollution or damage to the environment during the expansion phase.

Table 2 provides a list of environmental risks and issues, as well as associated mitigation (as derived from the EIA) and monitoring measures, and the roles responsible for compliance. It

will be subject to regular review by the Manager and updated when necessary. The Exploration Manager and Environmental Manager will use this register to undertake monthly inspections (see next section) to ensure the project is compliant with this EMP.

Table 2 - A list of environmental risks and issues, as well as associated mitigation and monitoring measures.

RECEPTORS	POTENTIAL IMPACTS	MANAGEMENT/MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
Access and site preparation	Disruption of farmland operations	– Compliance with all applicable laws and agreements.	– OHSE Audits and inspections. – Daily	– HSE appointed person /Environmental manager – Exploration manager
	Conflict with farm owners and neighbours	– Ensure documented permission to enter farmlands is obtained from relevant farm owners; – Farm owners should have access to all farms areas at all times; – Existing water points and feeding areas need to be left unaffected, unless otherwise agreed with farm owners; – Use existing roads for access to avoid new tracks as far as practicable and create cut lines with due regard to existing land use activities in the area; – Ensure appropriate supervision of all activities; – Develop and implement an operation manual or procedures to work on farmlands and implement monitoring programmes thereafter; – Maintain continuous engagement with landowners to identify any concerns or issues, and appropriate mitigation and management measures agreed upon and – Incidents need to be reported to the exploration manager and recorded in an incident register.	– OHSE Audits and inspections. – Daily	– Exploration manager
	Limiting access to sites	– Compliance with all applicable laws and agreements.	– OHSE Audits and inspections. – Daily	– Exploration manager

RECEPTORS	POTENTIAL IMPACTS	MANAGEMENT/MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
				– HSE appointed person /Environmental manager
	Potential damage to cultural heritage sites	– Implement a Chance Find Procedure; – Raise awareness about possible heritage finds; – Report all finds that could be of heritage importance; – In case archaeological remains are uncovered, cease activities and the exploration manager has to assess and demarcate the area; – Exploration manager to visit the site and determine whether work can proceed without damage to findings, mark exclusions boundary and inform ECC with GPS position; – If needed, further investigation has to be requested for a professional assessment and the necessary protocols of the Chance Find Procedure have to be followed; – Archaeologist will evaluate the significance of the remains and identify appropriate action, for example, record and remove; relocate or leave premises (depending on the nature and value of the remains); – Inform the police if the remains are human and – Obtain appropriate clearance or approval from the competent authority, if required, and recover and remove the remains to the National Museum or National Forensic Laboratory as directed.	– Chance finds procedure and records	– Exploration Manager
Socio-economic	Job creation for locals	– Maximise local employment and local business opportunities and	– HR recruitment policies and procedures	– HR Manager

RECEPTORS	POTENTIAL IMPACTS	MANAGEMENT/MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– Enhance the use of local labour and local skills as far as reasonably possible.		
	Increased levels of stock theft on farmlands	– Ensure documented permission to enter farmlands is obtained from all relevant farm owners; – Training and raise awareness to sensitize employees about contentious issues such as stock theft and poaching; – Ensure appropriate supervision of all activities and – Raise awareness and sensitize employees about contentious issues such as stock theft and poaching.	– HR recruitment policies and procedures	– HR Manager
Groundwater	Groundwater quality	– Good housekeeping; – Training through toolbox talks and induction; – Ensure drill pads and spill kits are in place; – All vehicles and machinery undergoing maintenance must have drip trays to collect leakages of lubricants and oil; – Consider alternative sites when the water table is too high; – Drill system will be fitted with sumps to direct any accidental spills into containment areas; – Accidental spills and leaks (including absorption material) to be cleaned as soon as possible; – Store bulk fuel in adequate containment areas (non-porous surface and bunded); – No damaged containers in use;	– OHSE Audits and inspections. – Daily	– Exploration Manager – HSE appointed person /Environmental manager

RECEPTORS	POTENTIAL IMPACTS	MANAGEMENT/MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– Major spills to be reported, also to the authorities – Where possible, water from existing water sources shall be used and – Refuelling will be done in areas with adequate preventative measures in place.		
Water	Wastewater can contaminate surface and groundwater	– Wastewater discharges will be contained; – Workers will be made aware about the importance of wastewater management; – Good housekeeping and – Ensure prompt clean-up of spills.	– OHSE Audits and inspections. – Daily	– Exploration Manager – HSE appointed person /Environmental manager
Terrestrial environment and ecology	Loss of biodiversity and habitat	– Use existing roads for access to avoid new tracks and create cut lines with due regard for the existing ecosystem functions in the area; – Minimise clearance areas through proper planning of the exploration activities; – Route new tracks around established and protected trees, and clumps of vegetation; – Identify rare, endangered, threatened and protected species. Avoid, or relocate if avoidance is not possible; – During toolbox talks and induction, highlight to workers so that the removal of significant plants (species of conservational importance) are avoided; – Where possible rescue and relocate plants of significance with the appropriate permits in place beforehand; and	– OHSE Audits and inspections. – Daily	– Exploration Manager – HSE appointed person/Environmental Manager

RECEPTORS	POTENTIAL IMPACTS	MANAGEMENT/MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– Promote revegetation of cleared areas upon completion of the exploration activities.		
	Increase in invasive species in cleared areas	– All project equipment arriving on site from an area outside of the Project or coming from an area of known weed infestations (not present on the project site) should have an internal weed and seed inspection completed prior to equipment being used; – Ensure the potential introduction and spread of alien plants is prevented, and – Ensure the correct removal of alien invasive vegetation and prevent the establishment and spread of alien invasive plants. – Eradicate weeds and alien species as soon as they appear and – Make workers aware about alien species and weeds.	– OHSE Audits and inspections. – Daily	– HSE appointed person/Environmental Manager – Exploration manager
	Residing, nesting and slow-moving organisms can be disturbed, injured or killed by movement of vehicles and equipment	– Restrict movements to areas of activities only; – Use existing tracks and routes as far as possible and develop new accesses in line with remaining EMP controls; – Identify rare, endangered, threatened and protected species in advance; – Route new tracks around protected species and sensitive areas. Avoid, or relocate if avoidance is not possible; – Minimize movements to daytime hours or only use vehicles equipped with suitable night driving lights; – Training and raise awareness to sensitize employees and notify them on avoiding some areas;	– OHSE Audits and inspections; – Daily	– HSE appointed person/Environmental Manager – Exploration manager

RECEPTORS	POTENTIAL IMPACTS	MANAGEMENT/MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– No driving off designated access routes (into the bush) / off-road driving; – No firearms on site; and – No animals or birds may be collected, caught, consumed or removed from site.		
	Accidental and uncontrolled fire	– Equipment to be well maintained and serviced regularly and documented proof kept; – Restrict movements of people to areas of activities only; – Train people and raise awareness about veld fires and firefighting and documented proof kept; – No open fire outside designated areas; – Ensure proper cooking facilities at fly camps; – No cigarette buds are discarded but contained and disposed of at an appropriate facility; – Proper fire hazard identification signage to be placed in areas that store flammable material (i.e. hydrocarbons and gas bottles); – Control and reduce the potential risk of fire by segregating and safe storage of materials; – Avoid potential sources of ignition by prohibiting smoking in and around facilities and – Firefighting equipment and fire breaks should always be at designated areas and should be maintained regularly.	– OHSE Audits and inspections; – Daily – Pre-start checklists on all machines – Incident records management.	– Exploration manager – HSE appointed person/Environmental Manager

RECEPTORS	POTENTIAL IMPACTS	MANAGEMENT/MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
	Risk of spillage of hydrocarbons, chemicals or other dangerous goods/material	– Tailings, chemical and hydrocarbon spillages from trucks, conveyors and pipelines will be cleaned up timeously in order to prevent contamination. – Fuel and chemicals are handled with care; – Spill kits to be at designated areas across the site or available for use during refuelling, fuel/chemical delivery or use. Absorption material should be available and at hand. Where sawdust is used it should be cleaned up immediately and not left for long periods as this poses a fire hazard; – Equipment to be well maintained and serviced regularly and documented proof kept and – A funnel should be available and used to avoid spillage.	– Daily visual inspections – Pre-start checklists on all machines – Incident records management.	– Exploration Manager
	Noise and vibration impact	– Minimize noise generating activities at night, by ensuring noisy activities are avoided especially at night where there are sensitive receptors; – Ensure appropriate measures are put in place to rectify noise and vibration complaints, should they occur; – Scheduling of works to avoid disturbance between the hours of 7 pm and 5 am where there are sensitive receptors, unless night operations unavoidable; – Procedures for receiving complaints from nearby land users or residents to be in place and mitigation	– Noise and vibrational monitoring – Pre-start checklists on all machines	– Exploration Manager

RECEPTORS	POTENTIAL IMPACTS	MANAGEMENT/MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		measures to be implemented should exploration generate excessive noise and vibration. – Drill equipment shall be suitably positioned to ensure that noisy equipment is away from receptors; – Residents shall be provided at least two weeks' notice of drilling operations within 1 km of their property and – All equipment to be shut down or throttled back between periods of use.		
	Waste generation and litter	– Implement the waste management hierarchy across site: Avoid, reuse, recycle, then disposal through burning or dump in a licensed facility; – Waste shall be collected and shall be removed on a regular basis to avoid pests and bad odours; – It is unlikely that hazardous material and wastes will be produced, however in the event that they do, they shall be managed in a safe and responsible manner so as to prevent contamination of soils, pollution of water and/or harm to people or animals as a result of the use of these materials. Proof of waste disposal certificates should be kept on file and – Hazardous and non-hazardous waste shall be stored separately at all times.	– OHSE Audits and inspections; – Waste management inspections, – Safe disposal certificates	– HSE appointed person/Environmental Manager
Soil quality	Soil contamination due to mixing of earth matter, trampling,	– Equipment must be in a good condition to ensure that accidental oil spills do not occur and contaminate soil.	– Pre-start checklists on all machines	– Exploration Manager – Environmental Manager

RECEPTORS	POTENTIAL IMPACTS	MANAGEMENT/MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
	compaction and pollution,	– During drilling plastic liners to be placed underneath rigs to avoid environmental contamination and oil absorbent matting should be available in the event of spillage; – Limit the possibility of compaction and creating of a hard subsurface; – Limit the possibility of trampling; – In the event of spills and leaks, polluted soils must be collected and disposed of at an approved site and – Limit the possibility to mix mineral waste with topsoil.		
	Soil erosion	– Where necessary, install diversions to curb possible erosion; – Restore drainage lines when disturbed and – Topsoil should be stockpiled separately, and re-spread during rehabilitation.	– OHSE Audits and inspections;	– Environmental Manager
Air quality	Increased dust levels	– All vehicles and machinery / equipment to be shut down or throttled back between periods of use; – Use existing access roads and tracks where possible; – Apply dust suppression where possible; – Maintaining speed limits within the EPL that reduce dust; – Restrict speed of vehicles (<30km/h) on farm roads, close to farmhouses or livestock pens/enclosure; and – Specific activities that may generate dust and impact on residents shall be avoided during high wind events.	– Dust fallout monitoring	– Environmental Manager
Visual	Visual disturbances	– Position drill equipment in such a way that it is out of sight from human receptors, where practicable;	– Daily observations	– Exploration Manager

RECEPTORS	POTENTIAL IMPACTS	MANAGEMENT/MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– Barriers or fences around drill sites mandatory to avoid human or animal impacts; – Residents need to be informed at least two weeks in advance that drilling operations are within 1km of their property; – Maintain good housekeeping; – Apply dust suppression where possible; – Maintain continuous communication with I&APs to identify concerns and mitigation measures – Restrict speed of vehicles (<30km/h), on farm roads, close to farmhouses or livestock pens/enclosure – Specific activities that may generate dust and impact on residents shall be avoided during high wind events – All vehicles and machinery / equipment to be shut down or throttled back between periods of use – Maintain good housekeeping – Continuous engagement with residents to identify any concerns or issues, and appropriate mitigation and management measures agreed upon		
Resource use	Inefficient use of water resources	– Use water effectively and efficiently by following the reduce-recycle-reuse approach; and – Record volumes of abstraction and supply.	– Daily observations – Groundwater level monitoring	– Environmental Manager; and – Employees

3 ENVIRONMENTAL MANAGEMENT PRINCIPLES

3.1 CONTINUAL IMPROVEMENT

The proponent's team is responsible for reviewing and updating this EMP, which will be supported by the monthly reports from the exploration team. As part of this review process, the monthly reports will be reviewed, identifying any trends or significant areas of concern, as well as measures implemented to manage / resolve environmental or social issues. Compliance and legislative changes will be reviewed, and lessons learnt will be captured. The EMP will be amended as required, and follow up training, awareness or updates will be provided.

Ongoing hazard identification through the review of the EMP and supporting management plans and standard operating procedures (SOPs) will ensure environmental impacts are avoided or minimised to as low as reasonably practicable as part of the continuous improvement of the EMS.

3.2 BEST PRACTICE

The best practice management measures that will be complied with across site are listed in **Error! Reference source not found.**.

Table 3 - A list of environmental best practice measures to be implemented.

ENVIRONMENTAL ASPECT	BEST PRACTICE REQUIREMENT
Pollution Prevention Control	– Equipment to be maintained and serviced regularly; – Refueling at designated locations; – Spill kits available where the risk of loss of containment is identified; – Bunds to be at least 110% of the volume of the container; and – Good housekeeping.
Solid Waste Management	– Good housekeeping (no littering); – Designated waste collection areas around site and one central location; – Bins labelled; – Waste to be separated and kept clean and tidy; and – Waste bins emptied on regular basis.
Ground Contamination	– Refueling will be undertaken in designated areas with spill kits available; – Chemical management enforced on site; and – Good housekeeping.

ENVIRONMENTAL ASPECT	BEST PRACTICE REQUIREMENT
Storage of Fuels, Oils, Chemicals and other hazardous liquids	– Storage tanks will be suitable and labelled for the liquid being stored; – Bunds to be at least 110% of the volume of the container; and daily inspections of tanks.
Energy Efficiency	– Equipment to be maintained and serviced regularly; and – Turn off equipment when not in use.
Air Quality	– Maintenance of roads; – Turn off equipment when not in use; and – Equipment to be maintained and serviced regularly.

3.3 ENVIRONMENTAL MONITORING

A monitoring and evaluation program will be used in line with HSE standards to evaluate environmental performance and promote continual improvement. Monitoring also supports environmental management on site to evaluate how effective the environmental management has been over an extended period of time.

An environmental monitoring schedule will be put in place for the operations domain.

The monitoring program comprises:

- Air quality monitoring (e.g dustfallout)

4 COMMUNICATION AND TRAINING

To ensure potential risks and impacts are minimised it is vital that personnel are appropriately informed and trained on how to properly implement the EMP. It is also important that regular communications are maintained with stakeholders (if applicable) and made aware of potential impacts and how to minimise or avoid them. This section sets out the framework for communication and training in relation to the EMP.

4.1 COMMUNICATIONS

During operations, the exploration manager and site manager shall communicate site-wide environmental issues to the project team through the following means (as and when required):

- Ensure all personal are afforded the opportunity to attend an environmental site induction that sets out their requirements in relation to this EMP
- Ensuring audits and inspections are undertaken regularly on a risk-based schedule
- Toolbox talks, including instruction on incident response procedures
- Deliver project-specific environmental briefings where required
- Ensure all personnel have access to the EMP
- Ensure operators of key activities and environmentally sensitive operations are briefed and understand their requirements.

This EMP shall be distributed to the exploration team including any contractors and personnel working on the exploration site to ensure that the environmental requirements are adequately communicated. Key activities and environmentally sensitive operations shall be briefed to workers and contractors.

During the exploration activities, communications between the management team shall include discussing any complaints received and actions to resolve them; any inspections, audits, or non-conformance with this EMP; and any objectives or target achievements.

4.2 ENVIRONMENTAL EMERGENCY AND RESPONSE

An emergency is any abnormal event, which demands immediate attention. It is any unplanned event, which results in the temporary loss of management control at site, but where functional resources can manage the response. An Emergency Response plan document will be put in place that manages the response in relation to emergencies including environmental emergencies.

Table 4 - Emergency Contact details

TOWN	CLININC	POLICE	FIRE BRIGADE
Warmbad	+264 (0) 63 269 116	+264 (0) 63 280 504	

For large-scale spills and other significant environmental incidents, the fire services should be contacted as required and the office of the Ministry of Environment, Forestry and Tourism (MEFT) informed of the incident (telephone +264 61 284 2111). All correspondence with MET should be undertaken by the General Manager or Exploration Manager.

For the clean-up of smaller spills, the relevant Material Safety Data Sheet (MSDS) should be consulted to determine the appropriate clean-up procedure. Basic spill response training will be provided as part of the site environmental induction, spill response equipment, including relevant MSDS copies, will be provided in areas where potentially environmentally hazardous chemicals may be used.

4.3 COMPLAINTS HANDLING AND RECORDING

Any complaints received verbally by any personnel on the project site shall be recorded by the receiver including:

- The name of the complainant
- The contact details of the complainant
- Date and time of the complaint
- The nature of the complaint
- The information shall be given to the exploration manager who is overall responsible for the management of complaints. The exploration manager shall do the following:
- Inform the site manager of issues, concerns, or complaints.
- The site manager must maintain a complaint register that required details of the complaint
- The exploration manager will provide a written response to the complainant of the results of the investigation and action to be taken to rectify or address the matter(s). Where no action is taken, the reasons why are to be recorded in the register

The workforce shall be informed about the complaints register, its location and the person responsible, to refer residents or the general public who wish to lodge a complaint. The complaints register shall be kept for the duration of the Project and will be available for government or public review upon request.

4.4 TRAINING AND AWARENESS

All personnel working on the Project shall be competent to perform tasks that have the potential to cause an environmental impact. Competence is defined in terms of appropriate education, training, and experience. Training and toolbox talks will be provided to all employees and contractors.

4.5 SITE INDUCTION

All personnel involved in the Project shall be inducted to the site with specific environmental awareness training, and health and safety issues. The environmental awareness training shall

ensure that personnel are familiar with the principles of this EMP, and the environmental impacts associated with their activities, the procedures in place to control these impacts and the consequences of departure from these procedures. The exploration manager shall ensure a register of completed training is maintained.

The site induction should include, but is not limited to the following:
A general site-specific induction that outlines:

- What is meant by “environment” and the EMP?
- Why the environment needs to be protected and conserved?
- How can exploration activities impact the environment?
- What can be done to mitigate against impacts?
- The inductee's role and responsibilities concerning implementing the EMP
- The site’s environmental rules
- Details of how to deal with, and who to contact should any environmental problems occur
- Basic vegetation clearing principals and species ID sheets
- The potential consequences of non-compliance with this EMP and relevant statutory requirements, and
- The role of responsible people for the Project.

5 INCIDENT REPORTING

The Proponent must have an incident reporting system that covers all applicable statutory requirements. The section below sets out the minimum requirements for incident reporting and should be used as a basis for incident reporting, in the event that no incident reporting system exists.

5.1 MINOR INCIDENTS OR "NEAR MISS"

Any incident or "near miss" involving the proponent, a nominated representative, any contractor, or its subcontractors or any third party's personnel, property or equipment, must be:

1) Orally reported to the manager or the manager's nominated representative:
   A. Immediately and without delay
   B. Regardless of whether or not injury to personnel has occurred
   C. Or property or equipment has been damaged.

2) Written up and handed to the manager or the manager's nominated representative by the end of the shift. The written report should:

   A. State all known facts and conditions at the time of the incident and
   B. Includes a preliminary assessment of the most likely potential consequences of the incident under the current circumstances.

5.2 SERIOUS INCIDENTS

For any serious incident involving a fatality, or permanent disability, the incident scene must be left untouched until witnessed by a representative of the police. This requirement must not delay immediate first aid being administered and the location being made safe.

5.3 INCIDENT REPORT AND CLOSE OUT

The manager must investigate the cause of all work incidents and significant incidents and must provide the results of the investigation and recommendations on how to prevent a recurrence of such incidents. A formal root-cause investigation process should be followed.

6 COMPLIANCE AND ENFORCEMENT

6.1 ENVIRONMENTAL INSPECTIONS AND COMPLIANCE MONITORING

Inspections and audits of the site will be managed and undertaken by the exploration manager or his/her representative to check that the standards and procedures set out in this EMP are being complied with and pollution control measures are in place and working correctly. All equipment will be inspected to ensure they are operating as per specification; no damage has been caused, and no leaks or spills have occurred. Any non-conformance shall be recorded, including the following details:

- A brief description of non-conformance;
- The reason for the non-conformance;
- The responsible party;
- The result (consequence);
- The corrective action is taken and any necessary follow up measures required.

The application documentation for renewal of the environmental clearance certificate must include an audit report and copies of the 6 bi-annual reports that were submitted every 6 months for the 3 years that the clearance certificate is valid for.

6.2 REPORTING

Reports shall be submitted to the Mining Commissioner in terms of the Minerals (Mining and Prospecting) Act, No. 33 of 1992.

Bi-annual environmental reports shall be submitted to the Environmental Commissioner every 6 months of every year. These reports should include records of the monitoring and other deliverables of every aspect or programme described in the EMP.

6.3 NON-COMPLIANCES

Where it has been identified that works are not compliant with this EMP, the exploration manager shall employ corrective actions so that the works return to being compliant as soon as possible. In instances where the requirements of the EMP are not upheld, a non-conformance and corrective action notice shall be produced. The notice shall be generated during the inspections and the exploration manager shall be responsible for ensuring a corrective action plan is established and implemented to address the identified shortcomings.

A non-compliance event/situation is considered if, for example:

- There is evidence of a contravention of this EMP and associated indicators or objectives.
- The site manager and or contractor have failed to comply with corrective or other instructions issued by the environmental manager or qualified authority.

- The site manager and or contractor fail to respond to complaints from the public.

Activities shall be stopped in the event of non-compliance until corrective action(s) have been completed.

6.4 DISCIPLINARY ACTIONS

This EMP is a legally binding document and non-compliance with it shall result in disciplinary action being taken against the perpetrator/s. Such action may take the form of (but is not limited to):

- Fines / penalties
- Legal action
- Monetary penalties imposed by the proponent on the contractor
- Withdrawal of licence
- Suspension of work

The disciplinary action shall be determined according to the nature and extent of the transgression / non-compliance, and penalties are to be weighed against the severity of the incident.

7 BIODIVERSITY MANAGEMENT PROGRAMME

7.1 INTRODUCTION

Operations on the EPL will include the displacement of flora and fauna and disturbance of habitat. It is therefore vital to ensure that all management, monitoring and mitigation actions are adhered to in order to manage and minimise environmental impacts and any potential pollution that could further impact the receiving environment.

7.2 OBJECTIVES

The ESMP objectives are to minimise negative direct effects of the construction and operations on the receiving environment. These objectives are:

- Mitigation and monitoring;
- Avoid compromising future exploitation of resources by managing impacts and mitigating or minimising these impacts;
- Establish and maintain an information base that will assist in evaluating the cumulative impacts of the operations and establish recovery rates of biodiversity impacted during the mining operations;
- Minimise potential interaction with fauna;
- Ensure the conservation of biodiversity where possible.

7.3 RESPONSIBILITIES

Workforce and all contractors
Required to take all reasonable measures to prevent the damage of flora and fauna and the release of pollutants from the site into the receiving environment. Report any damage to fauna or flora to the HSE/ESG coordinator.

HSE/ESG coordinator
Will ensure that the objectives listed above are being met and provide performance feedback to the HSE/ESF and Project/General managers, in monthly and compliance reports.

7.4 BIODIVERSITY MANAGEMENT MEASURES

The biodiversity management plan measures are designed to minimise the damage to biodiversity on site. This will be updated once the findings of the ESIA biodiversity assessment are complete. Operations activities that could potentially damage protected and endangered species include:

- Chemical spills;
- Refueling;
- Movement of vehicles; and
- Clearing land.

A list along with images of protected and endangered flora species that may be encountered on the EPL is attached to this EMP in Appendix A.

Table 5 below shows the environmental aspects and impacts, and mitigation and monitoring measures for biodiversity aspects.

