

UPDATED ENVIRONMENTAL MANAGEMENT PLAN (EMP):

THE PROPOSED MINERAL EXPLORATION ACTIVITIES FOR BASE & RARE METALS, INDUSTRIAL MINERALS AND PRECIOUS METALS ON EXCLUSIVE PROSPECTING LICENSE (EPL) No. 6408 LOCATED NORTH OF KARIBIB IN THE ERONGO REGION

ECC Renewal Application number: APP- 003562

Document Version: Updated EMP for ECC Renewal (2024)

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1 INTRODUCTION

1.1 Project Background

Valentina Haufiku (The Proponent) was granted the Exclusive Prospecting License (EPL) No. 6408 by the Ministry of Mines and Energy (MME). The EPL covers a surface area of 1764. 8239 ha and is located about 11.81 km North of Karibib, Erongo region (**Figure 1**). The EPL overlies Daheim No. 106, Spes Bona No. 105, Karibib No. 54 (**Figure 2**). The Proponent is interested in conducting prospecting and exploration activities for Base & Rare Metals, Industrial Minerals and Precious Metals.

The current ECC-001394 (Appendix A) for the project is valid between 07 June 2021 and 07 June 2024. However, to ensure that the prospecting and exploration activities on the EPL operate in a sustainable and in compliance with the environmental legislation, the Proponent contracted Excel Dynamic Solutions (Pty) Ltd (EDS) to apply for the ECC renewal on their behalf.