Table 5 - Biodiversity aspects

Responsibility	**HSE Manager**
Potential issues or impacts	– Possible injury or death of animals; – Poaching; – Habitat fragmentation from clearing, pitting and trenching – Flora disturbance; – Loss of protected/vulnerable species.
Mitigation measures	
General	– Ensure internal land clearing permits are applied for prior to land clearing and through this process the environmental team have the opportunity to recover or rescue plants of significance or plants that can be used for progressive rehabilitation; – Permits to be obtained from Directorate of Forestry; – All workers on-site are to be notified to avoid any excluded areas or species; – Identify rare, endemic, endangered, threatened and protected species and demarcate them and avoid cutting them down, trampling them, or removing them, where possible; – Remove (e.g., capture) unique fauna and sensitive fauna, as well as slow moving species such as tortoise and chameleon or species serendipitously located during this period and relocate to a less sensitive/ disturbed sites in the immediate area; – Remove unique, sensitive flora and protected plant species before commencing with the development activities and where possible relocating to less sensitive/disturbed sites in the immediate area if disturbance cannot be avoided; – Prevent and stop the setting of snares (poaching), illegal collecting of veld foods (e.g., tortoises, etc.), indiscriminate killing of perceived dangerous species (e.g., snakes, etc.) and collecting of wood as this would diminish and negatively affect the local fauna; – Prevent and stop the collecting of firewood as dead wood has an important ecological role; – Such collecting of firewood, especially for economic reasons, often leads to abuses – e.g., chopping down of live and or

	protected tree species such as Acacia erioloba, Combretum imberbe, etc. which are good quality wood; – Attempt to avoid the removal of bigger trees during the development phase(s) – especially with the development of access routes – as these serve as habitat for a myriad of fauna; – Avoid the destruction of larger trees associated with the ephemeral drainage lines; – Avoid trees with raptor nests (especially white-backed vulture) as these bird numbers are declining dramatically throughout their range and are classified as critically endangered by the IUCN (2020); – Prevent and stop fires, as this could easily cause runaway veld fires affecting both the local fauna and flora (e.g., loss of grazing and domestic stock mortalities, etc.) for the neighbouring farmers; – Ensure site has adequate fire breaks – Ban domestic pets – e.g., cats, dogs, chickens etc. – on site at all times as cats decimate the local fauna and interbreed and transmit diseases to the indigenous African wildcat. The killing of the local fauna by such pets should be avoided at all costs; – Prevent the planting of potentially invasive alien plant species for ornamental purposes or as part of the landscaping. Alien species often "escape" and become invasive causing further ecological damage as is evident from previous human habitation in the area; – Make an effort to eradicate/destroy invasive alien plants encountered on site. This would ensure that the spread is limited and show environmental commitment; – Include large/old tree specimens as part of the landscaping; – Initiate a suitable waste removal system as waste often attracts wildlife, (e.g., baboons and black-backed jackal, crows, etc.) which may result in human-wildlife conflict issues; – Educate/inform contractors and staff on protected species to avoid and the consequences of illegal collection of such species; – No animals or birds may be collected, caught, consumed or removed from the site by any contractor or personnel on site; – No poaching; – No firearms on site; – Ensure all trenches are backfilled upon completion and when open clearly marked and with protective berms or fencing to prevent access;

	– Progressive rehabilitation during the mining phase should be used as soon as possible and continue throughout the operating phase; – Rehabilitation of the disturbed areas, i.e., initial development access route "scars" and associated tracks as well as associated prospecting infrastructures, should be rehabilitated as soon as their use is complete, otherwise access needs to be restricted. Such rehabilitation would not only confirm the company's environmental integrity but also show true local commitment to the environment.
Tracks	– Other than designed and approved works, avoid placing access routes (roads and tracks) through sensitive areas, e.g., over hills and along drainage lines within ephemeral (intermittent) streams and rivers. This will minimise the effect on localised potentially sensitive flora and habitats in the area; – Route new tracks around established and protected trees, and clumps of vegetation, where possible; – In undisturbed areas, especially offsite, avoid driving randomly through the area (i.e., "track discipline"), but rather stick to permanently placed roads/tracks – especially during the construction phase. This will minimise the effect on localised potentially sensitive flora and habitats in the area; – Avoid having to create new tracks for ongoing maintenance and inspections; – Stick to speed limits that are established to result in fewer faunal road mortalities as well as less dust pollution. – Implement erosion control. Avoid constructing tracks up steep gradients (where runoff can deeply incise the slope and erode the road); – Incorporate erosion furrows (runoff sites) and humps along tracks to channel water off the tracks to minimise erosion problems; – Cross drainage lines at right angles, etc.
Access route	– Scarrify and revegetate access routes upon completion of activities if they have no further use.
Monitoring requirements	
– Daily visual inspection during construction of new access tracks/widening, land clearing areas; – Daily visual inspection of dams, river diversion for fauna that may have become entrapped;	

- Clearing fire breaks on a regular basis, especially prior to the windier months;
- Regular checking of rehabilitation areas to ensure that the vegetation is flourishing and not dying;
- Biodiversity monitoring should be undertaken in line with monitoring programme requirements. This program will include, but is not limited to, monitoring of the condition of habitats, ecosystems, species inventory and alien vegetation control; and
- Vegetation clearing permits are valid and on file.

8 SURFACE AND GROUNDWATER MANAGEMENT PLAN

8.1 INTRODUCTION

Chemical and waste spills must be contained, so as not to contaminate the soil, surface water or groundwater. Any contact with surface water or groundwater must be treated with exceptional care and reported immediately, so as to minimize the potential for contamination of an aquifer. It is important to limit the potential for wastewater seepage to surface water or groundwater.

This surface and groundwater management plan outlines appropriate groundwater water management measures, monitoring programs and reporting procedures to be implemented

8.2 OBJECTIVES

This surface and groundwater management plan has been prepared to minimise potential impacts on surface and groundwater resulting from the exploration activities. It is important to report any contact with or contamination of surface and groundwater to the environmental coordinator or site manager as soon as possible.

8.3 RESPONSIBILITIES

WORKFORCE AND ALL CONTRACTORS
Required to take all reasonable measures to prevent the discharge of sediments and pollutants from the site into surface or groundwater sources. Report any contact with surface or groundwater to the environmental coordinator.

ENVIRONMENTAL COORDINATOR
Will ensure that the objectives listed above are being met and provide performance feedback to the manager.

8.4 MANAGEMENT MEASURES

The surface and groundwater management plan measures are designed to minimise the runoff of sediment-laden or polluted water/effluent into the surrounding environment. Exploration activities that could potentially impact surface or groundwater quality include:

- Chemical spills
- Refuelling
- Poor resource stewardship practices.

The following requirements are to be met to ensure that groundwater is not contaminated:

- Fuel/oil and chemicals must be safely stored and removed.
- Any contact groundwater must be treated with exceptional care and reported immediately, so as to minimize the potential for contamination of an aquifer.

Table 6 - Surface and groundwater management measures

Responsibility	– Exploration Manager – Employees
Potential issues or impacts	– Surface or groundwater contamination due to incidental hydrocarbon spills – Change in the water table
Protection of Surface and groundwater	Where the water table is penetrated by drilling and the water flows out onto the surface, a furrow needs to be dug that diverts the water to vegetation if water is deemed uncontaminated
	All boreholes should be capped and labelled. In the instances where water is encountered the water should be sampled and tested and the local farm owners be made aware thereof
	Water saving measures should be applicable at all times. No taps or pipes left to run, leaks to be detected immediately. Vehicles only to be washed with buckets, not running water
Sewage and grey water from temporary portable toilets on site	Chemical toilets should be provided and the veld should not be used as an alternative
	If grey water can be collected from ablution facilities at the campsite it should be recycled and: o Used for dust suppression o Used to clean equipment
Lowering of the groundwater levels	1. To maximise the re-use of water during operational phases in order to minimise the use of clean water no matter the source 2. Extraction volumes of water shall be minimal during exploration and where possible, water from existing water sources shall be used 3. Use water effectively and efficiently by following the reduce-recycle-reuse approach 4. Record volumes of abstraction and supply 5. A site-wide water balance will be kept and updated on a regular basis
Inefficient use of water resources	1. To ensure compliance with all legal obligations 2. Refuelling shall be undertaken in a designated area 3. All vehicles and machinery undergoing maintenance must have drip trays to collect leakages of lubricants and oil during any field repairs or emergency maintenance 4. In the event of pollution, polluted soils must be collected and disposed of at an approved site 5. A 'good housekeeping' policy shall be adopted across the exploration area
Any hazardous fluid or lubricating chemicals used could	1. The contractors' laydown areas are to be surfaced and will drain to a sump with silt traps and hydrocarbon collectors 2. All chemicals, bulk fuels, oils and grease and any other hazardous substance, will be stored and handled as per all applicable legislation and national standards

enter the aquifer environment causing pollution	3. Portable chemical toilets will be provided during the exploration phase. They will be routinely cleaned, and sewage disposed of at a licenced sewage treatment plant with the safe disposal certificate to be provided
Monitoring requirements	1. Take borehole water level at the start of exploration and at the end of exploration operations. 2. Keep the records. 3. Monitor the use of water and keep records of daily requirements.

8.5 SURFACE AND GROUNDWATER QUALITY MONITORING

Every effort must be made throughout to preserve the quality of groundwater sources that the Proponent may impact. Containment of waste and chemicals and the correct disposal thereof must be of an acceptable standard. Personnel must report any unusual conditions and intersection with groundwater immediately to the environmental manager.

The Department of Water Affairs require quarterly reporting for water levels and quality of water from the sources for which a permit was required, namely, for abstraction permits:

1. Maintain a record of all abstracted volumes and report to DWA / MAWLR as per permit conditions.

9 WASTE MANAGEMENT PROGRAMME

9.1 INTRODUCTION

The exploration activities will generate both solid and liquid waste. The types of waste generated at the facility are classified as mineral and non-mineral waste. All non-mineral waste will eventually be removed from the Project site and willbe disposed of at the Warmbad waste disposal site (household or garden waste) …

9.2 OBJECTIVES

This waste management programme has been prepared to ensure the proper storage, transport, treatment, and disposal of waste and where possible will follow the waste hierarchy, which encourages waste avoidance and waste reduction followed by reuse, recycling, and reclamation, before waste treatment and waste disposal.

9.3 ROLES AND RESPONSIBILITIES

WORKFORCE AND ALL CONTRACTORS

- Required to ensure that all waste generated during exploration activities is removed and disposed of accordingly including providing evidence in the form of waste transfer receipts for the waste moved off site.
- Ensure no windblown rubbish pollutes the environment, and
- Remove waste on a regular basis to prevent vermin.

SITE MANAGER AND ENVIRONMENTAL COORDINATOR

- Required to inspect receipts and evidence of correct waste handling.
- Review waste management practices regularly during the construction and exploration operations on site.

9.4 SOLID AND LIQUID NON-MINERAL WASTE

The Project site will set up a form of recycling system thus reducing its impacts associated with solid waste generation. Where possible the Proponent will implement measures to reduce, reuse and recycle waste generated as part of the operations. In order to achieve this a temporary waste storage facility will be required.
Waste will be controlled through prevention and mitigation measures as follows:

- Reduce, reuse, and recycle where possible
- Storage of domestic waste on site may result in the attraction of unwanted scavengers and should be disposed of the accredited site as soon as is feasible, and
- Hydrocarbon and chemical contaminated solids have the potential to cause contamination to the soil or groundwater thus correct storage and disposal methods are required. Some of these materials can be recycled or used by other facilities.

Table 7 - Waste Mitigation Measures

Responsibility	Exploration Manager Site Manager Employees
Potential issues or impacts	– Soil and ground water contamination due to spillage – Land and water pollution. – Loss of biodiversity – Infectious diseases
Waste Management Plan	The Proponent should compile a waste management plan that should address as a minimum the mitigation measures included below
Hazardous waste	All vehicles (4x4 vehicles and trucks) and equipment on site should be provided with an oil spill kit: - All spillages should be cleaned immediately and contaminated waste disposed of as it occurs in the appropriate hazardous waste containers (sealable drums) on site, and removed off site at the end of each day to the closest recognised, appropriate hazardous waste disposal site in the vicinity or as soon as possible when working in remote areas - Once spill kits are utilised, the kits need to be replenished to ensure full kit available at all times
	All mining vehicles should be maintained regularly to prevent oil leakages. Maintenance of vehicles is not permitted to occur on site as far as reasonably possible, but if maintenance is to be undertaken on site, measures need to be put in place to avoid hydrocarbon spillages.
	Maintenance and washing of vehicles should be conducted at a suitable site/facility which adhere to the following: – The work area/facility should be lined to be impermeable – The work area/facility should have an oil-water separator (oil trap) to collect any run-off from the washing and or maintenance activities, or be equipped with an oil and water separation system
	Spilled oil or fuel should be treated as hazardous waste, disposed of as it occurs in the appropriate hazardous waste containers (sealable drums) on site, and removed off site at the end of each day to the closest recognised, appropriate hazardous waste disposal site in the vicinity or as soon as possible when working in remote areas. All such waste should be provided to specialists in the handing and treatment of such materials.

	All hazardous substances (e.g., fuel, grease, oil, drilling fluids etc.) or chemicals should be stored in a specific location at the exploration campsite on an impermeable surface which is bunded.
General waste	The exploration site should be kept tidy at all times. All domestic and general waste produced daily should be contained: – No waste may be buried or burned – No waste is to be left uncontained, in suitable containers, over night – Waste containers (bins) should be emptied regularly and removed from site to the nearest official waste disposal site. All recyclable waste needs to be taken to the nearest recycling depot if available – A sufficient number of separate waste containers (bins) for hazardous and domestic/general waste must be provided on site. These should be clearly marked as such – Exploration personnel should be sensitised to dispose of waste in a responsible manner and not to litter – No waste may remain on site after the completion of the project
Residual mineral samples	Samples that will not be used for further analysis or submitted to MME should be taken off site or used (with the required permission from the affected landowner and/or tenant) to repair any possible damaged roads. No samples are to be dumped at site or in the vicinity of the site as to not affect rehabilitation efficiency through physical and chemical pollution of weathering samples.
Littering and environmental contamination from waste	No littering by workers shall be allowed.
	All litter on and around the site must be picked up and placed in the bins provided
	The site should be kept tidy and free of litter at all times. All domestic and general waste produced on a daily basis should be cleaned and contained daily.
	No solid waste landfill will be established at the site.
	No waste shall be burned or buried anywhere unless permitted to do so.
	Waste shall be collected and shall be removed regularly to avoid bad odours.
	Hazardous and non-hazardous waste shall be stored separately at all times.
Environmental contamination from liquid waste	Hydrocarbon and chemical contaminated solids must be stored correctly and disposed of by registered companies.
	Safe disposal certificates must be kept and provided to the exploration manager on request.

Sewage and grey water from temporary portable toilets on site	Portable toilets must be provided during exploration.
	Discharging of the portable units is to be conducted at an existing suitable facility
Monitoring Requirements	1. Monitor whether the provisions set out in this EMP concerning waste management is being applied as per instructions 2. All non-compliances should be recorded and discussed at weekly site meetings and timeous remedial actions taken 3. 3. All guilty parties that are in contravention of the provisions set out for managing waste should be given a penalty and according to the severity of the impact appropriate steps taken

9.5 WASTE DISPOSAL MONITORING

Certificates to prove the safe disposal of waste from a permitted hazardous waste disposal site must be provided to the manager upon request.

10 SPILL MANAGEMENT PROGRAMME

10.1 INTRODUCTION

The uncontrolled release of fuels and other chemicals has the potential to result in the contamination of soil, groundwater, which may lead to serious environmental harm. On this basis, the storage and use of fuels or other chemicals must be managed to minimise the risk of a release, and measures must be in place to promptly address impacts should a release occur.

10.2 OBJECTIVES

This spill management plan has been prepared to minimise the potential for the uncontrolled release of fuels, oils and other chemicals. Preventative measures to minimise the potential for a spill are listed. Should a spill occur, this plan provides guidance for the proponent on the appropriate spill response measures.

10.3 ROLES AND RESPONSIBILITIES

WORKFORCE AND ALL CONTRACTORS
Required to implement the spill prevention and response measures listed below.

SITE MANAGER/ ENVIRONMENTAL MANAGER
Required to ensure that appropriate spill prevention measures (listed below) are implemented and that any spills have been appropriately managed and reported.

10.4 SPILL PREVENTION MEASURES

The following management measures are to be implemented by the Proponent:

- Spill kits are to be made available throughout the site. The kits are to include, as a minimum, the following items:
  - Absorbent materials
  - Shovels
  - Heavy-duty plastic bags
  - Protective clothing (e.g., gloves and overalls), and
- Major servicing of equipment shall be undertaken off-site in appropriately equipped workshops
- Ensure drill pads liners and spill kits are in place,
- All vehicles and machinery undergoing maintenance must have drip trays to collect leakages of lubricants and oil
- Consider alternative sites when the water table is too high
- Accidental spills and leaks (including absorption material) to be cleaned as soon as possible
- Store bulk fuel in adequate containment areas (non-porous surface and bunded)

- No damaged containers in use
- Provision of adequate and frequent training on spill management, spill response and refuelling must be provided to all onsite staff and contractors
- Fuels, lubricants, and chemicals are to be stored within appropriately sized, impermeable bunds or trays with a capacity not less than 110% of the total volume of products stored
- All fuel and chemical storage and handling equipment (including transfer hoses, etc.) shall be well maintained
- Storage and handling of fuels and chemicals shall follow relevant legislation and regulations
- MSDS are to be kept for each chemical used on site. These must be easily accessible to all personnel.

10.5 SPILL RESPONSE MEASURES

The primary concern, in the event of any spill, is the health and safety of any residents/ employees and contractors in the vicinity. Of secondary, but highly significant, importance, is the protection of water sources and then soil and vegetation.

The following points therefore apply to all areas on the site:

- Assess the situation for potential hazards.
- Do not come into contact with the spilled substance until it has been characterised and necessary personal protective equipment (PPE) is provided.
- Isolate the area as required.
- Notify the site manager or safety, health, and environmental coordinator.

The following measures are to be implemented in response to a spill:

- Spills are to be stopped at source as soon as possible (e.g., close valve or upright drum)
- Spilt material is to be contained to the smallest area possible using a combination of absorbent material, earthen bunds, or other containment methods
- Spilt material is to be recovered as soon as possible using appropriate equipment. In most cases, it will be necessary to excavate the underlying soils until clean soils are encountered
- All contaminated materials recovered subsequent to a spill, including soils, absorbent pads, and sawdust, are to be disposed to appropriately licenced facilities
- The manager or safety, health and environmental coordinator are to be informed as soon as possible in the event of a spill, and
- A written Incident Report must be submitted to the manager.

Table 8 - Spill mitigation measures

Responsibility	Exploration Manager Site Manager Employees
Potential issues or impacts	Soil and ground water contamination due to spillage
Stored Hazardous Chemicals	Hazardous chemicals are to be stored in bunded areas
	Hazardous chemicals (such as fuels) are to be handled over areas provided with impervious surfaces
	Spills of hazardous chemicals are to be contained and cleaned-up to ensure protection of the environment
	All the necessary PPE required for the safe handling and use of petrochemicals and oils shall be provided to, and used or worn by, the onsite staff
Machinery and Equipment Maintenance	Major servicing of equipment shall be undertaken off site or in appropriately equipped workshops
	For small repairs and required maintenance activities all reasonable precautions to avoid oil and fuel spills must be taken (e.g., spill trays, impervious sheets).
	Vehicles and machinery are to be regularly serviced to minimise oil and fuel leaks
	All the necessary PPE required for maintenance activities must be issued to staff whose duty it is to manage and maintain the machinery and equipment.

The table below shows the environmental risks and issues, and mitigation and monitoring measures for the Spill of hazardous substances.

Table 9 - Spill of Hazardous Substances

Responsibility	- Exploration Manager - Site Manager - Environmental Manager	
Potential issues or impacts	Hydrocarbon and chemical handling and storage can cause spillages that lead to groundwater contamination and soil contamination.	
Management/ Mitigation measures	Safe delivery and handling	1. Training employees and toolbox talks 2. Good housekeeping across the site 3. Fuel and chemicals are handled with care 4. Spill kits to be at designated areas across the site or available for use during refuelling, fuel/chemical delivery, or use. Absorption material should be available and at hand. Where sawdust is used it should be cleaned

		up immediately and not left for long periods as this poses a fire hazard 5. Any major spill is reported once containment has been achieved 6. Equipment to be well maintained and serviced regularly 7. In the field, the use of hydrocarbons under 200 litres can be used for mobile refuelling or servicing
	Storage	1. All tanks to be stored on a non-porous floor and within a bunded area. 2. Bund to be capable of storing at least 110% of the volume of the largest tank 3. All containers to be suitable for use and not damaged 4. Tanks are locked at all time 5. Spill kits available at storage locations and around the site at suitable locations
	Refuelling	1. Drip tray to be used during refuelling of vehicles and on an impermeable flat surface where possible 2. A funnel should be available and used to avoid spillage during decanting
	Rehabilitation	Contaminated soils should be removed and deposited on lined storage areas for rehabilitation purposes. Rehabilitation can take place naturally by adding water, air and fertiliser. The process can be accelerated by using special additives that will breakdown the hydrocarbons.
Monitoring requirements	1. Daily observations when fuels/chemicals are delivered and handled 2. Supervision during refueling 3. Weekly observations monitor containment and storage 4. Establish an internal land clearing permit system that restricts advance clearing. 5. Monitor the level of hydrocarbons in contaminated soils after a year of rehabilitation. 6. Monitor each year until the soils are ready for re-use in revegetation projects.	

For large-scale spills over 200L and other significant environmental incidents, the fire services should be contacted as required and the office of the Ministry of Environment, Forestry and Tourism (MEFT) informed of the incident (telephone +264 61 284 2111). All correspondence with MEFT should be undertaken by the manager.

For the clean-up of smaller spills, the relevant material safety data sheet (MSDS) should be consulted to determine the appropriate clean-up procedure. Basic spill response training will

be provided as part of the site environmental induction, spill response equipment, including relevant MSDS copies, will be provided in areas where potentially environmentally hazardous chemicals may be used.

10.6 SPILL REPORTING

All major petroleum product spills should be reported to the Ministry of Mines and Energy (MME) on Form PP/11 titled "Reporting of major petroleum product spill", issued by the ministry.

10.7 REHABILITATION OF CONTAMINATED SOILS

A procedural manual for rehabilitating contaminated soils on site should be developed. All soils that are contaminated with chemicals and or hydrocarbons should be taken to the rehabilitation area.

11 AIR QUALITY MANAGEMENT PROGRAMME

11.1 INTRODUCTION

This air quality management plan describes the strategies and procedures that will be implemented to ensure that the health and amenity of construction workers and nearby sensitive receptors are protected from elevated concentrations of airborne dust and other gaseous emissions (e.g. oxides of nitrogen; nitrogen dioxide, particulate matter; sulphur dioxide and carbon monoxide). Typically, the gases present in an exploration environment include carbon monoxide, hydrogen sulphide, sulphur dioxide and nitrogen dioxide. In cases where generators and other machinery are used, there will be some release of exhaust fumes that will impact the immediate vicinity but will be of short duration.

11.2 OBJECTIVES

This air quality management plan has been prepared to prevent the deterioration of air quality and to minimise the potential for emitted dust and airborne pollutants. Preventative measures are listed below.

11.3 RESPONSIBILITIES

WORKFORCE AND ALL CONTRACTORS
To implement the necessary management practices in order to meet the objectives listed above.

SITE MANAGER/ ENVIRONMENTAL COORDINATOR
To ensure that the objectives listed above are being met and to provide performance feedback to the exploration manager.

11.4 AIR QUALITY MANAGEMENT PROCEDURES

Activities that may potentially emit dust and airborne pollutants during the operations include the following:

- Vehicle movements
- Machinery operations

The Proponent will minimise the potential for dust generation and the emission of airborne pollutants by undertaking the following management measures, as required:

- Appropriate speed limits will be set and enforced.
- Ground disturbance will be minimised as far as practical.
- Vehicles and machinery will be maintained so as to limit exhaust fume emissions.

Table 10 - Air Quality Mitigation Measures

Responsibility	– Environmental Manager – Site Manager
Potential issues or impacts	– Impaired visibility for drivers and employees – Respiratory related health issues
Dust and fumes	Appropriately rated and fitted dust masks should be given to personnel working in areas of dust exposure.
	Grey water should be used for dust suppression on a constant basis if available and as required.
	Maintain speed limits.

11.5 AIR QUALITY MONITORING

Visual monitoring of exploration activities can ensure the minimum discharge of airborne dust and other emissions according to the air quality management programme.

1. Daily observations
2. Air quality monitoring:

For RC drilling a dustfall monitoring network, comprising of eight (8) single dustfall units as a minimum, should be maintained and the monthly dustfall results used as indicators to tract the effectiveness of the applied mitigation measures. Dustfall collection should follow the ASTM method.

11.6 ODOURS, NOISE AND VIBRATION IMPACTS

The sensitive receptors within proximity to the site might be the surrounding farm areas. Activities related to the exploration activities have the potential to generate nuisance odours, noise and vibration that can impact the quality of life for neighbouring residents and tourism activities if located in close range. However, this potential impact is minimal due to the nature of the exploration methods employed.

Notwithstanding the above point, the Proponent should continue to ensure potential odours, noise and vibration sources are mitigated through measures such as:

- Avoid noise generating activities at night where there are sensitive receptors,
- Ensure appropriate measures are put in place to rectify odours, noise and vibration complaints, should they occur.
- Scheduling of works to avoid disturbance between the hours of 7:00PM and 5:00AM where there are sensitive receptors, and
- Procedures for receiving complaints from nearby land users or residents to be in place and mitigation measures to be implemented should construction and exploration generate excessive odours, noise, and vibration, which is unexpected.

Occupational noise and vibration are managed through the health and safety management plan and therefore not applicable to this EMP.

Table 11 below shows the environmental risks and issues, and mitigation and monitoring measures for noise aspects.

Table 11 - Noise Aspects

Responsibility	– Exploration Manager – Site Manager
Potential issues or impacts	Excessive noise due to proposed Project operations.
Management/ Mitigation measures	Work hours should be restricted to between dawn and dusk where exploration involving the use of heavy equipment, power tools, and the movement of heavy vehicles is within 1 km from sensitive receptors. In the event that this is not possible, the affected community need to be consulted well in advance to agree on a mutually acceptable solution
Monitoring requirements	Sources of excessive noise will be investigated, and recommendations made for mitigation.

12 ARCHAELOGICAL AND HERITAGE PROGRAMME

Areas of the proposed Project is subject to a heritage survey and assessment at the planning stage. These surveys are based on surface indications alone, and it is therefore possible that sites or items of heritage significance will be found in the course of development work, subsurface. The procedure set out here covers the reporting and management of such finds.

Scope: The "chance finds" procedure covers the actions to be taken from the discovery of a heritage site or item to its investigation and assessment by a trained archaeologist or other appropriately qualified person.

Compliance: The "chance find" procedure is intended to ensure compliance with relevant provisions of the National Heritage Act, No. 27 of 2004), especially Section 55 (4): "a person who discovers any archaeological object must as soon as practicable report the discovery to the Council". The procedure of reporting set out below must be observed so that heritage remains reported to the NHC are correctly identified in the field.

Table 12 below shows the environmental risks and issues, and mitigation and monitoring measures for Archaeological and heritage aspects.

Table 12 - Archaeological and Heritage Aspects

Responsibility	– Exploration Manager – Site Manager
Potential issues or impacts	Impact on heritage features
Management/ Mitigation measures	– No Sampling 200 meters from the rock shelter and caves. – No sampling within 200 meters from the hunting blind rock ridges[1]. – Implementation of geofencing identified archaeological sites with a 50m buffer zone. Should a heritage site or archaeological site be uncovered or discovered during exploration, a "chance find" procedure should be applied in the order they appear below: – If operating machinery or equipment, stop work – Demarcate the site with danger tape – Determine GPS position if possible – Report findings to foreman – Report findings, site location and actions taken to superintendent – Cease any works in immediate vicinity – Visit the site and consult with any potentially affected community to determine whether work can proceed without damage to findings – Determine and demarcate the exclusion boundary

[1] Recommendation from Eliot 2023 (Mowa, 2023)

	– Site location and details to be added to the project's Geographic Information System (GIS) for field confirmation by an archaeologist – Inspect site and confirm addition to project GIS – Advise the National Heritage Council (NHC) and request written – permission to remove findings from work area – Recover, package and label findings for transfer to the National Museum
	Should human remains be found, the following actions will be required: – Apply the chance find procedure as described above – Schedule a field inspection with an archaeologist to confirm that remains are human – Advise and liaise with the NHC and Police – Remains will be recovered and removed to either the National Museum or the National Forensic Laboratory.
SPECIFIC MITIGATION DETAILS	
Archaeology	Obtain inputs from an archaeologist to identify potential archaeological sites in the area and to determine further mitigation where necessary
Monitoring requirements	1. Check that the archaeologist has given a written statement about the location of the known archaeological sites in the area vs the location of the drilling area. 2. Make sure no archaeological site is disturbed whilst excavation and recovery take place 3. Make sure everything of importance, as identified by an appropriate specialist, is removed from site and declared safe by an archaeologist before exploration can continue on the site

12.1 RESPONSIBILITY

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

12.2 PROCEDURE

Action by a person identifying archaeological or heritage material

a) If operating machinery or equipment stops work
b) Identify the site with flag tape
c) Determine GPS position if possible
d) Report findings to the foreman

Action by foreman

a) Report findings, site location and actions taken to the superintendent
b) Cease any works in the immediate vicinity

Action by superintendent

a) Visit site and determine whether work can proceed without damage to findings
b) Determine and mark exclusion boundary
c) Site location and details to be added to project GIS for field confirmation by archaeologist

Action by archaeologist

a) Inspect site and confirm addition to project GIS
b) Advise NHC and request written permission to remove findings from work area
c) Recovery, packaging and labelling of findings for transfer to National Museum

In the event of discovering human remains

a) Actions as above
b) Field inspection by archaeologist to confirm that remains are human
c) Advise and liaise with NHC and Police
d) Recovery of remains and removal to National Museum or National Forensic Laboratory, as directed.

13 IMPLEMENTATION OF THIS EMP

This environmental management plan:

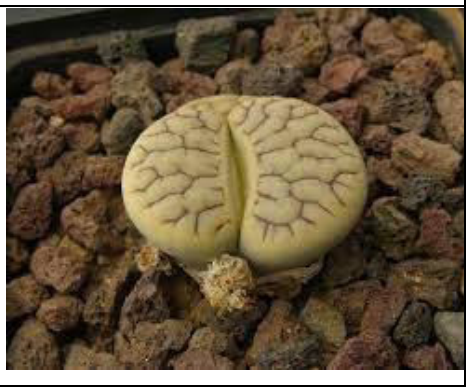
A. Has been prepared according to a contract with the Proponent
B. Has been prepared based on information provided to ECC up to July 2023
C. Is for the sole use of the proponent, for the sole purpose of an EMP
D. Must not be used (1) by any person other than the proponent or (2) for a purpose other than an EMP
E. Must not be copied without the prior written permission of ECC.

14 REFERENCES

Mowa, E. (2023). *Heritage Impact Assessment (HIA) for the exploration of Lithium Resources on EPL 7574 near Karasburg and Orange River in //Karas Region*.

APPENDIX A – NBRI ENDANGERED AND PROTECTED SPECIES LIST

SPECIES	ENDEMISM	PROTECTED	IUCN 1	IUCN 2	IMAGE
Anacampseros Baeseckei Dinter		Protected			
Anacampseros filamentosa (Haw.) *Sims subsp. tomentosa (A.Berger) Gerbaulet*	Near endemic	Protected			
Aridaria noctiflora (L.) Schwantes subsp. straminea (Haw.) Gerbaulet	Near endemic	Protected			
Avonia quinaria (E.Mey. ex Fenzl) *G.D.Rowley subsp. alstonii (Schönland) G.D.Rowley*				Near threatened	
Commiphora gracilifrondosa Dinter ex *J.J.A.van der Walt*	Near endemic			Near threatened	

SPECIES	ENDEMISM	PROTECTED	IUCN 1	IUCN 2	IMAGE
Dinteranthus puberulus N.E.Br.			Protected		
Hermannia minutiflora Engl.	Near endemic				
Lapidaria margaretae (Schwantes) Dinter & Schwantes		Protected	Near Threatened	Near Threatened	
Lithops dinteri Schwantes subsp. multipunctata (de Boer) D.T.Cole	Endemic	Endangered	Endangered	Endangered	

SPECIES	ENDEMISM	PROTECTED	IUCN 1	IUCN 2	IMAGE
Petalidium setosum C.B.Clarke ex Schinz	Near endemic				
Ruschia spinosa (L.) Dehn		Protected			
Schwantesia ruedebuschii Dinter		Protected			

Submitted to: Karas Lithium Resources (Pty) Ltd
Attention: Mr William Morrell
Private bag 12012
Ausspannplatz
Windhoek, Namibia

I&AP PUBLIC CONSULTATION DOCUMENT:

I&AP COMMENTS AND RESPONSES FOR THE EXPLORATION ACTIVITIES ON EPL 7574 FOR THE KARAS LITHIUM PROJECT, // KHARAS REGION, NAMIBIA

PROJECT NUMBER: ECC-139-449-REP-14-D

REPORT VERSION: REV 01

DATE: 31 JULY 2023

Prepared by:

TITLE AND APPROVAL PAGE

Project Name:	I&AP Comments and Responses for the Exploration Activities on EPL 7574 for the Karas Lithium Project, // Kharas Region, Namibia
Client Company Name:	Karas Lithium Resources (Pty) Ltd
Client Representatives:	Mr William Morrell
Ministry Reference:	APP-0010357
Authors:	Environmental Compliance Consultancy (Pty) Ltd
Status of Report:	Final for public review
Project Number:	ECC-139-449-REP-14-D
Date of issue:	31 July 2023
Review Period	31 July 2023 – 6 August 2023

ENVIRONMENTAL COMPLIANCE CONSULTANCY CONTACT DETAILS:

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DISCLAIMER

The report has been prepared by Environmental Compliance Consultancy Pty Ltd (ECC) (Reg. No. 2022/0593) on behalf of the Proponent. Authored by ECC employees with no material interest in the report's outcome, ECC maintains independence from the Proponent and has no financial interest in the Project apart from fair remuneration for professional fees. Payment of fees is not contingent on the report's results or any government decision. ECC members or employees are not, and do not intend to be, employed by the Proponent, nor do they hold any shareholding in the Project. Personal views expressed by the writer may not reflect ECC or its client's views. The environmental report's information is based on the best available data and professional judgment at the time of writing. However, please note that environmental conditions can change rapidly, and the accuracy, completeness, or currency of the information cannot be guaranteed.

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ABBREVIATIONS

Abbreviation	Description
CSI	community sustainable investment
EAP	environmental assessment practitioner
ECC	Environmental Compliance Consultancy
e.g.	example
EIA	environmental impact assessment
EMP	environmental management plan
EPL	exclusive prospecting licence
ESIA	environmental and social impact assessment
GPS	Global Positioning System
I&APs	interested and affected parties
L	Litre
Ltd.	Limited
m	metre
m/day	metres per day
MEFT	Ministry of Environment, Forestry and Tourism
MME	Ministry of Mines and Energy
NBRI	National Botanical Research Institute
ORKCA	Orange River-Karoo Conservation Area
Pty	proprietary
RoD	record of decision

1 SUMMARY OF PUBLIC MEETINGS AND COMMENTS FROM I&APS

1.1 INTRODUCTION

Environmental Compliance Consultancy (ECC) has been engaged by Karas Lithium Resources (Pty) Ltd, the Proponent, to conduct an Environmental and Social Impact Assessment (ESIA) in accordance with the Environmental Management Act, No. 7 of 2007 and its regulations of 2012, for which an application for an environmental clearance certificate will be submitted for the exploration activities on EPL 7574 for the Karas Lithium Project, //Kharas Region, Namibia.

The proposed project (referred to as "the Project" herein) involves the exploration lithium oxide on EPL 7574. The EPL overlaps farms Pelladrift, Oranjevalle, Kambreek and Pelgrimrust and can be accessed via the B3 to Karasburg and then the C10.

The community directly affected and/ or interested parties, were identified and invited to attend the focus group meeting. A summary of the feedback received from the public will be issued to registered I&APs and competent authorities being the Ministry of Mine and Energy (MME), and the Ministry of Environment, Forestry and Tourism (MEFT) to accompany the application for an environmental clearance certificate, for a record of decision (RoD).

1.2 PUBLIC MEETINGS SUMMARY

The stakeholder meeting was facilitated by Monique Jarrett, Environmental Assessment Practitioner – Environmental Compliance Consultancy (ECC) with technical support from Carlene Baufeldt (ECC) and Mr William Morrell – Director of Karas Lithium Resources.

The welcoming and agenda of the meeting included an introduction to ECC as an independent environmental consulting company commissioned by Karas Lithium Resources (Pty) Ltd as the environmental assessment practitioner (EAP) to conduct the ESIA.

Mr Morrell gave the technical presentation for Karas Lithium Resources and provided an overview of the proposed operations on EPL 7574 on the Project's location, baseline and ESIA process, and procedures were presented and an explanation of the Project's current status. The objective of the public meeting was to engage stakeholders and to identify and address any concerns they had with the proposed Project.

Mr Morrell provided insight into the company's background and their goals and strategies for the Karas Lithium project in Namibia. Mr Morrell highlighted the importance and value of the Project relating to the environment and the economy.

To conclude the presentation the main components of the environmental assessment were further discussed. This included aspects and concerns about the impacts of exploration activity on biophysical, how mitigation and monitoring measures could potentially be enforced and how the attendees as registered I&APs could contribute to the process and development of the EMP. The floor was then opened for questions, comments, and further discussion.

1.3 KEY FEEDBACK ON ISSUES OF CONCERN – PUBLIC MEETINGS

The summary of comments received from the public meetings held presented useful and valuable input in setting out the scope for the environmental and social impact assessment through questions asked and points raised. From an overall review of the recorded statements, the key common themes of concern that were raised can be summarised in the following categories:

- **Water usage**
  Questions were raised on where water would be obtained from during the exploration activities. There were concerns of how much water would be required and if water will be used during the drilling phase as water is already scarce in the area and distance to water that is safe for human consumption is quite far. The proponent assured the I&APs that they would bring water to site in tanks. The Proponent specified that they would use water for lubrication during the drilling process and use approximately 1500-1800 L of water per day.

- **Endemic/sensitive flora assessment**
  A concern was raised on succulent plant species and possible sensitive and/or endemic species, as the area has a high flora biodiversity. There was a request for a full plant assessment as the area's biodiversity is not well researched and a desktop study may not be sufficient. Cross-border smuggling of these plant species was also mentioned as the EPL is close to the border. The proponent assured the I&APs that there will be an onsite plant assessment by a specialist prior to Prospecting activities and added information supplemented by a botanist, Antje Burke, if available. Cross-border smuggling will be added to the risk register and there will be supervision onsite to minimise the potential for cross-border smuggling.

- **Heritage and archaeological assessments**
  The I&APs agreed that a heritage assessment is necessary as there are some heritage sites in the area and wanted more information on what the heritage and archaeological assessment entails and the area that will be covered. The environmental assessment practitioner (EAP) explained that there would be a desktop study to check the national heritage database for recorded sites and plan the archaeological assessment according to their findings, the aim however, is to cover as much of the EPL as possible with evidence provided (GPS tracking). The heritage assessment would be carried out by a heritage specialist followed by a verification study from the Heritage Council.

- **Poaching**

The issue of poaching was discussed and possible prevention methods during the exploration phase as the EPL is within a conservation area. The EAP explained that poaching is included in the environmental management plan (EMP), and the proponent will be held liable should any of the team members be involved in poaching activities.

- **Transportation of Equipment & road construction**
  There were questions regarding the transportation of equipment that will be used during the exploration activities and concerns over road destruction or the construction of new roads that would have a visual impact and/or negatively impact the surrounding environment. The proponent explained that multiple alternatives would be considered including aerial ropeways in order to reduce the footprint impacts.

- **Compensation during the exploration phase and possible mining activities**
  The I&APs had concerns that they may be faced with more negative impacts during the first phases of the exploration activities and requested more information regarding fair compensation. It was discussed in the land access agreement between the client and farm owners, there will be compensation discussions and negotiations including possible payment for services and any damage caused. The aim of Karas Lithium is to work collaboratively with farmers and stakeholders.

- **Timeline of processes and update of current/upcoming events**
  Questions were raised regarding the timeline of explorations and how long I&APs can review the environmental assessment documents. The proponent gave a summary of the project and what it entails along with the duration of certain activities during the exploration phase. There was an agreement to allow I&APs a 14–day period to review the relevant documents.

- **Supervision of operations**
  Concerns were expressed over the exploration team, supervision during activities and who would be in charge should issues come up. It was explained that Dr. Johan Hattingh, the exploration manager, would have a team of no more than 10 people for initial stages and 10 people per drill rig at later stages. All questions and concerns will be directed to him during the exploration phase.

2 ACKNOWLEDGEMENTS

In closing of the meeting, ECC thanked all I&APs for their attendance and for providing valuable feedback during the stakeholder meeting. Through the stakeholder meeting process, the Proponent and ECC have endeavoured to provide a platform to hear and address all relevant comments put forward by I&APs.

ECC further endorsed the fact that constructive feedback from I&APs results in a more robust and improved ESIA. This process results in a project that is understood by the community and I&APs. The I&APs feedback will contribute to identifying the potential impacts to be assessed and concerns to be considered and addressed as the project progresses.

2.1 DETAILED COMMENTS AND RESPONSES FROM THE PUBLIC MEETINGS

The official public consultation period began on the 20th of April 2023 and remained open until the 5th of May 2023 for initial comments. Additional comments were received during the stakeholder meeting, via email and telephone which are included in the draft scoping report and this document in Table 1 below.

Further comments were welcome after the initial registration period and public review period and the public consultation period will remain open for I&APs until the final assessment report for the project is ready for submission to the competent authorities.

Table 1 - Comments and feedback from the virtual meeting with the landowners over which the EPL falls.

Wednesday, 31 May 2023 Virtual (Zoom) Meeting			
Name	**Stakeholder Details**	**Comment/Question Received**	**Response/Clarification**
Jannie van de Merwe & Ed Barthorp	ORKCA	Boreholes available on Pelladrift are not safe for human consumption and therefore provision should be made for water for assessment specialists and during the exploration activities, e.g groundwater studies, yet the groundwater may be poor.	Comment Noted.
		Specialist studies will be needed for flora biodiversity. as there are highly sensitive and/ or endemic plant species in the area that are not well researched. Cross-border smuggling has been an issue.	A copy of a study from a botanist, Antje Burke was received, who has identified sensitive succulent species in the area, which will be taken into consideration. Cross-border smuggling will be added to the risk register to manage contactors and there will be supervision onsite to prevent cross-border smuggling.
		There are heritage sites in the area, so we are in agreement with a heritage assessment. What would the archaeological studies entail in terms of the large, mountainous area.	A desktop study to check the national heritage database for recorded sites will be done and the archaeological assessment will be planned according to their findings, but the aim is to cover as much of the EPL as possible with evidence provided. The heritage assessment would be carried out by a heritage specialist followed by a verification study from the Heritage Council.
		How can you ensure that poaching will not occur? We are in a conservation area, how will that be prevented?	Poaching is included in the EMP, and the proponent will be held liable should any of the team members or contractors be involved in poaching activities.

Wednesday, 31 May 2023 Virtual (Zoom) Meeting			
Name	**Stakeholder Details**	**Comment/Question Received**	**Response/Clarification**
Pete Morkel	Farm Pelgrimrust	Elaborate on the drilling phase during the exploration activities.	The impact or disturbance will be minimal during the channel sampling. The drilling technique would be determined. Ore samples will be collected, processed and taken to the lab for chemical and metallurgical studies. Given the terrain, a light-weight diamond drill rig may be used.
		What transportation will be used for equipment; how will it impact road?	The drill rig can be carried to the site, as we have done before. Building a road is extremely expensive and may be destructive to the environment. Another route is pieces of the drill being carried by donkeys.
		Who oversees putting the finer details of the exploration activities in a document? Will we have an input before operations? We want to be sure that if we are not happy with what is proposed we can put a stop to the activities.	These details are normally listed in the EMP. The methodologies in the EMP can specify the preferred and appropriate activities. Impacts will be listed and the ECC team will identify mitigations as well as rehabilitation strategies. The EMP is a public document, and all reasonable input would be appreciated.
		We are living with the day-to-day negative impacts from the explorations along with time and effort in assisting assessment studies. Who covers the negativity that comes with activities? Is there fair compensation? How early can positive compensation occur?	In the land access agreement between the client and farm owners, there will be compensation discussions and negotiations. Rehabilitation will be included in the EMP and is legally binding. There is payment for hardship or inconvenience and Karas Lithium would like to work collaboratively with farmers and stakeholders.

Wednesday, 31 May 2023 Virtual (Zoom) Meeting			
Name	**Stakeholder Details**	**Comment/Question Received**	**Response/Clarification**
			In the case where farmers can provide Karas Lithium with necessary resources, such as farm help and access to camp sites fair compensation will be provided. Karas Lithium want to be collaborative.
		What is the timeline of processes after approval and when will the actual activities occur? The number of people? When is the EIA going to happen? What is expected from us?	Pending is the Heritage assessment: This depends on when ECC can get the specialist onsite and how long the assessment and report may take. It takes a month to complete an impact report which will be submitted for your review for a week and after your comments and changes are incorporated, it will be submitted to the government for their review. It takes 3 - 6 months for approval.
		For the plant assessment will you only use the information given by Antje or will there be a more detailed study?	ECC would use the information from our desktop data, the study by Antje Burke and use additional information from the National Botanical and research institute (NBRI).
		After approval from MEFT, elaborate on activities.	The first phase will be exploration of the riverbed which would take up to a week. The second phase will be channel sampling when pegmatite of interest has been identified.
		How much water do you need? Are you going to bring it in by tanker? Do you need water for the drilling process? How long is the drilling rate?	Circumstances will dictate, however Karas Lithium will most probably bring a trailer and tractor to import water. We (Karas Lithium) will use 1500-1800 L of water per day. We do circulate most of the water. We (Karas Lithium) do use water in drilling for lubrication. The drilling rate is 10 m/day.

Wednesday, 31 May 2023 Virtual (Zoom) Meeting			
Name	**Stakeholder Details**	**Comment/Question Received**	**Response/Clarification**
			6 months may be a good guess. After these technical studies will be done within 6 months followed by an ESIA process that could also take a few months
		Is the EAP paid by the proponent?	ECC is hired by Karas Lithium to undertake an ESIA, however it is an independent assessment. ECC has no specific interest in the success or failure of the project. As per the regulations of the environmental management act, any proponent is required to appoint an independent EAP to conduct the necessary studies.
		Can you possibly hire someone to do a full plant assessment as the succulents are of great concern.	Karas Lithium will commission a botanist to conduct a full biodiversity study should the Project progress to that stage.
Ed Barthorp	ORKCA	Why are mining activities not taken into account now? The whole point of exploration now is to do mining later.	We (Karas Lithium) don't know if there is potential mining after exploration activities. If mining is possible, proper steps will be taken regarding the EMP. It is our responsibility to ensure that impacts are mitigated and rehabilitated. We currently have an EPL allowing us to do exploration activities and we want to pursue that right in a responsible manner. We do not want a reputation of being a destructive mining company. There are international standards that define how to manage and mitigate impacts. We must act accordingly. We compensate any discomfort.

Wednesday, 31 May 2023 Virtual (Zoom) Meeting			
Name	**Stakeholder Details**	**Comment/Question Received**	**Response/Clarification**
		Is there a budget provided in the EMP and a guarantee that the budget can be met?	No finances are discussed in any of the ESIA documents. Budget will be involved in the compliance to the EMP. The management plan sets the rules and Karas Lithium must comply with those rules.
		Can we be provided with a spider diagram with the different people involved in the activities and their responsibilities including the stakeholders? Can a document be provided of all the current activities that are requested, with dates and descriptions. We require a 14-day period to review the scoping report. There are many emails which can also be confusing with short notices to requests. There are many new threads of emails. From now on, Jannie will be the sole point of contact from ORKCA with Ed and Andreia copied in. We would like to request that the archaeological specialist carry a GPS tracker during the assessment to prove that they covered the entire area. We would like to request an updated plant study as the area has a high biodiversity and is not	A 14-day review period is possible, provided that the proponent agrees. Just a note, ECC will submit the Heritage assessment on behalf of the specialist and the proponent for heritage consent to the heritage council, but the heritage council will use one of their own specialists to verify the findings of the independent heritage specialist. Possibly what the Proponent can do prior to drilling activity is to hire a botanist to assist with a site assessment and possibly relocate sensitive species if possible.