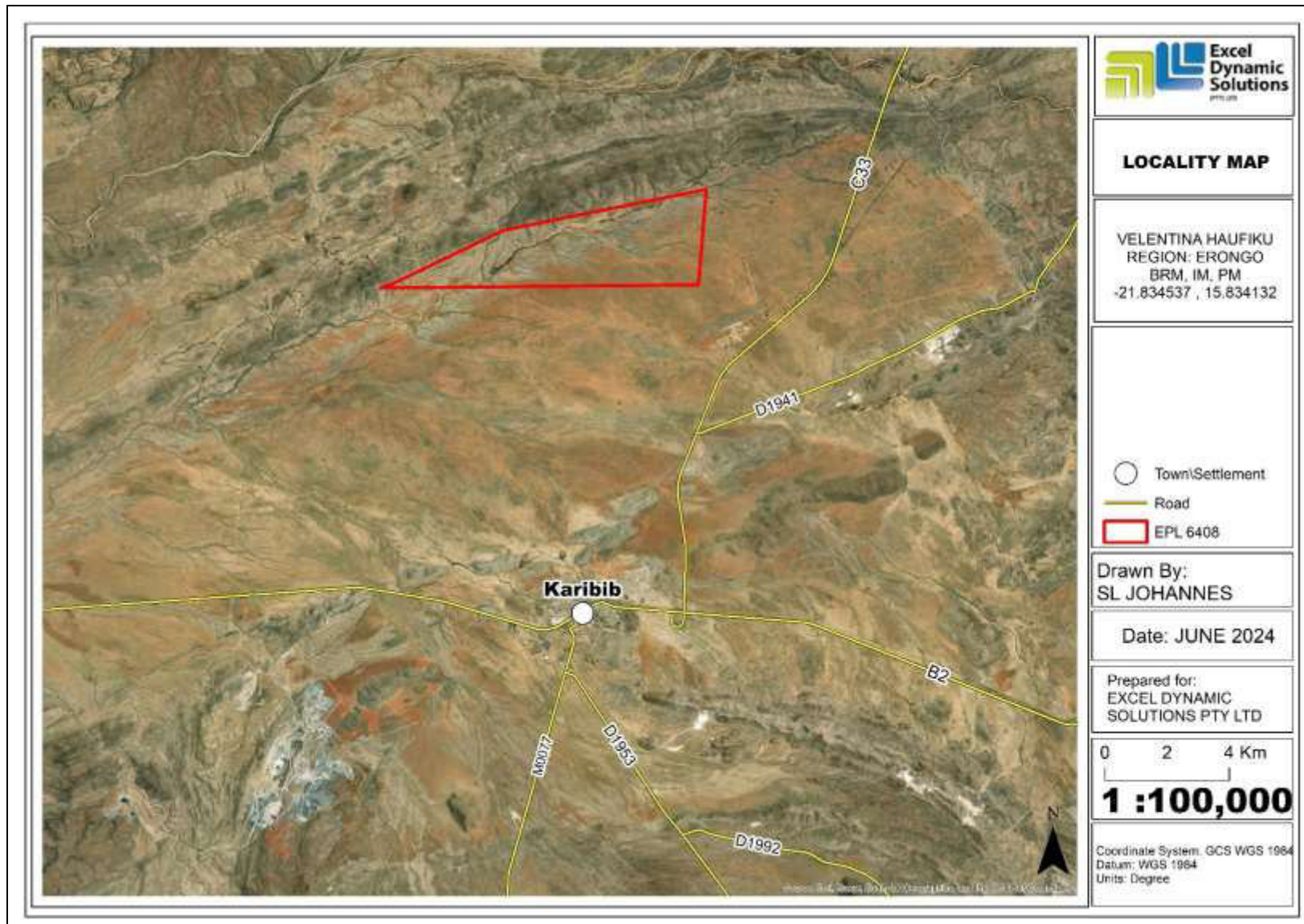


Figure 1: Location of EPL 6408

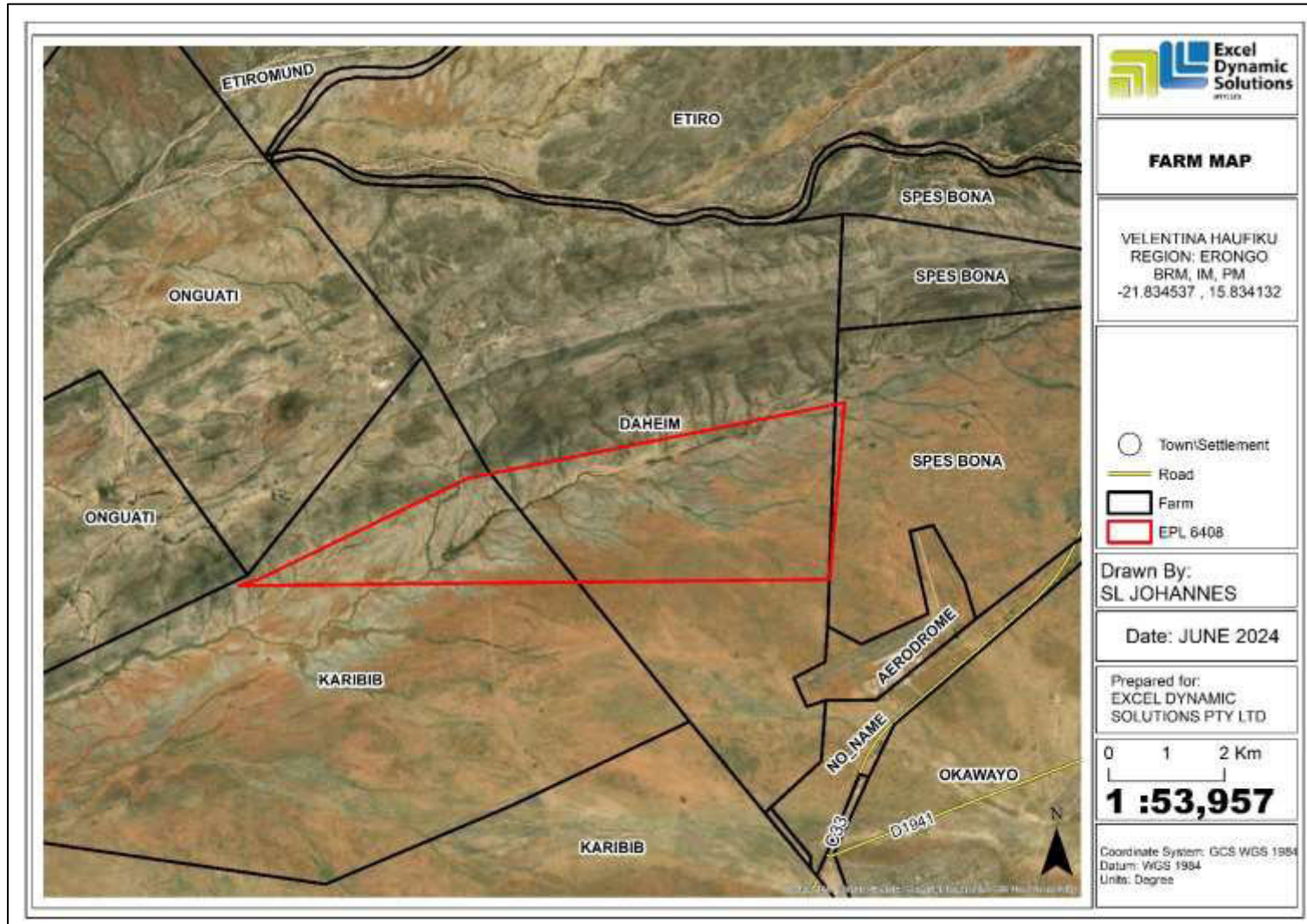


Figure 2: Land Use Map

In terms of Section 27 (1) of the Environmental Management Act (EMA) (Act No. 7 of 2007) and line with Sections 32-37 of the EMA, the proposed prospecting and exploration activities on EPL 6408 form part of the listed activities that may not be conducted without an EIA undertaken and an ECC granted. The relevant listed activities as per EIA regulations are:

- *3.1 The construction of facilities for any process or activities that requires a license, right or other forms of authorization, and the renewal of a license, right, or other form of authorization, in terms of the Minerals (Prospecting and Mining Act, 1992).*
- *3.2 other forms of mining or extraction of any natural resources whether regulated by law or not.*
- *3.3 Resource extraction, manipulation, conservation, and related activities.*

This document has been prepared as a legal requirement to enable the renewal of the current ECC which has expired in June 2024, to ensure that the project remain compliant to the environmental legislation, and to ensure sustainability prospecting and exploration practices on the EPL. The ECC should be valid and timely renewed every 3 years it is about to expire. EDS has lodged and submitted the ECC renewal application, and subsequently, the updated EMP for the ECC renewal will be submitted to the Directorate of Environmental Affairs and Forestry (DEFT), MEFT for the evaluation and consideration of the ECC renewal.

1.2 Aim of the Draft Environmental Management (EMP)

Regulation 8(j) of the EIA Regulations (2012) requires that a draft Environmental Management Plan (EMP) shall be included as part of the Environmental Assessment (EA). A '**Management Plan**' is defined as:

"...a plan that describes how activities that may have significant environmental effects on the environment are to be mitigated, controlled and monitored."

An EMP is one of the most important outputs of the EA process. It synthesizes all the proposed management & mitigation and monitoring actions, set to a timeline and with specific assigned responsibilities. Additionally, it provides a link between the impacts identified in the EA process and the required mitigation measures. It is important to note that an EMP is a statutory document and a person who contravenes the provisions of this EMP may face imprisonment and/or a fine.

This EMP is a living document and can be amended to adapt to addressing project changes and/or environmental conditions and feedback from compliance monitoring.

The purpose of this document is, therefore, to guide environmental management throughout the different phases of the proposed prospecting and exploration activities:

- **Phase 1- Mapping, Geophysical Surveys and Soil Sampling:** This phase includes review of geological maps, and studies of previous geological and mineral exploration works in the area. The geophysical surveys entail data collection of the substrate by air or ground, through sensors such as radar, magnetic and/or electromagnetic sensors, to detect and ascertain any mineralization in the area. Rock and soil samples shall also be collected and taken for trace element analysis to be conducted by analytical chemistry laboratories, to determine if target commodities are present in economically feasible amounts.
- **Phase 2- Drilling Site Establishment:** The selection of the potential mineralization model and exploration targets will be based on the local geology, trenching, drilling, and assay results of the samples collected.
- **Phase 3- Detailed Exploration Activities (drilling):** Should analyses by an analytical laboratory yield positive results, drilling commences, and drill samples are collected for further analysis to determine the depth of the potential mineralization.
- **Phase 4- Closure and Rehabilitation:** This is the phase during which exploration activities cease. Closure or decommissioning of exploration operations may occur once exploration activities are completed, or may be considered due to unfavourable exploration results or a decline in the target commodity's market price.

Environmental Monitoring Requirements: To support and ensure that the proposed mitigation measures are achieving the desired results, a monitoring plan must be implemented alongside the mitigation plan.

This updated draft EMP is for use by the Proponent, employees, and/or contractors, to provide management measures to be undertaken during exploration, to address the environmental impacts identified in the scoping report, and ensure that the impacts on the environment are avoided, or limited if they cannot be avoided completely.

2 LEGAL OBLIGATIONS GOVERNING THE PROPOSED ACTIVITIES

Upon issuance of the renewed ECC and obtaining other valid and necessary required documentations, the Proponent will commence with the administrative and technical aspects needed for the prospecting and exploration activities on the EPL. The exploration and its associated activities are ought to adhere to certain local, regional, national as well as international legal framework. The legal requirements provided herein are those regarding permits or licensing required of the Proponent and/or renewal of permits throughout the exploration phase. These legal requirements are provided under **Table 1**.