Wednesday, 31 May 2023 Virtual (Zoom) Meeting			
Name	**Stakeholder Details**	**Comment/Question Received**	**Response/Clarification**
		researched well. There is a high chance of encountering endemic succulents.	
		In the case of a successful exploration, do you tend to establish an environmental, social investment fund as part of your business model? And what percentage of your annual turnover is it normally? Has the trustees been established?	Yes, it is part of the requirement of the community sustainable investment (CSI), to commit a portion of the turnover to CSI. That should cover both environmental and social impacts. At this point the Proponent is not sure if it will be a cash rich operation, what often happens is a is set up community trust to address the social aspect, as for the environmental impacts we need to look at offset, nurseries and how the Proponent can identify target specific projects where we can add benefits. This has been discussed with the Proponent. In response to the trustees: There will be a representation from the community and the company and an independent representation.
		How and where will roads be built to access the mine, should mining activities go forward? We don't want roads to scar the landscape of the area, is it possible for it to be hidden as much as possible?	It will be part of the land access agreement. Existing roads and tracks will be used as much as possible. Any new roads maximise post-exploration land use opportunities but will be kept to a minimum. Stakeholders will be consulted beforehand about the design and location of the roads.

Wednesday, 31 May 2023 Virtual (Zoom) Meeting			
Name	**Stakeholder Details**	**Comment/Question Received**	**Response/Clarification**
			Design will minimise footprint impacts as far as practically possible.
Pete Morkel	Farm Pelgrimrust	Who will supervise the operations? Who do I go to if I have issues?	The geological consultant's (Dr Hattingh) company will provide supervision of the drilling contractors. Regarding issues, you can report to Johan Hattingh.
		During mining operations, would you be pumping water from the groundwater from the orange river? We just want to make sure when moving from exploration to mining things won't get lost and everything will be properly addressed.	The Proponent may have to look at where they can position the treatment plant and that will have various factors that impact on its accessibility, the cost of getting water to plants, many of these aspects need to be considered. In the exploration phase they capture any lessons learned. If Karas Lithium do move forward with mining, a completely new environmental assessment and environmental management plan will be drafted to assess specific impacts.

APPENDIX A – ADVERTS

WEDNESDAY 19 APRIL 2023 Market Watch Republikein Sun Allgemeine Zeitung 5

Since load shedding started

State has given Eskom half a trillion rand

Electricity pylons are seen in front of the cooling towers at the Lethabo Thermal Power Station. PHOTO REUTERS

The series of cash injections and a planned takeover of a portion of Eskom's loan portfolio will amount to R495.6 billion in the fiscal year through March 2026.

Eskom will have received close to half a trillion rand in state support almost two decades since it started imposing debilitating nationwide blackouts in 2008.

The series of cash injections and a planned takeover of a portion of Eskom's loan portfolio will amount to R495.6 billion in the fiscal year through March 2026, the National Treasury said in response to emailed questions. The figure includes Finance Minister Enoch Godongwana's R254 billion relief package for Eskom, which was announced in February and hinges on the debt-laden company meeting pre-determined performance targets meant to wean it off its reliance on public finances.

Godongwana on Friday ruled out any further cash injections for the company that's struggling to produce enough power to meet demand. That's despite calls from the newly appointed Electricity Minister Kgosientsho Ramokgopa for more fiscal support to ease outages, known locally as load shedding.

Straying from the latest debt-relief plan would test the credibility of South Africa's fiscal framework and budget processes in a country with a full house of junk credit ratings. It would also rattle investors who have placed a premium on the currency because of the slow pace of economic reforms, severe power rationing and logistics-network constraints that are eroding the nation's growth prospects.

The rand has weakened more than 6% against the dollar this year, making it the worst performer in a basket of 16 major currencies tracked by Bloomberg.

Eskom has subjected the country to blackouts for all but one 24-hour cycle this year. The severity is expected to increase during the South African winter that runs from June through August. The intense outages that limit people's ability to heat and light their homes and cook food in the colder months may stoke discontent in a nation where there is growing anger over the government's failure to deliver basic services, according to analysts.

- Fin24

ECC

NOTICE OF AN ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED KARAS LITHIUM PROJECT ON EPL 7574, //KHARAS REGION, NAMIBIA

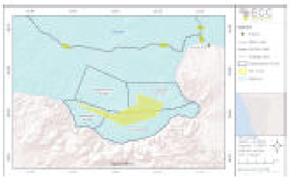
Environmental Compliance Consultancy (Pty) Ltd. provides this notice to members of the public that an application for an environmental clearance certificate in accordance with the Environmental Management Act, No. 7 of 2007 will be made for the proposed Karas Lithium project on EPL 7574, //Kharas Region, Namibia. Members of the public are invited to register as an interested and affected party (I&APs), are invited to attend a public meeting and provide input into the environmental clearance certificate application process.

Applicant: Karas Lithium Resources (Pty) Ltd.

Environmental Assessment Practitioner (EAP): Environmental Compliance Consultancy

Location: //Kharas Region, Namibia

Project Location: Located in the Karasburg district, south of Karasburg near the Orange River and can be accessed via the B3 to Karasburg, turn off onto the C10 and then turn off onto the D206 road.



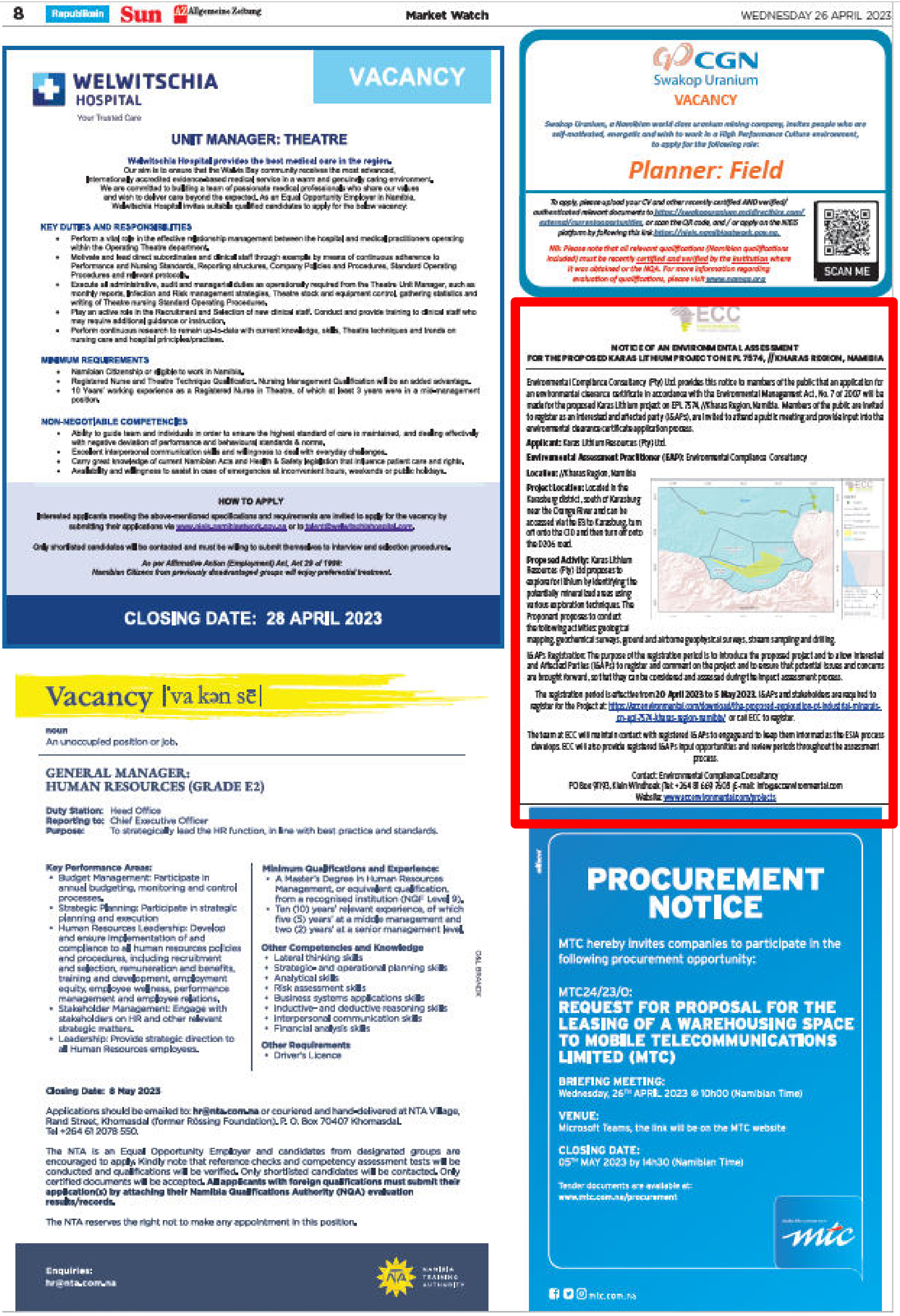
Proposed Activity: Karas Lithium Resources (Pty) Ltd proposes to explore for lithium by identifying the potentially mineralised areas using various exploration techniques. The Proponent proposes to conduct the following activities: geological mapping, geochemical surveys, ground and airborne geophysical surveys, stream sampling and drilling.

I&APs Registration: The purpose of the registration period is to introduce the proposed project and to allow Interested and Affected Parties (I&APs) to register and comment on the project and to ensure that potential issues and concerns are brought forward, so that they can be considered and assessed during the impact assessment process.

The registration period is effective from 20 April 2023 to 5 May 2023. I&APs and stakeholders are required to register for the Project at: https://eccenvironmental.com/download/the-proposed-exploration-of-industrial-minerals-on-epl-7574-kharas-region-namibia/ or call ECC to register.

The team at ECC will maintain contact with registered I&APs to engage and to keep them informed as the ESIA process develops. ECC will also provide registered I&APs input opportunities and review periods throughout the assessment process.

Contact: Environmental Compliance Consultancy
PO Box 91193, Klein Windhoek | Tel: +264 81 669 7608 | E-mail: info@eccenvironmental.com
Website: www.eccenvironmental.com/projects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Republikein
Sun
Allgemeine Zeitung
Market Watch
WEDNESDAY 26 APRIL 2023
WELWITSCHIA HOSPITAL
VACANCY
UNIT MANAGER: THEATRE
HOW TO APPLY
CLOSING DATE: 28 APRIL 2023
CGN
Swakop Uranium
VACANCY
Planner: Field
SCAN ME
NOTICE OF AN ENVIRONMENTAL ASSESSMENT
FOR THE PROPOSED KARAS LITHIUM PROJECT ON EPL 7574, //KHARAS REGION, NAMIBIA
Environmental Compliance Consultancy (Pty) Ltd provides this notice to members of the public that an application for an environmental clearance certificate in accordance with the Environmental Management Act, No. 7 of 2007 will be made for the proposed Karas Lithium project on EPL 7574, //Kharas Region, Namibia. Members of the public are invited to register as an interested and affected party (I&APs), are invited to attend a public meeting and provide input into the environmental clearance certificate application process.
Applicant: Karas Lithium Resources (Pty) Ltd.
Environmental Assessment Practitioner (EAP): Environmental Compliance Consultancy
Location: //Kharas Region, Namibia
Project Location: Located in the Karasburg district, south of Karasburg near the Orange River and can be accessed via the B3 to Karasburg, turn off onto the C10 and then turn off onto the D206 road.
Proposed Activity: Karas Lithium Resources (Pty) Ltd proposes to explore for lithium by identifying the potentially mineralised areas using various exploration techniques. The Proponent proposes to conduct the following activities: geological mapping, geochemical surveys, ground and airborne geophysical surveys, stream sampling and drilling.
I&APs Registration: The purpose of the registration period is to introduce the proposed project and to allow Interested and Affected Parties (I&APs) to register and comment on the project and to ensure that potential issues and concerns are brought forward, so that they can be considered and assessed during the impact assessment process.
The registration period is effective from 20 April 2023 to 5 May 2023. I&APs and stakeholders are requested to register for the Project at: https://eccenvironmental.com/download/the-proposed-exploration-of-industrial-minerals-on-epl-7574-kharas-region-namibia/ or call ECC to register.
The team at ECC will maintain contact with registered I&APs to engage and to keep them informed as the ESIA process develops. ECC will also provide registered I&APs input opportunities and review periods throughout the assessment process.
Contact: Environmental Compliance Consultancy
PO Box 91193, Klein Windhoek | Tel: +264 81 669 7608 | E-mail: info@eccenvironmental.com
Website: www.eccenvironmental.com/projects
Vacancy [ˈva kən sē]
noun
An unoccupied position or job.
GENERAL MANAGER:
HUMAN RESOURCES (GRADE E2)
Closing Date: 8 May 2023
Enquiries:
hr@nta.com.na
PROCUREMENT NOTICE
MTC hereby invites companies to participate in the following procurement opportunity:
MTC24/23/O:
REQUEST FOR PROPOSAL FOR THE LEASING OF A WAREHOUSING SPACE TO MOBILE TELECOMMUNICATIONS LIMITED (MTC)
BRIEFING MEETING:
Wednesday, 26TH APRIL 2023 @ 10h00 (Namibian Time)
VENUE:
Microsoft Teams, the link will be on the MTC website
CLOSING DATE:
05TH MAY 2023 by 14h30 (Namibian Time)
Tender documents are available at:
www.mtc.com.na/procurement
mtc

APPENDIX B - STAKEHOLDER LETTERS

Environmental Compliance Consultancy (Pty) Ltd
PO Box 91103 Klein Windhoek Namibia
info@eccenvironmental.com
www.eccenvironmental.com
+264 81 669 7608

ECC-139-449-LET-13-A

22 May 2023

Identified Stakeholders and potentially interested or affected parties

Dear Stakeholders,

RE – NOTIFICATION OF ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED KARAS LITHIUM PROJECT FOR LITHIUM EXPLORATION ACTIVITIES WITHIN EPL 7574, //KARAS REGION, NAMIBIA.

Environmental Compliance Consultancy (ECC) has been engaged by Karas Lithium Resources (Pty) Ltd, the Proponent, as their environmental assessment practitioner to conduct the environmental clearance certificate application in terms of the Environmental Management Act, No. 7 of 2007 for the proposed lithium exploration activities within EPL 7574.

The proposed Project is in the Karasburg district, south of Karasburg near the Orange River. The Proponent proposes to explore for lithium by identifying the potentially mineralised areas using various exploration techniques, such as sediment sampling, geophysical surveys, geological mapping and drilling.

This letter is intended to engage potentially interested and affected parties (I&APs) for the Project and to provide a communication channel to ECC while the environmental and social impact assessment (ESIA) is in process.

Public participation is an important part of the ESIA process, as it allows the I&APs to obtain information about the proposed project and provide feedback to the assessment practitioners.

For this reason, ECC would like to have a focused meeting with you and the neighbouring farms over which the EPL falls to discuss any concerns and answer questions you may have.

Date: 31 May 2023 **Time:** 17:00 **Venue:** Warmbad Public Library

Should you require further information about the project or wish to register as an I&AP to receive ongoing

Date: 31 May 2023 **Time:** 17:00 **Venue:** Warmbad Public Library

Should you require further information about the project or wish to register as an I&AP to receive ongoing updates about the Project please feel free to download the BID and register using the link below:
https://eccenvironmental.com/download/the-proposed-exploration-of-industrial-minerals-on-epl-7574-kharas-region-namibia/
Or if you are unable to complete the registration form online, please contact us via email for assistance at info@eccenvironmental.com.

Additionally, as the exclusive prospecting licence incorporates portions of your farm, our team along with the proponent would kindly like to request access to your farm to conduct a site visit on the 31st of May 2023 – 1st

+264 81669 7608
info@eccenvironmental.com
www.eccenvironmental.com
PO BOX 91193
Klein Windhoek
Namibia

of June 2023 and would require vehicle access. This visit would consist of simply walking around to evaluate any sensitive areas, flora, fauna, or heritage sites that should be considered during the impact assessment.

ECC values community input and participation in our projects and we look forward to working with you through the assessment process.

Should you have any questions or require additional information please do not hesitate to contact our office, and a team member will assist you.

Yours sincerely,

Stephan Bezuidenhout
stephan@eccenvironmental.com

Jessica Bezuidenhout Mooney
jessica@eccenvironmental.com

APPENDIX C - SITE NOTICES

GPS Coordinates:
Lat: -28.74540901
Long: 19.1149883

GPS Coordinates:
Lat: -28.813772201
Long: 19.09729576

APPENDIX D – BID

APPENDIX E – VIRTUAL FOCUS MEETING INVITATION

Monique Jarrett <monique@eccenvironmental.com>

139-449: Request for access to farm from 31st of May to 1st of June
1 message

Monique Jarrett <monique@eccenvironmental.com> 26 May 2023 at 15:18
To: Anke Stegmann <anke.stegmann@me.com>, andreia pawel <andreia@orkca.org>, Ed Barthorp <ed@orkca.org>, Johannes Van De Merwe <jannie@orkca.org>, petemorkel@gmail.com, peter.koep@gmail.com
Cc: Kelly Ochs <kelly@eccenvironmental.com>, AllRound Namibia <logistics@iway.na>, "William Morrell (OTR)" <william@optiterrae.com>, Jessica Bezuidenhout <jessica@eccenvironmental.com>, Stephan Bezuidenhout <stephan@eccenvironmental.com>, James Lumley <jlumley1967@icloud.com>, hattingh@creo.co.za

Dear Mr Morkel, Ms Stegmann and Mr Koep,

ECC is a team of experienced environmental consultants who value the protection of biodiversity and livelihoods above all else. With that said we are an environmental consulting firm and do not partake in mining or exploration activities, we are only involved in the environmental and social impact assessment and monitoring thereof.

Our site visits that are conducted during scoping and environmental impact assessments are solely to assess any sensitive habitats or protected species which may occur on site, along with the desktop studies we conduct to establish a baseline of the biophysical and social environment. We then continue to base our assessments against that established baseline. These visits do not require us to analyze the entire site and would not require more than a day.

Should we require a more in-depth study to be conducted such as the heritage assessment that needs to be conducted, we commission specialists to conduct these studies. Should accommodation, a guide etc be needed along with that specialist's scope of work, that will be thoroughly discussed and arranged with you in advance.

Nonetheless, we understand your concerns and are more than willing to provide any documentation you may require before any site visits may be arranged.

However, due to the fact that there has been very little response from the I&APs for a focused group meeting, we would like to recommend a virtual meeting instead to discuss the Project with you both and any other interested parties that may be interested to join. I will send out an invite on Monday.

Additionally, we will need to conduct a heritage assessment but I will contact you both individually throughout the course of this week to arrange that.

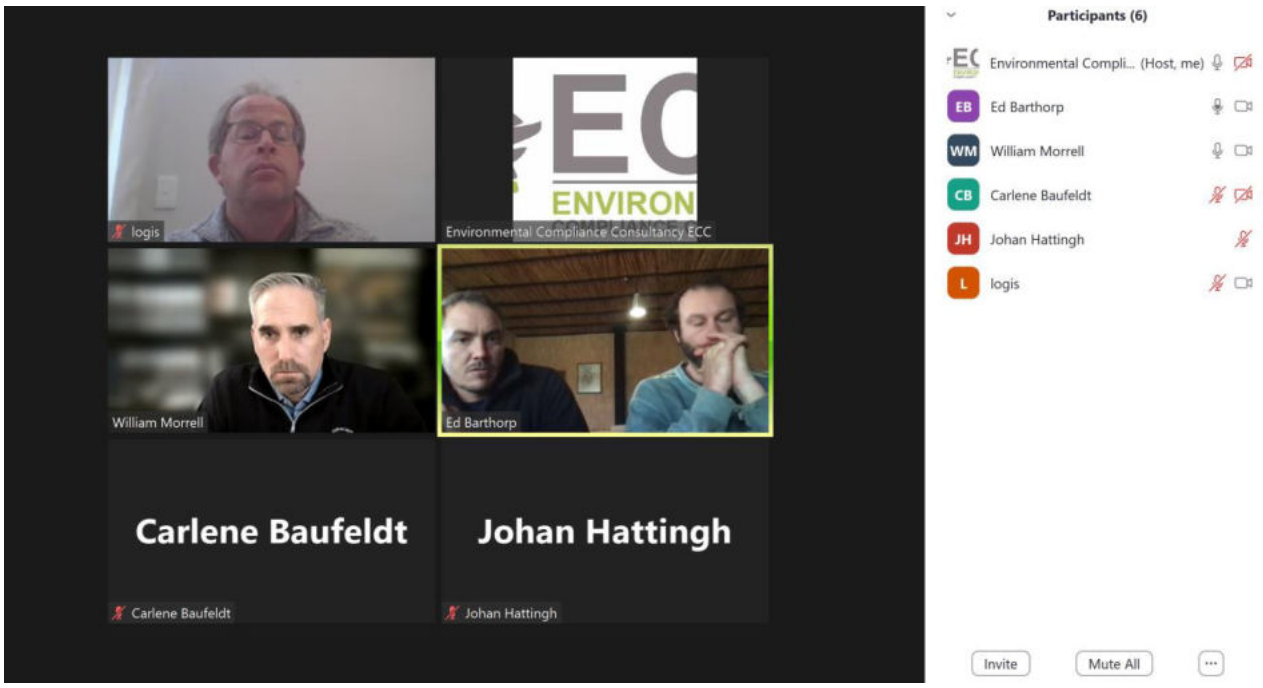
Should you have any further questions or concerns please do not hesitate to contact us.