Table 1: Applicable legal requirements and permits to the activities of the EPL

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Environmental Management Act EMA (No 7 of 2007)	Requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27). Details principles which are to guide all EIAs.	An ECC must be renewed every 3 years before its expiry date.
Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 4878)	Details requirements for public consultation within a given environmental assessment process (GN 30 S21). Details the requirements for what should be included in a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15).	
Minerals (Prospecting and Mining) Act (No. 33 of 1992)	Section 48 (3): To enable the Minister to consider any application referred to in section 47 the Minister may (b) require the person concerned by notice in writing to (i) carry out or cause to be carried out such environmental impact studies as may be specified in the notice.	The Proponent should ensure that all necessary permits/authorization for the EPL are obtained from the Ministry of Mines and Energy (MME), and the Proponent must ensure that the renewed ECC is submitted to MME for record keeping.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
	Section 54(2): details provisions pertaining to the decommissioning or abandonment of a mine.	
Water Act 54 of 1956: Ministry of Agriculture, Water and Land Reform (MAWLR)	<p>Prohibits the pollution of water and implements the principle that a person disposing of effluent or waste has a duty of care to prevent pollution (S3 (k)).</p> <p>Provides for control and protection of groundwater (S66 (1), (d (ii)).</p> <p>Liability of clean-up costs after closure/abandonment of an activity (S3 (l)). (l)).</p>	The Proponent must ensure that the mitigation measures outlined in the operational management plans are adhered to prevent water pollution on site.
Water Resources Management Act (No 11 of 2013): Ministry of Agriculture, Water and Land Reform (MAWLR)	Ensure that the water resources of Namibia are managed, developed, used, conserved, and protected in a manner consistent with, or conducive to, the fundamental principles set out in Section 66 - protection of aquifers, Subsection 1 (d) (iii) provide for preventing the contamination of the aquifer and water pollution control (S68).	These permits include Borehole Drilling Permits, Groundwater Abstraction & Use Permits, and when required, Wastewater / Effluent Discharge Permits).
Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001)	Regulation 3(2)(b) states that “No person shall possess or store any fuel except under the authority of a license or a certificate, excluding a person who possesses or stores such fuel in a quantity of 600 liters or less in any container kept at a place outside a local authority area”	The Proponent should obtain the necessary authorization from the MME for the storage of fuel on-site.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Forestry Act 12 of 2001, Amended Act 13 of 2005	Prohibits the removal of any vegetation within 100 m from a watercourse (Forestry Act S22 (1)). The Act prohibits the removal of and transport of various protected plant species.	Should there be protected plant species, that are known to occur within the project site, and require removal for exploration operations to occur, a permit should be obtained from the nearest Forestry Office (MEFT) prior to removal.
Labour Act 11 of 2007 Health and Safety Regulations (HSR) GN 156/1997 (GG 1617).	Adhere to all applicable provisions of the Labour Act and the Health and Safety regulations.	The protection of employees and contractors' labour rights and occupational health safety.
National Heritage Act No. 76 of 1969	Calls for the protection and conservation of heritage resources and artifacts.	If archaeology or heritage significant are discovered on the EPL, such must be reported to the National Heritage Council of Namibia for the management of such discovery.

3 APPLICABLE INTERNATIONAL STANDARDS, TREATIES, CONVECTIONS AND POLICIES

The applicable international standards, treaties, convections and policies for the project are listed in **Table 2** below.

Table 2: International Policies, Principles, Standards, Treaties and Convention applicable to the project

Statute	Provisions	Project Implications
Equator Principles	A financial industry benchmark for determining, assessing, and managing environmental and social risk in projects (August 2013). The Equator Principles have been developed in conjunction with the International Finance Corporation (IFC), to	These principles are an attempt to: ...encourage the development of socially responsible projects, which subscribe to appropriately