Kind regards,

Monique Jarrett
Environmental Compliance Consultancy (ECC)
Position: Environmental Practitioner

Office Tel: +264 81 669 7608
Postal: PO BOX 91193 | Klein Windhoek | Namibia
Address: 1 Jan Jonker St | Wasserberg Park | Klein Windhoek | Namibia
Email: monique@eccenvironmental.com
Website: www.eccenvironmental.com

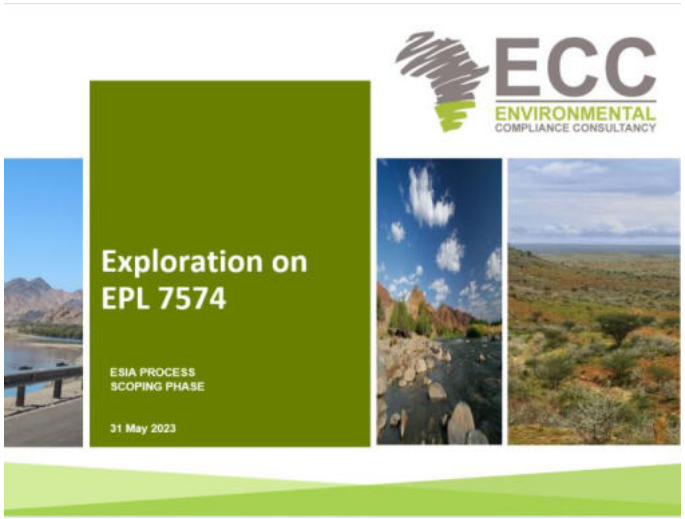
APPENDIX F – ATTENDACE REGISTERS

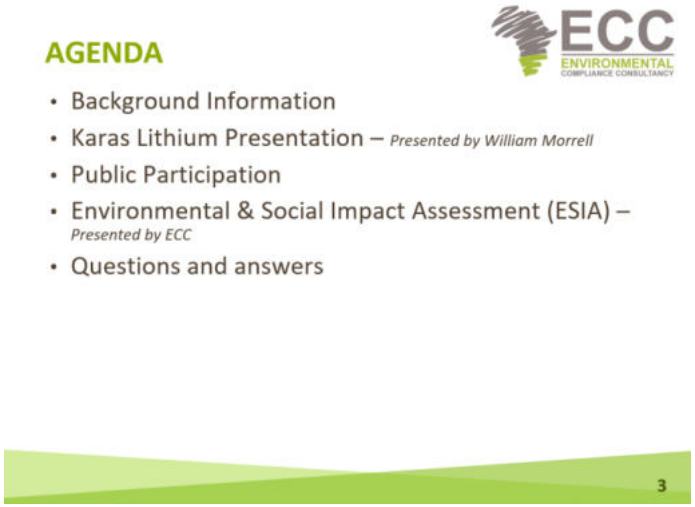


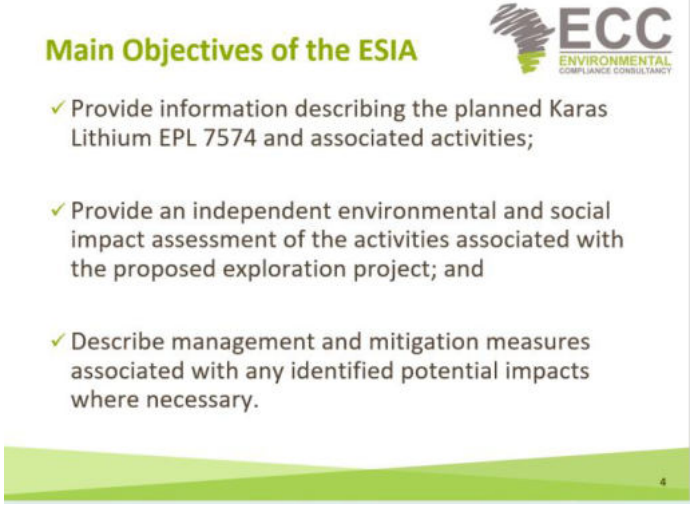
Name	Organisation/farm they represent
William Morrell	Director of Karas Lithium Resources (Pty)
Dr Johan Hatting	Senior Geologist for Karas Lithium Resources (Pty)
Jaco van Vuuren	Logistics manager for Karas Lithium Resources (Pty)
Pete Morkel	Owner of Farms Kambreek and Pelgrimrust
Anke Stegmann	Owner of Farm Oranjevalle
Ed Barthop	Representative of ORKCA
Johannes van de Merwe	Representative of ORKCA
Monique Jarrett	ECC
Carlene Baufeldt	ECC
Kelly Ochs	ECC

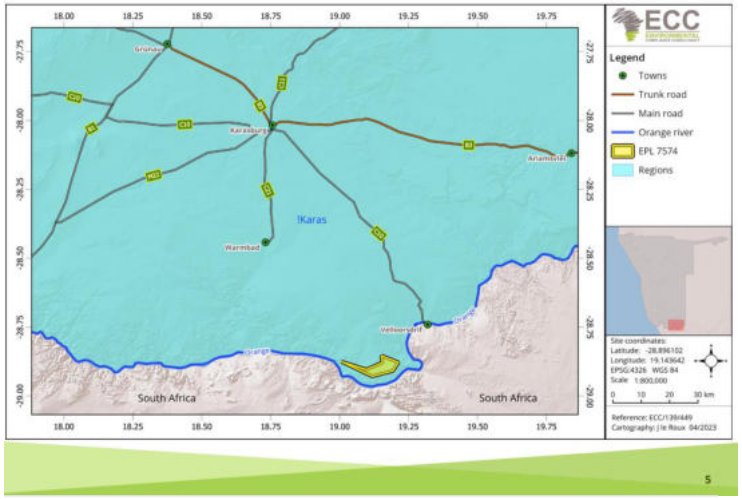
Name	Organisation/farm they represent
Veto Islasia Katjivena	ECC

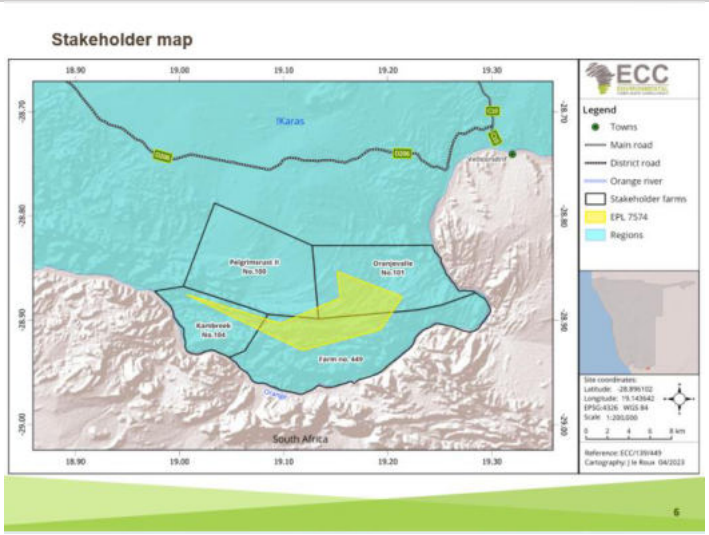
APPENDIX G – STAKEHOLDER MEETING PRESENTATION

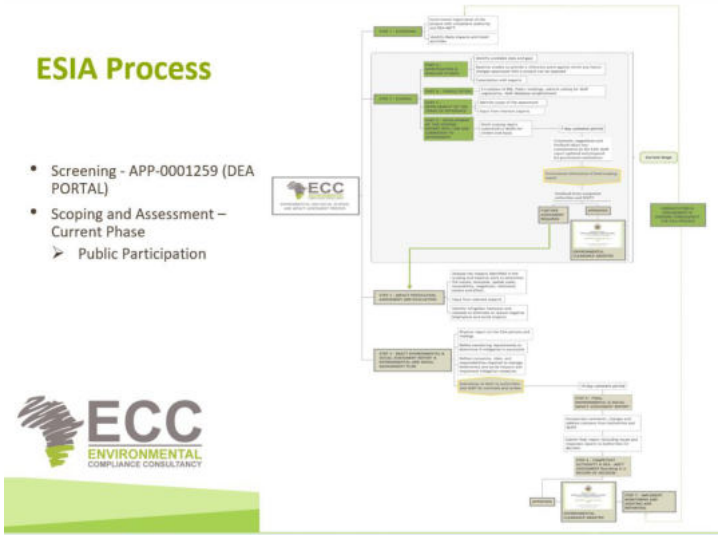




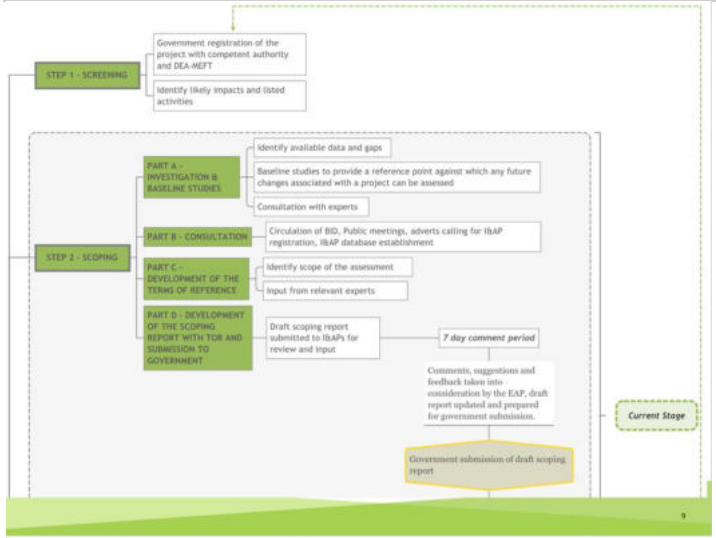



Legend
Towns
Trunk road
Main road
Orange river
EPL 7574
Regions
IKaras
South Africa
South Africa
5


Stakeholder map
Legend
Towns
Main road
District road
Orange river
Stakeholder farms
EPL 7574
Regions
IKaras
South Africa
6


ESIA Process
Screening - APP-0001259 (DEA PORTAL)
Scoping and Assessment – Current Phase
Public Participation
ECC ENVIRONMENTAL COMPLIANCE CONSULTANCY

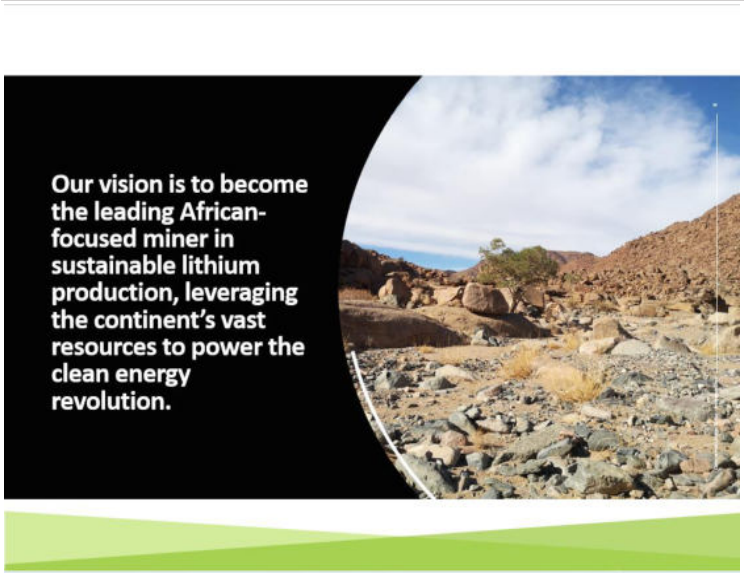

ESIA Process
ECC ENVIRONMENTAL COMPLIANCE CONSULTANCY
Screening – APP-0001259 (DEA PORTAL)
ACTIVITIES THAT TRIGGERED A CLEARANCE CERTIFICATE APPLICATION
WASTE MANAGEMENT, TREATMENT, HANDLING AND DISPOSAL ACTIVITIES
MINING AND QUARRYING ACTIVITIES
FORESTRY ACTIVITIES
WATER RESOURCE DEVELOPMENT
HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE

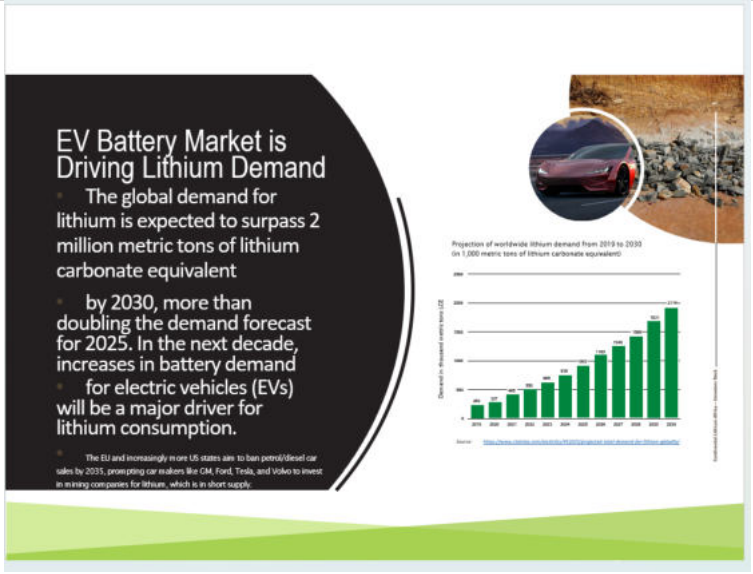

Government registration of the project with competent authority and DEA-MEFT
STEP 1 - SCREENING
Identify likely impacts and listed activities
Identify available data and gaps
PART A - INVESTIGATION & BASELINE STUDIES
Baseline studies to provide a reference point against which any future changes associated with a project can be assessed
Consultation with experts
PART B - CONSULTATION
Circulation of BID, Public meetings, adverts calling for I&AP registration, I&AP database establishment
STEP 2 - SCOPING
PART C - DEVELOPMENT OF THE TERMS OF REFERENCE
Identify scope of the assessment
Input from relevant experts
PART D - DEVELOPMENT OF THE SCOPING REPORT WITH TOR AND SUBMISSION TO GOVERNMENT
Draft scoping report submitted to I&APs for review and input
7 day comment period
Comments, suggestions and feedback taken into consideration by the EAP, draft report updated and prepared for government submission.
Government submission of draft scoping report
Current Stage


Continental Lithium
AFRICA
Interested and Affected Parties presentation
31 May 2023

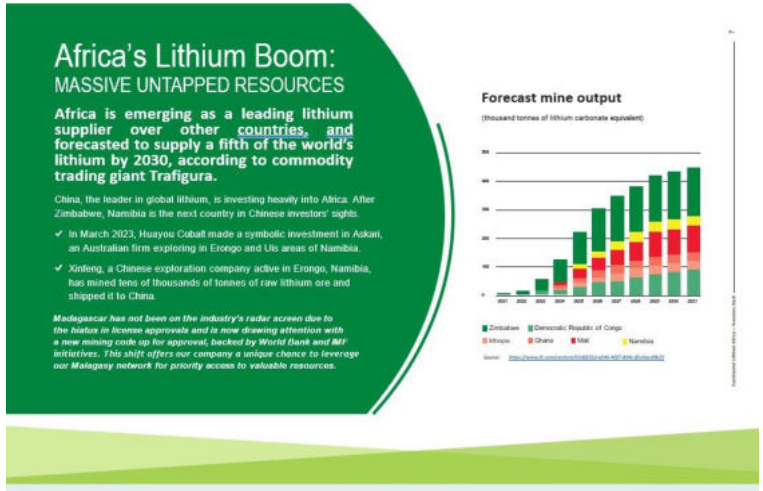

Company Highlights
Diversified African Lithium Assets in Namibia and Madagascar
Securing multiple exploration and mining licenses in both areas offering stability and a broad range of opportunities at various stages of development for lithium extraction.
Positioned in regions demonstrated to be rich in lithium resources, ensuring access to high-grade lithium deposits for long-term profitability.
Committed to environmentally and socially responsible practices, preserving natural resources and fostering positive relationships with local communities.
Advanced Exploration: Utilizing advanced remote sensing technology and innovative techniques to optimize lithium identification, maximizing resource potential.
Efficient extraction and enrichment: access to energy efficient beneficiation technology to reduce operating costs and reduced environmental impact.
World-Class Capability in Mineral Resource Project Design, Development, and Operations
Leveraging advanced geospatial technology to identify and evaluate high-grade lithium resources in Namibia and Madagascar.
Project Development & Management: Streamlining the lithium extraction process through efficient project planning, execution, and management.
Market Analysis & Strategy: Assessing global lithium market trends to make informed decisions and position the company for long-term growth.
Environmental and Social Stewardship: Implementing sustainable mining and beneficiation practices to minimize ecological impact and protect local ecosystems while providing meaningful employment and development opportunities for local communities.
Veteran Mining Management Team with a Proven Record of Operational Excellence
Team of industry experts with a proven track record in lithium exploration and mine development in Africa, ensuring successful execution of projects, including experience in leading over US 4 billion worth of projects over 30 years.
Collaborating with strategic partners, including financial institutions, government entities and industry leaders, to secure access to crucial resources and drive growth.


Company Overview
Continental Lithium Africa is a mineral resource development company providing practical and value-driven strategies for project identification, design, development, and operations, targeting the massive untapped African lithium and battery metals resources opportunity.
The company has built a team of experienced miners and project developers, leveraging advanced technologies and proven methodologies, to navigate the complex mining industry value chain. The company is committed to sustainable mining practices and strong community engagement, ensuring environmentally responsible operations.
The company is developing a portfolio of lithium properties in Namibia and Madagascar. With significant progress made in remote sensing, mapping, and site assessments, the company has identified and secured promising prospects and provided guidance on the next steps for exploration and development. Experience in efficiently developing greenfield projects will maximize value for shareholders and partners.

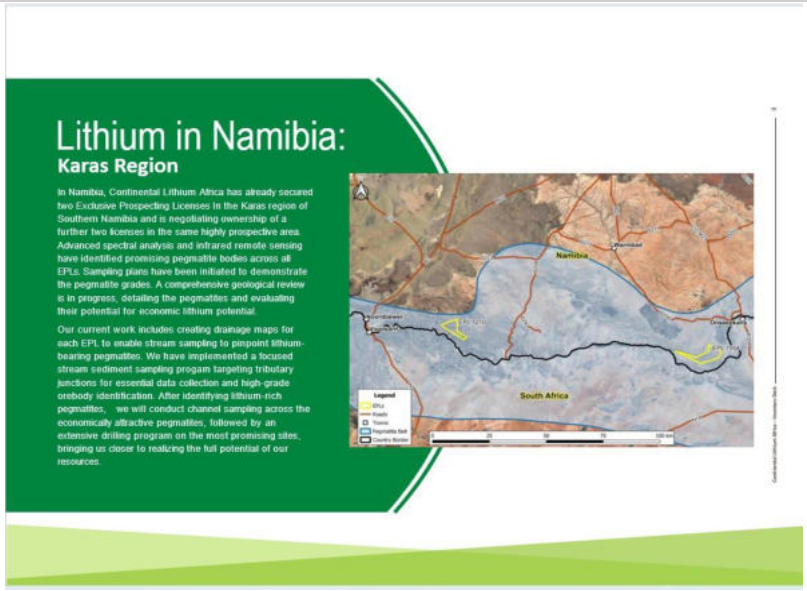

Our vision is to become the leading African-focused miner in sustainable lithium production, leveraging the continent's vast resources to power the clean energy revolution.

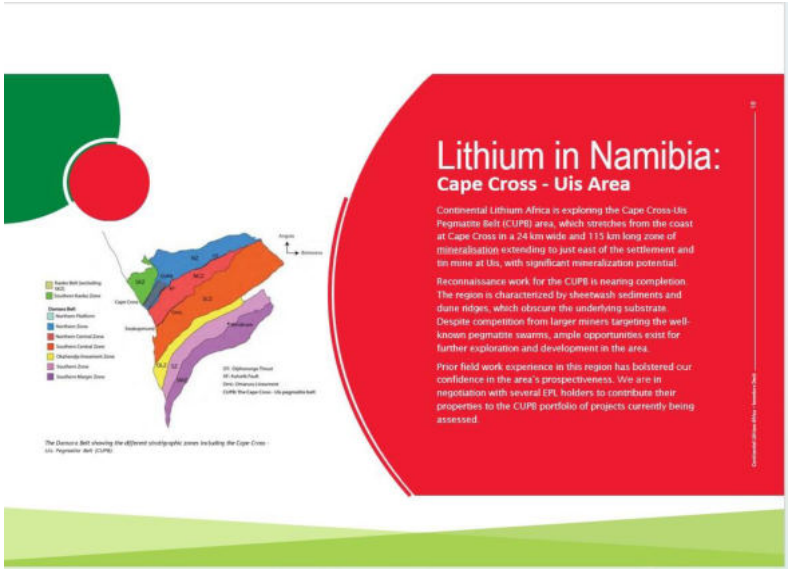

EV Battery Market is Driving Lithium Demand
The global demand for lithium is expected to surpass 2 million metric tons of lithium carbonate equivalent
by 2030, more than doubling the demand forecast for 2025. In the next decade, increases in battery demand
for electric vehicles (EVs) will be a major driver for lithium consumption.
The EU and increasingly more US states aim to ban petrol/diesel car sales by 2035, prompting car makers like GM, Ford, Tesla, and Volvo to invest in mining companies for lithium, which is in short supply.
Projection of worldwide lithium demand from 2019 to 2030 (in 1,000 metric tons of lithium carbonate equivalent)


Lithium Supply Shortage Is Expected by 2030
Forecasted global lithium supply and demand (in million tons LCE)
Mines in operation
Recycling
Probable new extraction
Lithium demand
Possible new extraction
"White Gold" Lithium Supply Shortage
The supply of lithium is expected to face chronic shortages by 2030, even with the addition of new mining and recycling projects. This is due to a projected fall in the amount of lithium extracted from deposits around the world and the heavy concentration of refining capacity in only a few countries. Increasing production is challenging due to environmental hazards and the vast amounts of water required for conventional extraction methods. New technologies hold promise for reducing the environmental impact, but the challenge is to deploy them at scale.
Continental Lithium Africa has identified energy and resource efficient concentration and extraction technologies, significantly reducing the impact of lithium production.


Africa's Lithium Boom:
MASSIVE UNTAPPED RESOURCES
Africa is emerging as a leading lithium supplier over other countries, and forecasted to supply a fifth of the world's lithium by 2030, according to commodity trading giant Trafigura.
China, the leader in global lithium, is investing heavily into Africa. After Zimbabwe, Namibia is the next country in Chinese investors' sights.
In March 2023, Huayou Cobalt made a symbolic investment in Askari, an Australian firm exploring in Erongo and Uis areas of Namibia.
Xinfeng, a Chinese exploration company active in Erongo, Namibia, has mined tens of thousands of tonnes of raw lithium ore and shipped it to China.
Madagascar has not been on the industry's radar screen due to the hiatus in license approvals and is now drawing attention with a new mining code up for approval, backed by World Bank and IMF initiatives. This shift offers our company a unique chance to leverage our Malagasy network for priority access to valuable resources.
Forecast mine output
(thousand tonnes of lithium carbonate equivalent)
Zimbabwe
Democratic Republic of Congo
Ethiopia
Ghana
Mali
Namibia


Our Capabilities Across the Value Chain
Continental Lithium Africa has the international expertise and relationships to overcome challenges of setting up processing plants in Africa, including supply chain management.
The EU and increasingly more US states aim to ban petrol/diesel car sales by 2035, prompting car makers like GM, Ford, Tesla, and Volvo to invest in mining companies for lithium, which is in short supply.
Focused Due Diligence
Comprehensive assessments including market, technology, geography, resources, environment and stakeholder considerations.
Exploration & Data Management
Use of industry experts with deep pegmatite knowledge for designing, managing and analysing exploration activities ensuring robust data and modelling outputs.
Portfolio Management & Valuation
Balanced project selection approach based on key drivers, including market conditions, funding, sovereign risk, partners selection, skills availability, and economic metrics for valuation.
Project Execution Strategy & Implementation
Tailored solutions with optimal cost-risk balance, considering project specifics, capabilities, lenders, scope, environment, stakeholders, cost and safety, via a range of execution methods from self-perform to LSTK.
Contracting & Procurement
Efficient, transparent processes with quantitative bid analyses for mitigating risk, improving bottom line and protecting reputation.
Construction Management
Owner-driven, customized construction management solutions with key tools and partnerships for effective project execution.
Mine Design & Fleet Optimization
Expert guidance in design, valuation, equipment selection, and metallurgical optimization for improved productivity and reduced operating costs.


Lithium in Namibia:
Karas Region
In Namibia, Continental Lithium Africa has already secured two Exclusive Prospecting Licenses in the Karas region of Southern Namibia and is negotiating ownership of a further two licenses in the same highly prospective area. Advanced spectral analysis and infrared remote sensing have identified promising pegmatite bodies across all EPLs. Sampling plans have been initiated to demonstrate the pegmatite grades. A comprehensive geological review is in progress, detailing the pegmatites and evaluating their potential for economic lithium potential.
Our current work includes creating drainage maps for each EPL to enable stream sampling to pinpoint lithium-bearing pegmatites. We have implemented a focused stream sediment sampling progam targeting tributary junctions for essential data collection and high-grade orebody identification. After identifying lithium-rich pegmatites, we will conduct channel sampling across the economically attractive pegmatites, followed by an extensive drilling program on the most promising sites, bringing us closer to realizing the full potential of our resources.
Namibia
South Africa


Lithium in Namibia:
Cape Cross - Uis Area
Continental Lithium Africa is exploring the Cape Cross-Uis Pegmatite Belt (CUPB) area, which stretches from the coast at Cape Cross in a 24 km wide and 115 km long zone of mineralisation extending to just east of the settlement and tin mine at Uis, with significant mineralization potential.
Reconnaissance work for the CUPB is nearing completion. The region is characterized by sheetwash sediments and dune ridges, which obscure the underlying substrate. Despite competition from larger miners targeting the well-known pegmatite swarms, ample opportunities exist for further exploration and development in the area.
Prior field work experience in this region has bolstered our confidence in the area's prospectiveness. We are in negotiation with several EPL holders to contribute their properties to the CUPB portfolio of projects currently being assessed.

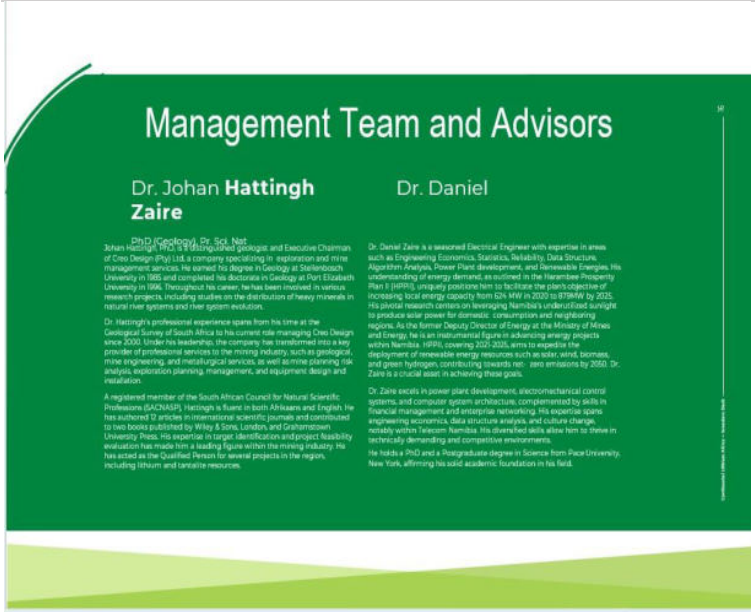

Lithium in Namibia:
Cape Cross - Uis Area
Continental Lithium Africa has already secured 12 mining claims, which are being converted into mining licences and four EPLsin and adjacent to this mineralized zone of Cape Cross - Uis Area.


Government & Global Interests in African Resources
Amos Hochstein
"We would like to see American and European and Australian investment into African supply chains"
(Digital Press Briefing, November 9, 2022)
Anthony Viljoen
"We believe this province [Erongo] will become a globally significant metallogenic province for new technology metals"
(Afrtin Mining, Annual Report 2021)
Thierry Breton
"Visit on the ground in Uis in Namibia of one of the potential largest lithium hardrock mine[s] in the world."
(Jan 24, 2023)


ESG
At Continental Lithium Africa, our dedication to Environmental, Social, and Governance (ESG) principles drives us to create shared value by prioritizing safety, environmental responsibility, and inclusivity. We strive to maximize our operation's positive impact on local communities and surpass regulatory standards to achieve the highest level of environmental performance.
Our lithium projects emphasize a reduced carbon footprint and lower greenhouse gas (GHG) emissions compared to traditional pegmatite mining, demonstrating our commitment to sustainability and eco-friendly practices. We base our social and environmental management plans on global best practices and standards.


Our Values
Transparent & Open Communication
Comprehensive assessments including market, technology, geography, resources, environment and stakeholder considerations.
Efficiency & Performance
Assistance with key personnel, progress reviews, supplier selection and data management for effective exploration programs.
Trust & Integrity
Our strong reputation is built on a solid code of conduct and business ethics that guide every aspect of our operations, ensuring we remain beyond reproach.
Safety & Security
We carefully assess risks in mining operations, including physical, political, environmental, and legal factors, to safeguard your team and investments.


Management Team and Advisors
Steve Mynott
William Morrell
James Lumley



Management Team and Advisors

Dr. Johan **Hattingh Zaire**

PhD (Geology), Pr. Sci. Nat

Johan Hattingh PhD is a distinguished geologist and Executive Chairman of Creo Design (Pty) Ltd, a company specializing in exploration and mine management services. He earned his degree in Geology at Stellenbosch University in 1985 and completed his doctorate in Geology at Port Elizabeth University in 1996. Throughout his career, he has been involved in various research projects, including studies on the distribution of heavy minerals in natural river systems and river system evolution.

Dr. Hattingh's professional experience spans from his time at the Geological Survey of South Africa to his current role managing Creo Design since 2000. Under his leadership, the company has transformed into a key provider of professional services to the mining industry, such as geological, mine engineering, and metallurgical services, as well as mine planning risk analysis, exploration planning, management, and equipment design and installation.

A registered member of the South African Council for Natural Scientific Professions (SACNASP), Hattingh is fluent in both Afrikaans and English. He has authored 12 articles in international scientific journals and contributed to two books published by Wiley & Sons, London, and Grahamstown University Press. His expertise in target identification and project feasibility evaluation has made him a leading figure within the mining industry. He has acted as the Qualified Person for several projects in the region, including lithium and tantalite resources.

Dr. Daniel

Dr. Daniel Zaire is a seasoned Electrical Engineer with expertise in areas such as Engineering Economics, Statistics, Reliability, Data Structure, Algorithm Analysis, Power Plant development, and Renewable Energies. His understanding of energy demand, as outlined in the Harambee Prosperity Plan II (HPPII), uniquely positions him to facilitate the plant's objective of increasing local energy capacity from 624 MW in 2020 to 879MW by 2025. His pivotal research centers on leveraging Namibia's underutilized sunlight to produce solar power for domestic consumption and neighboring regions. As the former Deputy Director of Energy at the Ministry of Mines and Energy, he is an instrumental figure in advancing energy projects within Namibia. HPPII, covering 2021-2025, aims to expedite the deployment of renewable energy resources such as solar, wind, biomass, and green hydrogen, contributing towards net- zero emissions by 2050. Dr. Zaire is a crucial asset in achieving these goals.

Dr. Zaire excels in power plant development, electromechanical control systems, and computer system architecture, complemented by skills in financial management and enterprise networking. His expertise spans engineering economics, data structure analysis, and culture change, notably within Telecom Namibia. His diversified skills allow him to thrive in technically demanding and competitive environments.

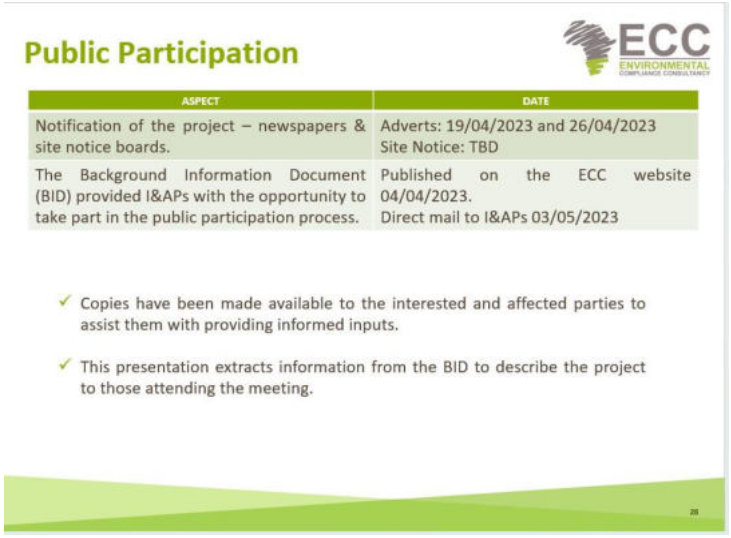
He holds a PhD and a Postgraduate degree in Science from Pace University, New York, affirming his solid academic foundation in his field.

Disclaimer

Certain statements contained in this presentation constitute forward-looking statements within the meaning of Canadian securities legislation. All statements included herein, other than statements of historical fact, are forward-looking statements which may include, without limitation, statements about Continental Lithium Africa Development Corporation ("the Company") plans for its investments and properties; the Company's business strategy, plans and outlook; the merit of the Company's investments and properties; timelines; the future financial performance of the Company; expenditures; approvals and other matters. Often, but not always, these forward looking statements can be identified by the use of words such as "estimate", "estimates", "estimated", "potential", "open", "future", "assumed", "projected", "used", "detailed", "has been", "gain", "upgraded", "offset", "limited", "contained", "reflecting", "containing", "remaining", "to be", "periodically", or statements that events, "could" or "should" occur or be achieved and similar expressions, including negative variations.

Forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any results, performance or achievements expressed or implied by forward-looking statements. Such uncertainties and factors include, among others, changes in general economic conditions and financial markets; the Company or any joint venture partner not having the financial ability to meet its exploration and development goals; risks associated with the results of exploration and development activities, estimation of mineral resources and the geology, grade and continuity of mineral deposits; unanticipated costs and expenses; and such other risks detailed from time to time in the Company's quarterly and annual filings with securities regulators and available under the Company's profile on SEDAR at www.sedar.com. Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results to differ from those anticipated, estimated or intended.

Forward-looking statements contained herein are based on the assumptions, beliefs, expectations and opinions of management, including but not limited to expectations that the Company's activities will be in accordance with its public statements and stated goals; that all required approvals will be obtained; that there will be no material adverse change affecting the Company, its investments or properties; and such other assumptions as set out herein. Forward-looking statements are made as of the date hereof and the Company disclaims any obligation to update any forward-looking statements, whether as a result of new information, future events or results or otherwise, except as required by law. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, investors should not place undue reliance on forward-looking statements.



Public Participation

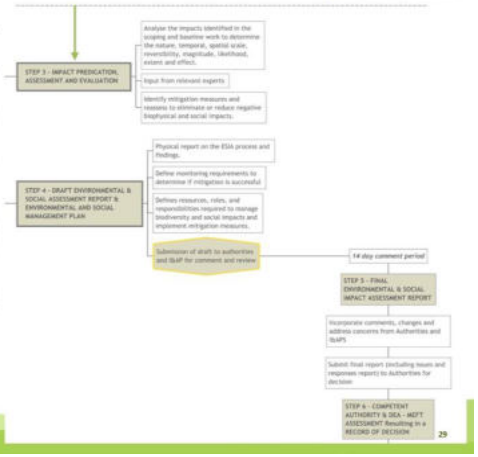
ECC ENVIRONMENTAL COMPLIANCE CONSULTANCY

ASPECT	DATE
Notification of the project – newspapers & site notice boards.	Adverts: 19/04/2023 and 26/04/2023 Site Notice: TBD
The Background Information Document (BID) provided I&APs with the opportunity to take part in the public participation process.	Published on the ECC website 04/04/2023. Direct mail to I&APs 03/05/2023

- ✓ Copies have been made available to the interested and affected parties to assist them with providing informed inputs.
- ✓ This presentation extracts information from the BID to describe the project to those attending the meeting.

Process

- Screening - APP-0001259 (DEA PORTAL)
- Scoping and assessment phase – Current Phase
  - Impact prediction and evaluation of alternatives,
  - Assigning mitigation measures
  - This phase culminates in the drafting of the Scoping plus impact assessment report and draft Environmental Management Plan (EMP) and
  - Submission to the appropriate competent authorities.



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Potential Impacts to be assessed

Potential impacts that can arise from the proposed project include but are not limited to:

- Air Quality
- Noise impacts
- Visual impacts
- Water resource impacts
- Impact on archaeological and cultural features
- Biodiversity impacts
- Socio-economic

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Environmental Management Plan (EMP)

- All mitigations will be incorporated into the Environmental & Social Management Plan (ESMP).

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Questions / Discussion ?

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Thank You For Your Time!
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COMPLIANCE CONSULTANCY
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info@eccenvironmental.com
www.eccenvironmental.com
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ESM CULTURAL HERITAGE CONSULTANTS

Trading as ESM Trading cc.Reg no: cc/2013/05545
Email: esmowa@gmail.com. esmheritage@gmail.com Mobile: 0812066372.

Heritage Impact Assessment (HIA) for the exploration of Lithium Resources on EPL 7574 near Karasburg and Orange River in //Karas Region.

Compiled by:

Dr. Mowa Eliot,

B.Ed: (UNAM)

MA: Maritime Archaeology (University of Bristol).

PhD: Archaeology (University of Pretoria).

Compiled for:

Environmental Compliance Consultancy (Pty) Ltd.

July 2023

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Authorship: This Report has been prepared by Dr Eliot Mowa. The report is for the review of the National Heritage Council of Namibia.

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Geographic Co-ordinate Information: Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device.

Maps: Maps included in this report use data extracted from the NTS Map and Google Earth Pro.

Disclaimer: The Authors are not responsible for omissions and inconsistencies that may result from information not available at the time this report was prepared.

The Archaeological and Heritage Impact Assessment Study was carried out within the context of tangible and intangible cultural heritage resources as defined by the National Heritage Council Regulations and Guidelines as to the authorisation of the proposed exploration project being proposed by Karas Lithium Resources Pty LTD.

DECLARATION

We hereby declare that we do:

1. have knowledge of and experience in conducting archaeological assessments, including knowledge of Namibian legislation, specifically the National Heritage Act (27 of 2004), as well as regulations and guidelines that have relevance to the proposed activity;

2. perform the work relating to the application objectively, even if this results in views and findings that are not favorable to the applicant;

3. comply with the aforementioned Act, relevant regulations, guidelines, and other applicable laws. We also declare that we have no interest or involvement in:
   (i) the financial or other affairs of either the applicant or his consultant; and
   (ii) the decision-making structures of the National Heritage Council of Namibia.

Signed by: 

Key Concepts and Terms

Abbreviation	Description
AIA	Archaeological Impact Assessment
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
LIA	Late Iron Age
NHA	Nation Heritage Act, Act 27 of 2004
SM	Site Manager
NHCN	National Heritage Council of Namibia
ESA	Later Stone Age
EPL	Exclusive Prospecting License
ECC	Environmental Clearance Certificate
CFP	Chance Find Procedure
EMA	Environmental Management Act

Periodization Archaeologists divide the different cultural epochs according to the dominant material finds for the different periods. This periodization is usually region-specific, such that the same label can have different dates for different areas. This makes it important to clarify and declare the periodization of the area one is studying.

These periods are nothing a little more than convenient time brackets because their terminal and commencement are not absolute and there are several instances of overlap. In the present study, relevant archaeological periods are given below;

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

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

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

Early Iron Age (~ AD 200 to 1000)

Late Iron Age (~ AD1100-1840)

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

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

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

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

Value is related to concepts such as worth, merit, attraction, or appeal, concepts that are associated with the (current) usefulness and condition of a place or an object. Although significance and value are not mutually exclusive, in some cases the place may have a high level of significance but a lower level of value. Often, the evaluation of any feature is based on a combination or balance between the two.

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

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

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

Historic materials are remains resulting from human activities, which are younger than 100 years, but no longer in use, including artifacts, human remains, and artificial features and structures.

Chance finds means archaeological artifacts, features, structures, or historical remains accidentally found during development.

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

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

Heritage Impact Assessment (HIA) refers to the process of identifying, predicting, and assessing the potential positive and negative cultural, social, economic, and biophysical impacts of any proposed project, which requires authorization of permission by law and which may significantly affect the cultural and natural heritage resources. Accordingly, an HIA must include recommendations for appropriate mitigation measures for minimizing or circumventing negative impacts, measures enhancing the positive aspects of the proposal, and heritage management and monitoring measures.

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

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

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

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

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

Executive Summary

An archaeological desktop and field survey was carried out on EPL 7574 in //Karas Region. The field survey has located some potential heritage sites within the boundaries of the EPL presented in this report. Nevertheless, site management plan (SMP) has been suggested and thoroughly outlined as recommendations for the proponent to adopt.

1. Introduction

The Namibian Government recognizes that the exploration and development of its mineral wealth could best be undertaken by the private sector. Such premise focuses on creating an enabling environment through appropriate competitive policy and regulatory frameworks for the promotion of private sector investment coupled with the provision of national geo-scientific databases essential for attracting competitive exploration and mining (Draft Minerals Policy of Namibia, MME). It is against this background that the proponent has decided to conduct exploration activities for lithium minerals on EPL 7574 operated by Karas Lithium Resources (Pty) in //Karas region.

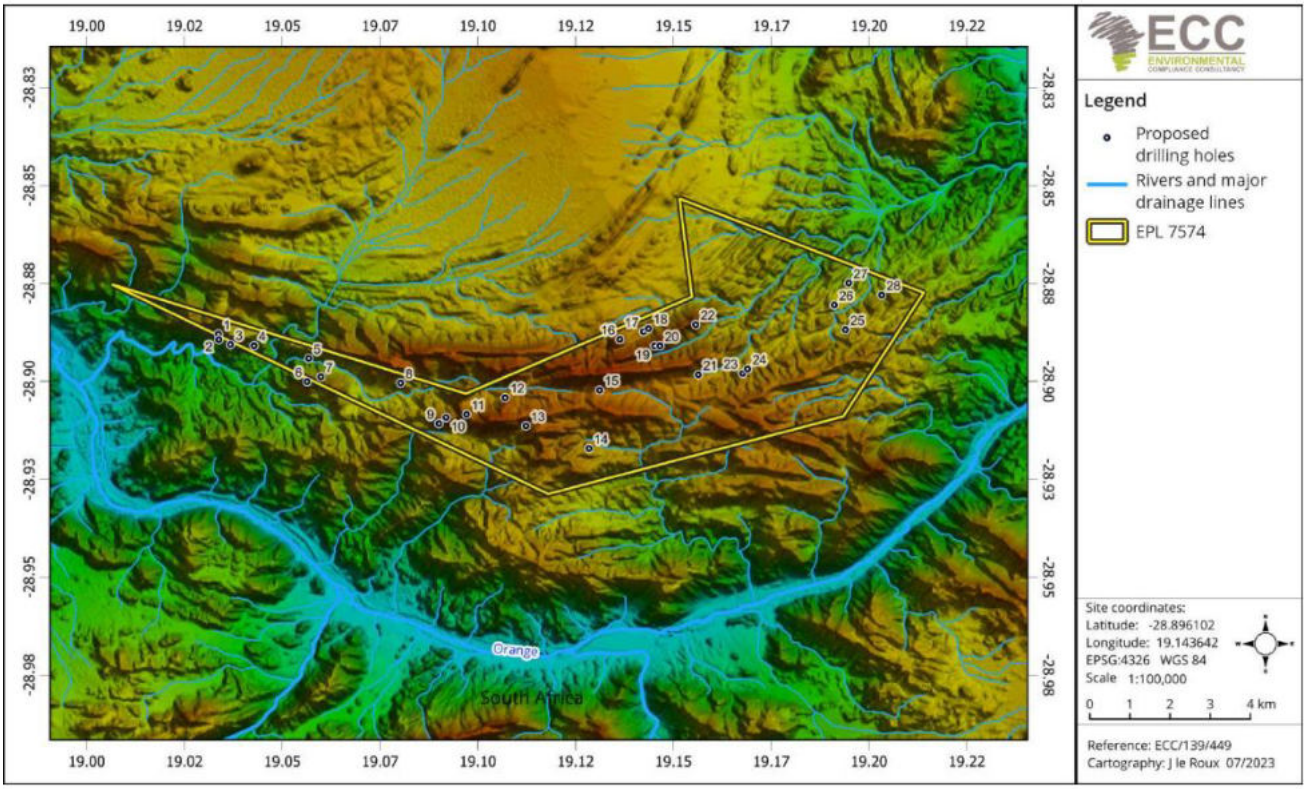
The proposed project is likely to benefit the Namibian government through the payment of the annual license fees to the Ministry of Mines and Energy. Further, the project will likely provide provisional contractual employment opportunities for the local communities.
Unrestrained natural resource mining/excavation has resulted in undesirable environmental effects in some areas of the country. This has been largely attributed to the fact that people were under no obligation to rehabilitate the affected areas and thus left behind large open pits/quarries, which pose a danger to both humans and animals. From the point of view of the environmental impact created. Karas Lithium Resources (Pty) Ltd, hereinafter referred to as the proponent through Environmental Compliance Consultancy (Pty) Ltd subcontracted ESM Archaeological and Cultural Heritage Consultants to carry out the following activity:

- **Heritage Impact Assessment (HIA) for the exploration of Lithium resources on EPL 7574 south of Karasburg near the Orange River in the //Karas region.**

The objective of the intended Heritage & Archaeological Impact Assessment (HAIA) is thus needed to:

- Assess the potential heritage and archaeological impacts associated with the intended exploration in the //Karas Region, and formulate a site management plan (SMP) as stipulated under the National Heritage Act 27 of 2004 (Section 58) read together with

the provisions of the Environmental Management Act (No. 7 of 2007) and Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012).



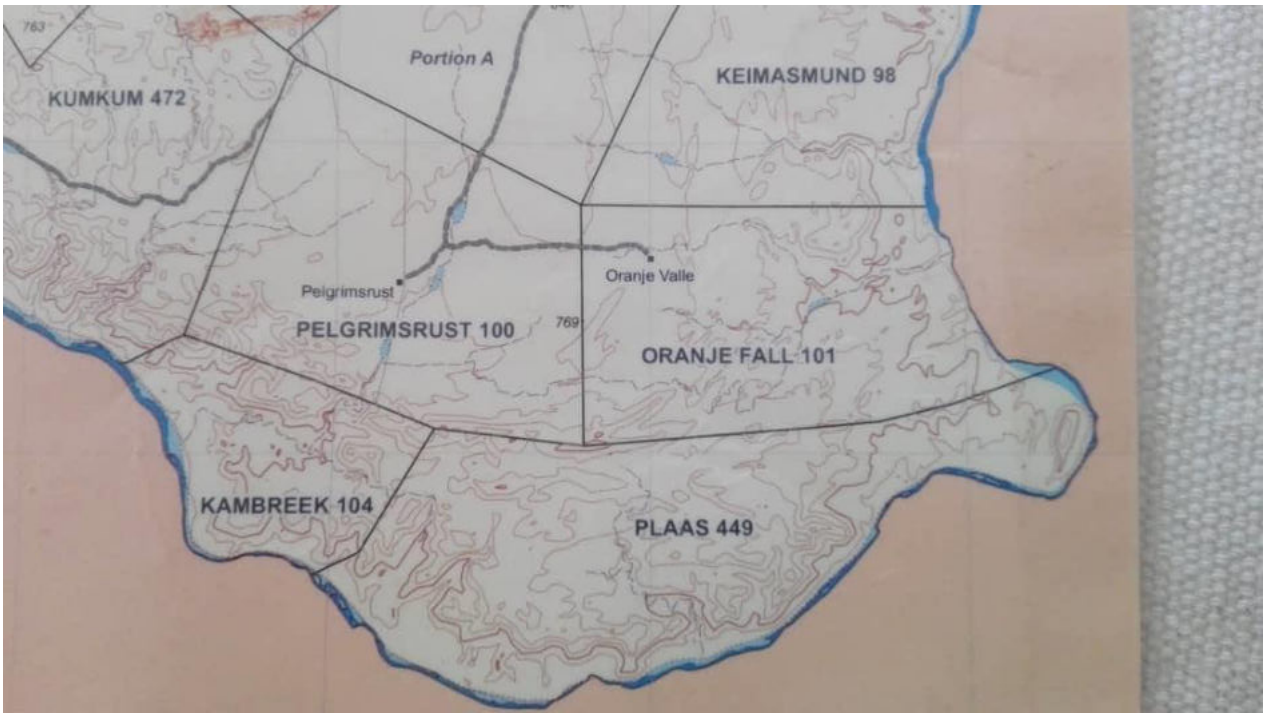


Figure 1. Top Map: Locality map of EPL 7574 between South of Karasburg near the Orange River. (Source: Environmental Compliance Consultants). Bottom Map. Three farms covered by EPL 7574, namely Kambreek 104, Plaas 449 and Oranje Fall 101 (Source Mr Morkel Pete) .

2. Legislations

In Namibia, the legal instrument for the protection of heritage sites and objects is the National Heritage Act (No. 27 of 2004). However, there are no regulations for the realization of the National Heritage Act requirements about impact assessment.

Heritage impact assessments therefore take place under the activities of the Environmental Management Act (7 of 2007), which in addition to fauna and flora includes cultural heritage elements among those that defines an environment in holistic terms. The List of activities that may not be undertaken without Environmental Clearance Certificate: Environmental Management Act, 2007 (Govt Notice 29 of 2012), and the Environmental Impact Assessment Regulations: Environmental Management Act, 2007 (Govt Notice 30 of 2012) both apply to the management of impacts on heritage & archaeological sites and remains whether these are considered in detail by the environmental assessment or not. In its application, the National Heritage Act (Section 1 of 2004) defines heritage resources as those of geological and rare objects; paleontological; archaeological; ethnographic objects; historical objects/sites; maritime heritage; built monuments; mining sites as well as objects of scientific interests.

3. Approach to study

4.1 Terms of reference

The objectives of this heritage impact assessment were to identify and locate sensitive heritage resources within the boundary limit of EPL 7574 stretching linearly along the lower Orange River valley. Such potential resources are those that could negatively be affected by the exploration of Lithium mineral resources in the EPL through proposed exploration methods such as but not limited to sample drilling, stream sampling, and other non-invasive methodology such as geophysical survey.

Additionally, the assessment intended to establish the heritage significance of possible resources and assess their vulnerability, estimates the extent of the possible impacts; considers cumulative impacts, and propose practical management actions for the conservation of heritage resources *(if present)*. The impact assessment forms the basis of recommended management actions to avoid or reduce negative impacts and sets out associated long-term monitoring requirements.

The assessment is therefore required to satisfy the requirements of both regulations (the Environmental Management Act No. 7 of 2007 and its Regulations - Government Notice No. 30 of 2012 and those of the National Heritage Act No 27 of 2004). The activities to be carried out by the proponent during the course of the exploration and mining include, but might not be limited to drilling and stream sampling, such activities have a potentially high impact on archaeological resources *(if present)* thus these are the activities by which impact on heritage is measured against.

4.2 Methodology

This Heritage & Archaeological Impact Assessment followed desktop-based assessments complimented by field survey. These methodologies are standards for environmental and heritage assessments in Namibia, which are in line with international best practices. Desktop information were sought from secondary sources including heritage and culture archives. These were taken from existing heritage records comprising those from National Heritage Council, archaeological GIS spatial data and record that has been substantially exposed during the last decades, by a series of detailed archaeological assessments carried out during the mineral investigation and mining operations, and the development of infrastructure required by these operations. These sources were then complemented by ESM Heritage Consultants' site survey within EPL 7574 undertaken on the 12th and 13th of July 2023 in the selected focus areas, The study focused on three farms, namely farm Kambreek 104, Plaas 449, and Orange Fall 101.

Sensitivity and susceptibility rating scales, aimed at finding out the nature of vulnerability and sensitivity of heritage resources to be impacted by the exploration activities, were adopted as per assessment objectives. Their vulnerability to the disturbance in the course of exploration that includes drilling was evaluated according to parallel 0-5 scales, abridged in Table 1.

Table 1: Rating scales for the assessment of archaeological significance and vulnerability as developed by the Quaternary Research Services.

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

Concerning each specific source of impact risk to heritage resources, the assessment methodology estimated the extent of the impact, the magnitude of the impact, and the duration of these impacts. The scales of estimation are set out and explained in Table 2. The assessment methodology further estimated the potential reversibility of the identified impacts as reflected in Table 3.

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

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

4.3 Assumptions and limitations

This heritage impact assessment described here is a desktop study with a comprehensive field assessment undertaken. It is possible to predict the likely occurrence of further archaeological sites with some accuracy and to present a general statement of the local archaeological site distribution. However, since the previous surveys in the area relied on limited surface observations, it is necessary to caution the proponents that hidden, or buried archaeological remains might be exposed during the exploration of Lithium resources (see Management plan, especially Chance Finds Procedure (CFP). As indicated this study relied on non-intrusive surface observation, thus there is a possibility that certain archaeological finds might be buried beneath the surface, with a possibility of being unearthed during the mineral exploration phase.

Thus, as a precaution and best practice, we are recommending the proponent strictly follow the Chance Finds Procedure as the project progresses, should any archaeological objects be found during drilling and trenching. The Chance Finds Procedure is outlined in the National Heritage Council booklet and is included in the recommendation and Site Management Plan (SMP) section of this report. Failure to follow and implement such a procedure will result in appropriate action being taken against the proponent as per the 2004 Heritage Act.

4. Geological setting

EPL 7574 is located within the elevated mountains of lower orange valley that act as catchment area for the short ephemeral rivers that drains in the Orange River. Winter rainfall are very common in this area. The Nama-karoo Basin is characterized by flat lying plateau underpinned by Nama and Karoo sediments.

Locally especially as observed physically from ephemeral rivers, predominant rock type is igneous rock, due to weathering, there appear somewhat rugged, some have what appears like natural caves and shelters, though human intervention in creating the caves could not be precluded either. Further as indicated in Figure 2 and 4, the rock is dominated by pre-tectonic gneiss and Ortho-Amphibolite of Namaquan formation of unknown age.

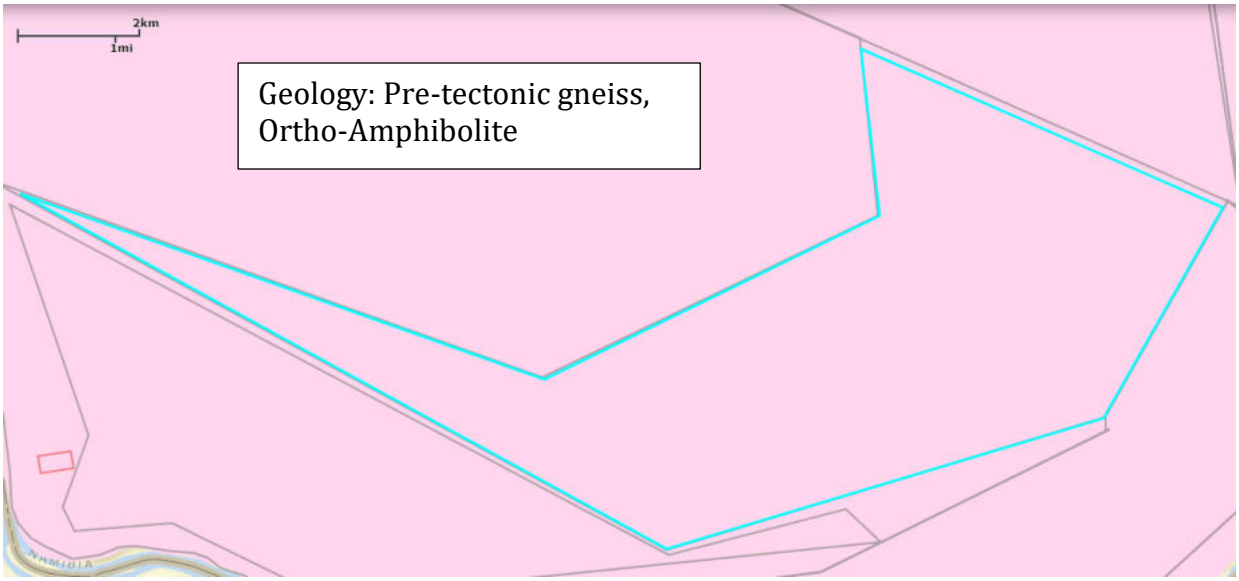


Figure 2: Geology of EPL 7574, indicating a uniform geological composition throughout the EPL and nearby areas (Source: Mining Cadastre 2023).

5. Contexts of heritage in //Karas region

//Karas Region is a highly significant archaeological landscape in Namibia whose resources represent irreplaceable evidence of global importance. Its archaeological record is reported to have evidence of human occupation dating to the Pleistocene and Holocene periods, roughly in the last 800 000 years to 2000 BP (Kinahan, 2012). Such evidence is reflected in materials records such as surface scatters of stone artifacts, rock shelters with evidence of occupation, including rock art, graves, and stone features such as hunting blinds and huts. Among the rock art finds in //Karas region is the well-established rock art in the Hun Mountains along the Nuob River near the town of Rosh-Pinah. The heritage site is popularly known as the Apollo 11 Cave. The engraving in the cave was discovered by archaeologist Wolfgang Erich Wendt in 1969 (Riaan *et al.* 2015). According to Riaan *et al.* (2015) Wendt was captivated by the successful 1969 NASA moon landing and subsequent fruitful return to Earth. He thus honored the American mission's name to the discovery of the rock engravings in Namibia, probably due to the similarity of the Arid, and seemingly barren Namibian landscape to that of the moon. The site hosts some of what Riaan *et al*. (2015) *refer* to as rare typologies of rock painting and the only examples of African figurative art securely dated to

the late Pleistocene Period, implying that it is the oldest rock art recorded thus far in Southern Africa. These incorporate seven figurative arts on stone plaques that were subsequently excavated from Apollo 11 cave in the //Karas region. Despite the removal of these engravings from the site. The significant heritage and archaeological context are still retained at the site.

Following the archaeological context of the //Kharas region, moreover, sites and monuments linked to European seafarers, colonial settlements, battlefield sites, and camps can be found near the coast and the interior of the region. About European exploration and colonial history, the Old wagon trails can be found near Aus in //Karas Region. Other heritage sites linked to colonial history are such as prisoner of war camps, First World War graves and some undocumented archaeological sites can be found near Aus. These sites demonstrate evidence of significant human exploration, contact, and links to global events. Furthermore, evidence of advancements as well as incredible adaptations to extreme aridity and environmental uncertainty of southern Namib and the coast can still be seen through some undocumented rock art in the region. These are attributed to the hunter-gatherers and nomadic pastoralists, and their interaction with early European trading missions (Kinahan 2012).

Moreover, According to Schmidt *et al.* (2017), a middle Stone Age site in southern Namibia identified in 1969 by Wendt through a test pit yielded important find of local and global importance in understanding the past.
This site was of late excavated again by a team of paleontologists from Cologne University in Germany and local archaeologists. The site yielded crucial data in understanding the evolution of modern human behavioral developments in Southern Africa. According to Schmidt *et al* (2017) materials that were uncovered during the excavation included animal bones and Ostrich eggshells. Important to this assessment is that Pockenbank Rockshelter is located about 80 km northwest from Apollo 11 heritage site (See Figure 3)

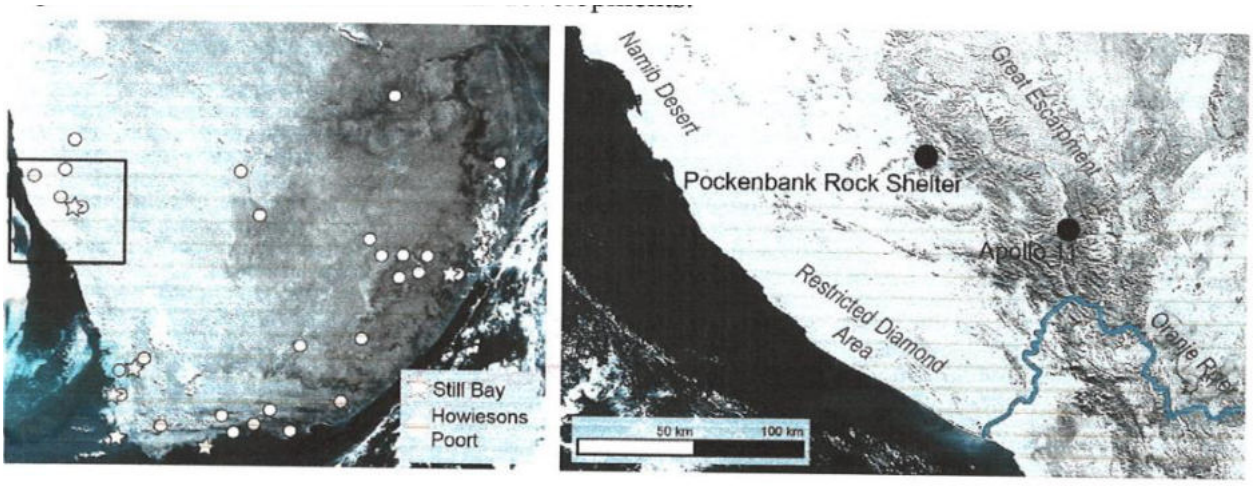


Figure 3. Left photograph-locality of Pockenbank about southern African archaeological sites. Right photograph Pockenbank rock shelter about Apollo 11 in!Kharas Region.

Another study was carried out in 2019 by Linnemann *et al.* (2019) in southern Namibia almost within the same precinct as the Pockenbank rock shelter, approximately 90 kilometers from the Aus settlement towards Roshpinah in Karas region.
The stratigraphy from the three sites was documented yielding fossils from different paleontological environments (see Figure 3 and Figure 4). The findings are critical in understanding the formations of different local paleontological environments as evidenced by the fossils uncovered. This could help to understand and link the Namibian fossils to those found elsewhere around the world. The period concerned by the study range from the Cryogenian period (770- 635 million years ago), the Ediacaran period (635-541 MA), and the Cambrian period about (541 MA).

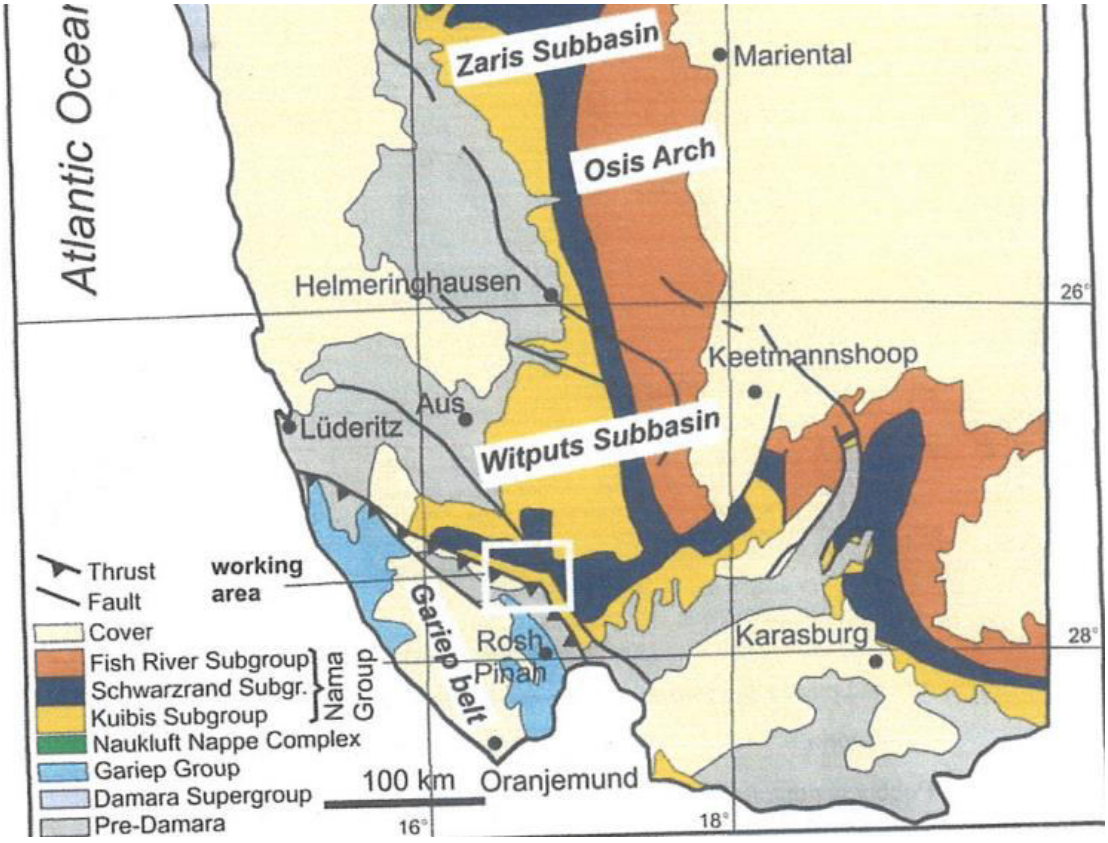


Figure 4 Paleontological Geologic composition of the //Karas Region.

6. Localized Archaeological context of the lower Orange River Valley

Kinahan's (2003) archaeological assessment of the lower Orange Valley focused on three key areas, mainly composed of rivers, draining towards the Orange River. His choice of research focus is attributed to the fact that; archaeological resources in arid southern Namibia are likely to be found in association with or within rivers for obvious access to water reasons, especially at the confluence of rivers. As such, two rivers were identified for a preliminary archaeological assessment in this research. The Mouth of the Boom River, and the Mouth of the Haib River. Results varied significantly. Historic and colonial sites and artifacts were concentrated along the Haib River. While the Boom River archaeological evidence mainly of the Pleistocene era and the last 2000

years was discovered in the form of traces of pastoralist encampment. Moreover, Orange River has been historically used extensively. Several crossing points (Figure 5) along the river have been identified. These were utilized as crossing points by the Afrikaner Trekkers from Cape Town as well as the Oorlam migrants from South Africa to Namibia. In a nutshell, such rivers and tributaries flowing into the lower Orange River Valley were used as points to penetrate the Namibian interior. Therefore, if anything historic heritage resources are to be found here, hence this heritage assessment is equally focused on accessible rivers than unreachable mountain tops.

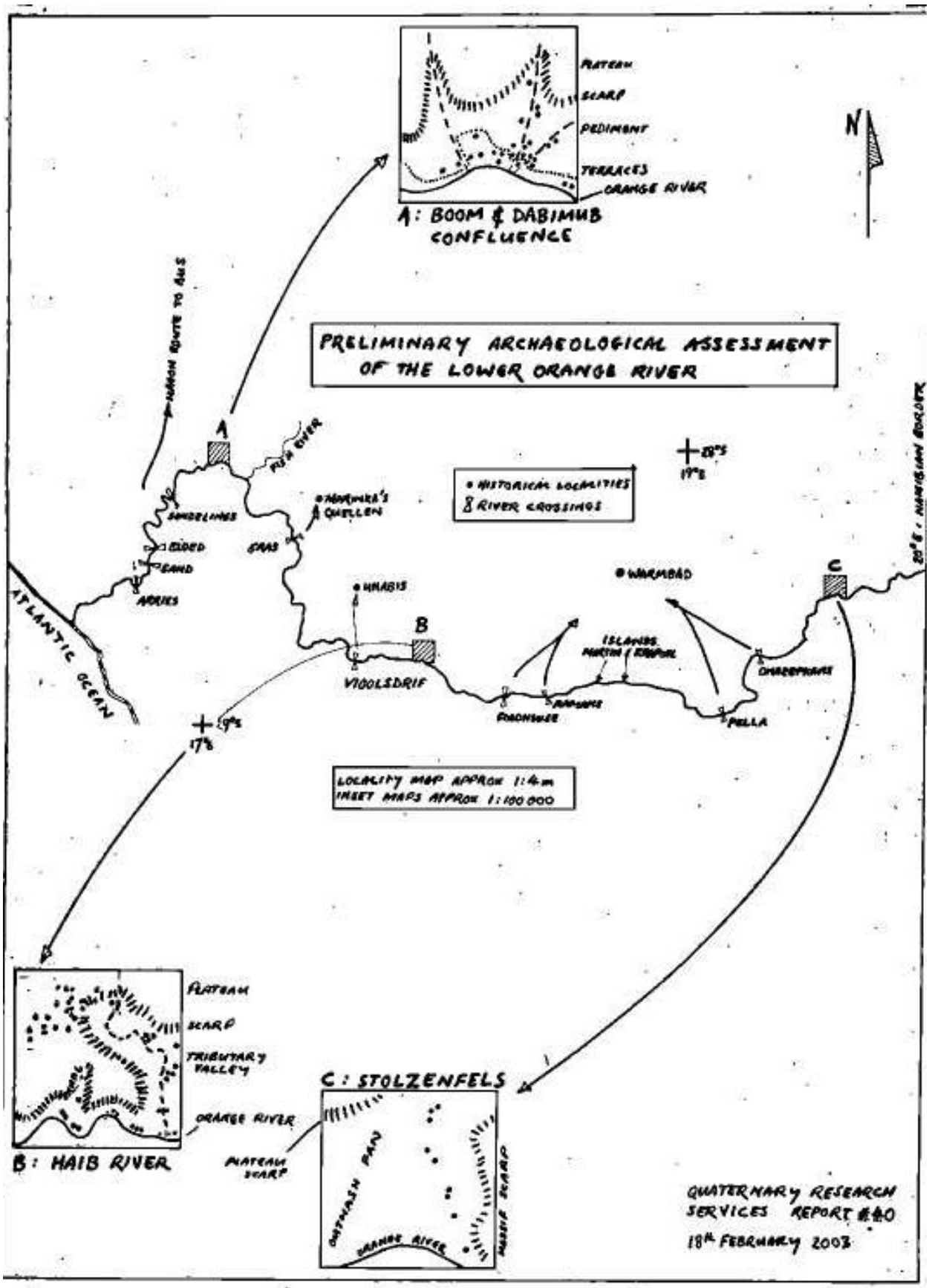


Figure 5. Map highlighting several historic crossing points on the Orange River. Source: Kinahan (2003).

Mr. Pete Morkel owns Kambreek Farm 104, portion of this farm covers part of EPL 7574. Mr. Morkel (Pers. comm 2023) asserts that several fine lithic stone tools were collected near the Orange River. Mr. Morkel (Pers. comm 2023) suspects that these could have been washed from upstream of the Orange River. These might have been utilized elsewhere upstream by hunter-gatherers or early pastoralist communities (Figure 6). According to Mr Morkel, these were nonetheless discovered further away from the area covered by EPL 7574.

Moreover, Mr Morkel (Pers. comm 2023) informed the author of suspected animal traps of ancient origin. Additionally, several rocks in circular formation were found in the past, these are presumed and suspected to be ancient graves within Pelgrimrust 100 Farm. Due to limited time, the author could not visit these graves, nonetheless, photographs were provided courtesy of Mr Morkel. The suspected ancient graves are close to Mr Morkel`s residence while animal traps are four kilometers southeast-east of the residence within farm Kambreek 104. These archaeological findings are technically located outside the boundary of EPL 7574. The findings give relevance to an educated submission that this area was inhabited by thriving communities of hunter-gathers and pastoralists in pre-colonial times. These nonetheless need more research to appreciate the context of their archaeological composition fully.

Figure 6.Top Left:Suspected Cage or animal Trap, Top Right: Suspected ancient graves. Bottom Left Mr Morkel showing the stone tools. Bottom Right: polished lithic stone tool artifacts collected near the Orange River by Mr. Morkel. (Source: Top right and left photographs courtesy Mr Morkel. Bottom right and left photographs by the author.)

7. Impact Assessment results

Site 1: Twelve Caves and rock shelters (Located outside the EPL, however, it is significant since it lies along the only access route to the EPL which is the river)
Description: On Kambreek Farm along the banks of an ephemeral river x discharging into the Orange River. On the Steep Rugged igneous rock hangs 12 caves most likely naturally occurring including one large rock shelter at the base (Figure 7).
Coordinates: 28°52’53’’S 19°03’38’’E
Vulnerability: Rate 5
Significance: Rate 3
SMP: No Sampling within 200 meter from the river rock shelter and caves.

Site 2. Five Natural Caves and Rock Shelters (Within EPL 7574, along the same river)
Description: Five caves and rock shelters are currently inhabited by animals such as Rock Daisies along a steep gradient rock formation. The formations are located at the confluence of three rivers (Figure 8).

Coordinate: 28°53'41.92"S 19° 2'53.57"E
Vulnerability: Rate 2
Significance: Rate 3
SMP: No Sampling 200 meters from the rock shelter and caves within EPL 7574.

Site 3. Hunting Blinds
Description: Suspected hunting blinds overlooking a plain to the north and south. They appear rugged with vertical-faced ridges extending linearly in the north-easterly and south-westerly directions (Figure 9).

Coordinate: 28°51’29’’S 19°09’20’’E
Vulnerability: Rate 3
Significance: Rate 4
SMP: No sampling within 200 meters from the hunting blind rock ridges.

Figure 7. Eleven Caves and one rock shelter along the river passing through EPL 7574.Left Photographs the cave and bottom photograph indicate some suspected lithic arteafacts.(Source:Author Photography.)

Figure 8. Steep rock gradient indicates five natural caves and shelters along the steep interlocking spur river banks.

Figure 9. Suspected Hunting Blinds within farm Orange Falls part of EPL 7574

The findings in this assessment are a testament to the limited contact these places have had with humanity throughout the Pleistocene age to the last 2000 years. However, suspected human habitation in the form of natural caves and lithic stone tools could offer a glimpse, if any, that there are sufficient evidence humans occupied the lower Orange Valley in the distance past. From an environmental perspective, the many rivers forming the catchment area of the lower Orange River Valley could have supported many hunter-gathers and pastoralist communities with sufficient water for their animals. Historically, it is possible that isolated remnants of Afrikaner and Oorlam populations migrating from the Cape could be found along the rivers which are the only access route to the Namibian interior north of the Orange River. However seasonal flooding and seasonal river flows might have ostensibly washed any such evidence. Seemingly on the route to farm Kambreek104 from the D206 gravel road to Warmbad can be sighted old abandoned buildings,

likely dating from the colonial era within farm Pelgrimrust 100, nonetheless, these lie 15 to 20 kilometers away from EPL 7574.
The Caves and shelters might have served as accommodation for pastoralists, hunter-gathers, and migrants from South Africa. It is assumed that the Oorlam population did not erect permanent structures in Namibia before the Warm Bad mission structure was established by the British missionaries.

Hunting blinds might have been used by the hunter-gathers to shield themselves from prey when embarking on elaborate hunting missions. As such these geologic features of the natural environment have a dual purpose as both natural and cultural sites.

In essence, the significance ratings for all the suspected heritage sites presented in this report consider the potential provenance such sites might have served for the precolonial and colonial communities in Southern Namibia. Thus, they are culturally and historically significant and ought to be protected and further research by scholars and heritage authorities is not only encouraged but necessary since little research has focused on southern Namibia, particularly the lower Orange River Valley, with the exception of few research and assessments conducted by Dr. John Kinahan.

8. Management recommendations

Specific Management recommendation

- 200-meter Radius buffer zone be observed around the coordinates of the potential heritage sites observed in this study.
- Access to the rivers is currently by foot due to uneven steep terrain along the rivers, thus if access roads for vehicles are constructed, potential heritage sites presented in the findings of this report such as the twelve caves and rock shelters that yielded some suspected lithic stone tools would need a 200-radius meter buffer zone to be observed, from localities, this implies no activities or construction of roads will be allowed within the radius.

General recommendation.

Chance Finds Procedure (CFP) Management Guidelines where necessary be utilized in the course of exploration.

These assessments were desktop-based, with no intrusive ground survey that relied heavily on observation. Therefore; significant subsurface heritage resources might be discovered in the course of exploration. Onsite personnel and contractors must be sensitized to recognize “chance finds heritage” in the course of their work. The procedure set out here covers the reporting and management of such findings. The CFP covers the actions to be taken from the discovery of a heritage site or object to its investigation and assessment by a trained archaeologist. The CFP is intended to ensure compliance with the relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): “A person who discovers any archaeological objects must as soon

as possible report the discovery to the council". The procedure of reporting set out below must be observed so that heritage materials are reported to the authorities.

A. Responsibilities:

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

B. Procedure:

Action by the person (operator) identifying archaeological or heritage material

- If operating machinery or equipment: **stop work**
- Identify the site with flag tape
- Determine GPS position if possible
    - Report findings to the foreman

C. Action by Foreman:

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

D. Action by Superintendent

- Visit the site and determine whether work can proceed without damage to findings;
- Determine and mark the exclusion boundary
- Site location and details to be added to the Archaeological Heritage database system

E. Action by Archaeologist

- Inspect site and confirm the addition to AH database system;
- Advise National Heritage Council and request a permit to remove findings;
- Recovery, packaging and labeling of findings for transfer to National Museum

F. In the event of discovering Human Remains

- Actions as above;
- Field inspection by archaeologist to confirm that remains are human;
- Advise and liaise with NHC Guidelines; and
- Recovery of remains and removal to National Museum or National Forensic Laboratory, or as directed.

9. Conclusion

In conclusion this field and desktop-based Heritage and Archaeological Assessment has located potential archaeological or heritage resources of regional significance within the precinct of EPL 7574 and site management plan have been proposed.

Three farms covered the extent of EPL 7574, these were all assessed with the exception of farm Plaas 449, this is due to the extremely unforgiving high and steep rugged mountains, rendering them virtually inaccessible. We thus recommend the issuance of Consent to the proponent with conditions that field findings and accompanying management recommendations are respected within the surveyed area or as the heritage council may consider as appropriate.

Dr.Eliot S Mowa, (Archaeologist)
Member: Association of Southern African Professional Archaeologists (ASAPA)

10. References

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13. Riaan F. Rifkin, Christopher S. Henshilwood and Magnus M. Haaland. Pleistocene Figurative art mobilier from Apollo 11 Cave, Karas region, Southern Namibia. *The South African Archaeological Bulletin* Vol. 70, No. 201 (JUNE 2015), pp. 113-123. South African Archaeological Society.

SPECIES	ENDEMISM	PROTECTED	IUCN1	IUCN2
Adenolobus garipensis (E.Mey.) Torre & Hillc.				
Aizoon asbestinum Schltr.				
Aizoon canariense L.				
Anacampseros baeseckei Dinter		Protected		
Anacampseros filamentosa (Haw.) Sims subsp. tomentosa (A.Berger) Gerbaulet	Near endemic	Protected		
Anticharis juncea L.Bolus				
Aptosimum eriocephalum E.Mey. ex Benth.				
Arctotis leiocarpa Harv.				
Aridaria noctiflora (L.) Schwantes subsp. straminea (Haw.) Gerbaulet		Protected		
Avonia albissima (Marloth) G.D.Rowley	Near endemic	Protected		
Avonia papyracea (E.Mey. ex Fenzl) G.D.Rowley subsp. papyracea				
Avonia quinaria (E.Mey. ex Fenzl) G.D.Rowley subsp. alstonii (Schönland) G.D.Rowley				Near threatened
Barleria lichtensteiniana Nees				
Boscia foetida Schinz subsp. foetida				
Carissa haematocarpa (Eckl.) A.DC.				
Cleome foliosa Hook.f. var. lutea (Sond.) Codd & Kers				
Commiphora gracilifrondosa Dinter ex J.J.A.van der Walt	Near endemic			Near threatened
Corbichonia rubriviolacea (Friedrich) C.Jeffrey				
Cucumis sagittatus Peyr.				
Dianthus namaensis Schinz var. dinteri (Schinz) S.S.Hooper				
Dicoma capensis Less.				
Didelta carnosa (L.f.) Aiton var. carnosa				
Dinteranthus puberulus N.E.Br.		Protected		
Doellia cafra (DC.) Anderb.				
Enneapogon desvauxii P.Beauv.				
Eragrostis brizantha Nees				

Equisetum ramosissimum Desf. subsp. ramosissimum				
Euphorbia phylloclada Boiss.				
Fimbristylis complanata (Retz.) Link				
Gaillonia crocyllis (Sond.) Thulin				
Galenia papulosa (Eckl. & Zeyh.) Sond.				
Gazania lichtensteinii Less.				
Helichrysum fleckii S.Moore				
Heliotropium ovalifolium Forssk.				
Hermannia bicolor Engl. & Dinter				
Hermannia leucantha Schltdl.				
Hermannia minutiflora Engl.	Near endemic			
Hermbstaedtia glauca (J.C.Wendl.) Rchb. ex Steud.				
Hibiscus engleri K.Schum.				
Hypertelis salsoloides (Burch.) Adamson var. salsoloides				
Indigastrum argyraeum (Eckl. & Zeyh.) Schrire				
Indigastrum argyroides (E.Mey.) Schrire				
Indigofera pungens E.Mey.				
Jamesbrittenia ramosissima (Hiern) Hilliard				
Kedrostis capensis (Sond.) A.Meeuse				
Lapidaria margaretae (Schwantes) Dinter & Schwantes		Protected	Near threatened	Near threatened
Leobordea platycarpa (Viv.) B.-E. van Wyk & Boatwr. [2]				
Lessertia incana Schinz				
Limeum dinteri G.Schellenb.				
Lithops dinteri Schwantes subsp. multipunctata (de Boer) D.T.Cole	Endemic	Protected	Endangered	Endangered
Lotononis platycarpa (Viv.) Pic.Serm.				
Lotononis rabenaviana Dinter & Harms				
Melolobium adenodes Eckl. & Zeyh.				
Microcharis disjuncta (J.B.Gillett) Schrire var. disjuncta				
Monechma spartioides (T.Anderson) C.B.Clarke				

Monsonia parvifolia Schinz				
Montinia caryophyllacea Thunb.				
Nymania capensis (Thunb.) Lindb.				
Ornithoglossum dinteri K.Krause				
Oxalis beneprotecta Dinter ex R. Kunth				
Ozoroa dispar (C.Presl) R.Fern. & A.Fern.				
Petalidium setosum C.B.Clarke ex Schinz	Near endemic			
Phyllanthus pentandrus Schumach. & Thonn.				
Polygala leptophylla Burch. var. leptophylla				
Pteronia unguiculata S.Moore				
Rhus populifolia E.Mey. ex Sond.				
Ruschia spinosa (L.) Dehn		Protected		
Schwantesia ruedebuschii Dinter		Protected		
Senecio flavus (Decne.) Sch.Bip.				
Sericocoma pungens Fenzl				
Sesamum capense Burm.f.				
Stipagrostis hochstetteriana (Beck ex Hack.) De Winter var. secalina (Henrard) De Winter				
Stipagrostis uniplumis (Licht.) De Winter var. uniplumis				
Tetraena rigida (Schinz) Beier & Thulin				
Tetraena simplex (L.) Beier & Thulin				
Trianthema parvifolia E.Mey. ex Sond. var. parvifolia				
Tylecodon rubrovenosus (Dinter) Toelken				
Vahlia capensis (L.f.) Thunb. subsp. vulgaris Bridson var. vulgaris				
Wellstedia dinteri Pilg. subsp. dinteri				
Zaluzianskya benthamiana Walp.				

CURRICULUM VITAE

MONIQUE JARRETT

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QUALIFICATIONS:

University of Namibia: **2016 – 2020** Bachelor of Science (Honours) in Environmental Biology

PROFESSIONAL ASSOCIATIONS:

- Environmental Assessment Professionals Association of Namibia (EAPAN)

PROFILE:

As a holder of a BSc (Hons) in Environmental Biology from the University of Namibia, Monique is passionate about conservation, sustainability, climate change and environmental management by contributing to effective environmental management systems. She has acquired a variety of skills assisting with various ESIA, environmental monitoring and compliance projects as a junior environmental practitioner.

KEY AREAS OF EXPERTISE:

Environmental (and social) Impact Assessments (EIAs) (ESIAs)	-	Compiling EIA Reports and EMPs Public Participation & Stakeholder Management
Environmental Management	-	Environmental Management Systems (EMS), Tenement management, Environmental monitoring and compliance, and Public Participation & Stakeholder Engagement.

LANGUAGES:

	Read	Write	Speak
English	Excellent	Excellent	Excellent

SUMMARY OF EXPERIENCE AND CAPABILITY:

Since 2016 Monique has been working in the environmental industry. Monique has written a variety of articles on environmental and sustainability topics analysing current international and national environmental matters. Monique started gaining experience in compliance monitoring while working on the support to Community Based Natural Resource Management (CBNRM) project with GIZ. Monique gained extensive experience in environmental awareness as a climate change ambassador for Gobabeb in 2021. Monique joined the ECC team in 2021 where she has been actively involved in the ESIA process and monitoring/EMP compliance for clients.

PROJECT EXPERIENCE

PROJECT	DATE	ROLE
GIZ - Support to CBNRM Compliance monitoring	2018	Intern
UNDP/Gobabeb - Climate Action for Millennials Programme	2021	Climate Ambassador
Elevate Uranium Tenement management	Present	Junior environmental practitioner
Headspring Environmental Compliance and Monitoring	2022	Junior environmental practitioner
Craton Environmental Compliance and Monitoring	2022	Junior environmental practitioner
B2Gold Environmental Compliance and Monitoring	2022	Junior environmental practitioner
Votorantim Environmental Compliance and Monitoring	2022	Junior environmental practitioner
Namibian Marine Phosphate – Sandpiper Marine Phosphate Project ESIA	2022	Junior environmental practitioner
Votorantim Metals Namibia EPL 8403 ESIA	2022	Junior environmental practitioner
B2Gold Namibia Minerals EPL 8404 ESIA	2022	Junior environmental practitioner
Skorpion Mining Company EPL 8570 ESIA	2022	Junior environmental practitioner
Skorpion Mining Company EPLs 8571, 8572 & 8573	2022	Junior environmental practitioner
Votorantim Metals Namibia EPLs 7963, 7973, 8050, 8051	2023	Environmental practitioner

CERTIFICATION:

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

DATE: 21/04/2023

Monique Jarrett

CURRICULUM VITAE

LESTER HARKER

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Contact:	+264 81 602 2082

TERTIARY EDUCATION:

University of Stellenbosch:	**2006 – 2010** - attended)	Bachelor of Arts (Environment and Development

PROFILE:

Lester works as an Environmental Assessment Practitioner with a diverse environmental consulting background. Mr. Harker has leading practice experience in the fields of construction, exploration, mining, environmental monitoring and audit compliance, and general consultancy obtained from leading industry professionals.

KEY AREAS OF EXPERTISE:

Environmental Management	-	Project Management
Environmental (and social) Impact Assessments (EIAs)	-	Conducting and managing various small to large scale EIAs Compiling EIA Reports and EMPs Coordinate and review specialist studies
Environmental & Social Compliance reporting	-	Environmental and Social compliance audits in the construction industry

LANGUAGES:

	Read	Write	Speak
English	Excellent	Excellent	Excellent
Afrikaans	Excellent	Excellent	Excellent

SUMMARY OF EXPERIENCE AND CAPABILITY:

Has 10 years of industry work experience. His first three years were as a junior environmental assessment practitioner but already became involved with the holistic management of EIA projects. For the following 5 years, he worked in the environmental management field with experience in

Environmental Impact Assessments (EIAs), compliance monitoring, and auditing in Namibia, the DRC, and Equatorial Guinea. Has above-average experience in successful client relations.

PROJECT EXPERIENCE

PROJECT	DATE	ROLE
Collaborated with the British CRIDF donor organisation to conduct a high-level environmental investigation to determine the feasibility of treating and reusing the Rehoboth Wastewater collection and treatment facility for agricultural purposes	2015	Environmental Assessment Practitioner
Environmental scoping and impact assessment for exploration activities for Westrine Mining & Exploration Company (Pty) Ltd	2016	Environmental Assessment Practitioner.
Conducted an Environmental Scoping and Impact Assessment for the construction of a cement mining and processing facility in Equatorial Guinea, North Africa, for N.B.L.E Sa.	2016	Environmental Assessment Practitioner.
Conducted an environmental impact assessment for the Dauremas Mineral Development Company for exploration and proposed mining activities, Kunene Region.	2015-2017	Environmental Assessment Practitioner.
Conducted an Environmental Impact Assessment for a terrestrial diamond exploration project south of Aus, Karas Region for Hallie Investment Number 14.	2017	Environmental Assessment Practitioner.
Conducted an environmental performance audit in collaboration with a British firm for a copper and cobalt processing facility for the Somika Sarl Group of Companies operating in the DRC to fund the expansion of their processing facility.	2018	Environmental Assessment Practitioner
Projects Completed while at ECC		
Environmental impact assessment for a pilot sustainable water supply project by means of desalination, powered by solar to supplement water supply for Walvis Bay Erongo Region, Namibia	2020	Environmental Assessment Practitioner
Amendment application for the Palmwag Lodge, Gondwana Namibia.	2020	Environmental Assessment Practitioner
Environmental Assessment for the proposed development of residential, retail including tourism activities on Erf 4747, Swakopmund Namibia.	2020	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP.
Environmental scoping and impact assessment for the proposed exploration activities on 19 EPLs in the Omaheke and Khomas regions for Kuiseb Copper Company (Pty)Ld	2020	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP.
Environmental assessment for proposed	2020	Lead Environmental Assessment

exploration activities on EPL 7769 for Jin Peng Investments (Pty) Ltd		Practitioner managing the EIA process (including stakeholder engagement and PPP.
Environmental assessment for the proposed exploration activities on EPL 7688	2020	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP.
Environmental and social compliance audit for 21 sites across Namibia under the Education, Training and Quality Improvement Project funded by the African Development Bank	2020	Site audits and development of an audit report and corrective action plan
Environmental Management Plant for an existing charcoal production and storage plant in Outjo, Namibia	2020	Environmental Assessment Practitioner
Environmental and social impact assessment for the proposed biomass processing (Retort System), storage and packaging plant on farm Gai//Khaisa no. 159, Otjozondjupa Region, Namibia.	2020	Environmental Assessment Practitioner
Environmental Management Plan for the proposed mechanised bush thinning operations on farm Gai//Khaisa no. 159, Otjozondjupa Region, Namibia	2020	Environmental Assessment Practitioner
Environmental and social impact assessment for the proposed quarrying activities for dimension stones on mining claims 72236, 72237, 72238, 72239 and 72240, Hardap Region, Namibia	2021	Environmental Assessment Practitioner
Environmental and social impact assessment for the proposed exploration activities on EPLs 7212, 7789, 7964, 7970, 7971, 7972 and 7994 in the Kunene, Otjozondjupa and Khomas regions	2021	Environmental Assessment Practitioner
Environmental and social impact assessment for the airborne electromagnetic surveys across portions within several EPLs in the Omaheke and Khomas regions for Kuiseb Copper Company (Pty) Ltd	2021	Environmental Assessment Practitioner
Environmental and social impact assessment for the proposed Osino Twin Hills Gold Mining Project, ML 238, Erongo Region, Namibia	2022	Environmental Assessment Practitioner
Environmental and Social impact assessment for the proposed expansion and of the Tin processing plant (ML 134), Uis, Erongo Region, Namibia	2021-2022	Lead Environmental Assessment Practitioner
Environmental and social impact assessment for the proposed construction and operation of tailings storge facility three (3) on the Navachab Copper Mine, Karibib, Erongo Region, Namibia	2022	Lead Environmental Assessment Practitioner

Environmental and social impact assessment for the proposed Craton Omitiomire Copper Mining Project on ML 197, Otjozondjupa Region, Namibia	2022	Lead Environmental Assessment Practitioner

CERTIFICATION:

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

DATE: 07/11/2022

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Lester Harker

CURRICULUM VITAE

JESSICA BEZUIDENHOUT

Name of Consultant:	Jessica Bezuidenhout
Position / Profession:	Environmental Specialist
Date of Birth:	24 October 1984
Nationality:	Australian – Namibian Domicile, mother of a Namibian child.
Email:	jessica@eccenvironmental.com
Website:	www.eccenvironmental.com
Contact:	+264 81 653 1214

TERTIARY EDUCATION:

Federation University Australia: **2003 – 2006** Bachelor of Applied Science – Environmental Management

OTHER TRAINING:

- Management Systems Leadership
- ICAM – Incident Causes Analysis Method
- Certificate II in Metalliferous Mining Core Safety and Risk Management
- Certificate III in Mine Emergency Response & Rescue
- Level 3 – HLTFA402B Apply Advance First Aid Emergency Rope Rescue
- Level 2 – 21593VIC First Aid Level 2 Bonded Asbestos Removal > 10m^2
- Leading and Managing People – Brisbane North Institute of TAFE

Professional Associations:

- Chamber of Mines Namibia
- Women on Boards
- The Chamber of Minerals and Energy of Western Australia Industry Member – Mining, Minerals and Resources
- Environmental Assessment Professional Association of Namibia (EAPAN)

PROFILE:

Jessica works as a Lead Environmental Practitioner with a diverse environmental background. Mrs Bezuidenhout has leading practical experience in fields of construction, exploration, monitoring and audit compliance, consultancy, operations, water treatment and wastewater treatment plants, environmental approvals, legal, minimising operational impacts, community liaison, including indigenous relationship management, mine closure and rehabilitation.

KEY AREAS OF EXPERTISE:

Environmental Management	-	Project Management
Environmental (and social) Impact Assessments (EIAs)	-	Conducting and managing various small to large scale EIAs Compiling EIA Reports and EMPs Coordinate and review specialist studies
Environmental & Social Compliance reporting	-	Environmental and Social compliance audits in the construction and mining industry

LANGUAGES:

	Read	Write	Speak
English	Excellent	Excellent	Excellent

SUMMARY OF EXPERIENCE AND CAPABILITY:

Jessica has 15 years of mining and construction experience in the SHEQ field, with 7 years of that being in Australia and 8 years in Namibia and Southern Africa. Her first three years were as an Environmental Systems Coordinator where she obtained regulatory approvals, oversaw operational budgets and bond management for mine closures, oversaw compliance and ensured environmental and social aspects of international management codes were adhered to. The following 3 years she worked in the environmental management field as a Site Environmental Manager managing various projects and brining sites into full compliance with environmental legislative frameworks, while also being responsible for the environment, sustainability, and social reporting portfolio. She then went on to work as an Environmental Consultant where she was responsible for mine closure and rehabilitation and sustainability reporting. Since 2016 Jessica has been a Managing Director of Environmental Compliance Consultancy (ECC) spearing heading many environmental impact assessments undertaken in Southern Africa, advising clients and has thus gained great practical experience and knowledge on local and international compliance and auditing standards such as IFC and the World Bank.

PROJECT EXPERIENCE

PROJECT	DATE	ROLE
Contracted services by The Australian Defence Force (ADF) for Environmental Management of Defence projects.	2006 – 2007	Environmental Project Manager
Site environmental officer and systems coordinator, Ballarat Goldfields.	2007 – 2010	Environmental Systems Coordinator
Managed the environmental and community aspects of three operations: Savannah Nickel Mine, Copernicus Nickel Mine (currently in care and maintenance) and the operations at Wyndham Port	2010-2013	Site Environmental Manager
A mine closure project taking an operating mine site into the rehabilitation and closure phase. This project involved the full development of a mine closure plan, facilitation of the government	2013-2014	Environmental Consultant

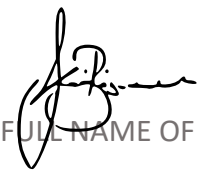
approvals, stakeholder engagement and technical environmental studies to inform the mine closure plan		
Full scale construction of new greenfield mine into an operational copper mine - Tschudi	2013-2016	HSE Manager
HSE management of operational underground mines, Otjihase and Matchless	2013-2016	HSE Manager
Director Environmental Compliance Consultancy	2016 – Current	Director and principle environmental practitioner
Projects completed while at ECC		
The Environmental Impact Assessment (EIA) for the proposed Walvis Bay Waterfront development	2018	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
Conduct the Namibian assessment on the laws and policies relating to six thematic areas based on a compendium of best practices for governments to best deal with the full range of issues related to mining.	2018	Lead Environmental Assessment Practitioner
ESIA amendment for B2Gold Namibia Mining Licence (ML 169) to developed underground mine working for the Otjikoto Gold Mine	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
Kunene Regional Counsel Sustainable water supply Pipeline and Ancillary works	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
ESIA application for B2Gold Namibia 10.8 megawatt PV solar upgrade to the B2Gold Power Plant	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
EIA application for sand removal on Farm Okakongo Nord No. 58	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
EIA application for Uris irrigation scheme	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
MAWF permit application for Water Abstraction and Discharge for Uris Irrigation scheme	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
EIA application for University of Namibia (UNAM) Katima Mulilo Campus Expansion	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
EIA application for B2Gold exploration activities EPL 6627 & EPL 6628	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and

		PPP and report review)
ESIA application for farm Tsumore 761 Unit B Irrigation Project	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
MAWF permit application for Water Abstraction and Discharge for Tsumore 761 Unit B Irrigation Project	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
ESIA application for Otjiwarongo Wastewater Treatment and Bulk Water Supply	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
ESIA for the Wastewater Treatment facilities for Gondwanan Collection	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
MAWF permit application for Water Abstraction and Discharge for Gondwanan Collection	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
Conduct an environmental assessment in order to complete an Environmental Impact Assessment and Environmental Management Plan (EMP) for Marenica Energy.	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
Appointed Environmental Practitioner for the B2Gold exploration activities on EPL 6949. Conduct an environmental assessment in order to complete an Environmental Impact Assessment and Environmental Management Plan (EMP)	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
Engaged by Marenica Energy to undertake an Environmental Impact Assessment (EIA) and an Environmental Management Plan (EMP) for EPL's 6663, 7435, 7436, 7278 & 7279 for Nuclear Fuel Minerals	2019	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
Engaged by Marenica Energy to undertake an Environmental Impact Assessment (EIA) and an Environmental Management Plan (EMP) on EPL's : 7703, 7340, 7303 & 7172 for Base and Rare Metals, Industrial Minerals, Precious Metals and Semi-Precious Stones.	2020	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
Engaged by Mertens Mining and Trading (Pty) Ltd, to undertake an Environmental Impact Assessment (EIA) and an Environmental Management Plan (EMP) to undertake bulk sampling, exploration activities and trial processing on EPL 7699.	2020	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
Engaged by Kuiseb Copper Company (Pty) (Ltd) to undertake an ESIA and an Environmental	2020	Lead Environmental Assessment Practitioner managing the EIA process

Management Plan (EMP) for EPLs: 7528, 7529, 7530, 7531, 7532, 7533, 7534, 7535, 7536, 7537, 7538, 7539, 7540, 7541, 7542, 7543, 7730, 7731, 7732,		(including stakeholder engagement and PPP and report review)
Exploration by Cheetah Minerals	2020	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
Engaged by Skorpion Zinc (Namzinc) (Pty) (Ltd) to undertake an ESIA and an Environmental Management Plan (EMP)	2021	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
Engaged by Afritin Mining Namibia (Pty) Ltd to undertake the ESIA and Environmental Management Plan (EMP)	2021	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
Project Wings - engaged by Headspring Investments (Pty) Ltd to undertake the Environmental, Social and Impact Assessment and Environmental Management Plan	2021	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
Application for an Environmental Clearance Certificate for Twin Hills Gold Project	2021	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
Engaged by Votorantim Metals Namibia (Pty) Ltd to undertake the ESIA and Environmental Management Plan (EMP) for exploration activities on EPL 8127	2021	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)
Engaged by to undertake an ESIA and an Environmental Management Plan (EMP) for the stage 2 expansion of the pilot tin processing plant on Mining Licence (ML) 134, held by Uis Tin Mining Company	2021	Lead Environmental Assessment Practitioner managing the EIA process (including stakeholder engagement and PPP and report review)

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

DATE: 10/ 11 / 20



FULL NAME OF CONSULTANT: JESSICA BEZUIDENHOUT