Statute	Provisions	Project Implications
	<p>establish an International Standard with which companies must comply to apply for approved funding by Equator Principles Financial Institutions (EPFIs). The principles apply to all new project financings globally across all sectors.</p> <p>Principle 1: Review and Categorization</p> <p>Principle 2: Environmental and Social Assessment</p> <p>Principle 3: Applicable Environmental and Social Standards</p> <p>Principle 4: Environmental and Social Management System and Equator Principles Action Plan</p> <p>Principle 5: Stakeholder Engagement</p> <p>Principle 6: Grievance Mechanism</p> <p>Principle 7: Independent Review</p> <p>Principle 8: Covenants</p> <p>Principle 9: Independent Monitoring and Reporting</p> <p>Principle 10: Reporting and Transparency</p>	<p>responsible environmental management practices with a minimum negative impact on project-affected ecosystems and community-based upliftment and empowering interactions.'</p>
<p>The International Finance Corporation (IFC) Performance Standards</p>	<p>The International Finance Corporation's (IFC) Sustainability Framework articulates the Corporation's strategic commitment to sustainable development and is an integral part of the IFC's approach to risk management. The Sustainability Framework comprises IFC's Policy and Performance Standards on Environmental and Social Sustainability, and IFC's Access to Information Policy. The Policy on Environmental and Social Sustainability describes IFC's commitments, roles, and responsibilities related to environmental and social sustainability.</p> <p>As of 28 October 2018, there are ten (10) Performance Standards (Performance Standards on Environmental and Social Sustainability) that</p>	<p>The Performance Standards are directed toward clients, guiding how to identify risks and impacts, and are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business sustainably, including stakeholder engagement and disclosure obligations of the Client (Borrower) concerning project-level activities. In the case of its direct investments (including project and corporate finance provided through financial intermediaries), IFC</p>

Statute	Provisions	Project Implications
	<p>the IFC requires project Proponents to meet throughout the life of an investment. These standard requirements are briefly described below.</p> <p>Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts</p> <p>Performance Standard 2: Labour and Working Conditions</p> <p>Performance Standard 3: Resource Efficient and Pollution Prevention and Management</p> <p>Performance Standard 4: Community Health and Safety</p> <p>Performance Standard 5: Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement</p> <p>Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources</p> <p>Performance Standard 7: Indigenous Peoples/Sub-Saharan African Historically Undeserved Traditional Local Communities</p> <p>Performance Standard 8: Cultural Heritage</p> <p>Performance Standard 9: Financial Intermediaries (FIs)</p> <p>Performance Standard 10: Stakeholder Engagement and Information</p> <p>A full description of the IFC Standards can be obtained from</p> <p>http://www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-standards?cq_ck=1522164538151#ess1</p>	<p>requires its clients to apply the Performance Standards to manage environmental and social risks and impacts so that development opportunities are enhanced. IFC uses the Sustainability Framework along with other strategies, policies, and initiatives to direct the business activities of the Corporation to achieve its overall development objectives.</p>

Statute	Provisions	Project Implications
<p>The United Nations Convention to Combat Desertification (UNCCD) 1992</p>	<p>Addresses land degradation in arid regions with the purpose to contribute to the conservation and sustainable use of biodiversity and the mitigation of climate change.</p> <p>The convention's objective is to forge a global partnership to reverse and prevent desertification/land degradation and to mitigate the effects of drought in affected areas to support poverty reduction and environmental sustainability United Nations Convention.</p>	<p>The project activities should not be such that they contribute to desertification.</p>
<p>Convention on Biological Diversity 1992</p>	<p>Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, to ensure their conservation and sustainable use.</p> <p>Promote the protection of ecosystems, and natural habitats, and the maintenance of viable populations of species in natural surroundings.</p>	<p>Removal of vegetation cover and destruction of natural habitats should be avoided and where not possible minimized.</p>
<p>Stockholm Declaration on the Human Environment, Stockholm (1972)</p>	<p>It recognizes the need for: "a common outlook and common principles to inspire and guide the people of the world in the preservation and enhancement of the human environment.</p>	<p>Protection of natural resources and prevention of any form of pollution.</p>

4 EMP IMPLEMENTATION, ROLES AND RESPONSIBILITIES

The Proponent is ultimately responsible for the implementation of the EMP. However, the Proponent may delegate this responsibility at any time, as they deem necessary during the project phases. The roles and responsibilities of all delegates/parties involved in the effective implementation of this EMP are set out in Table 3 below:

Table 3: The persons and institutions responsible for the Implementation of the Draft EMP

Role (Person and or Institution)	Responsibilities
Valentina Haufiku (The Proponent)	<ul style="list-style-type: none"> -Managing the implementation of this EMP and updating and maintaining it when necessary. -Management and monitoring of individuals and/ or equipment on-site in terms of compliance with this EMP and issuing fines for contravening EMP provisions.
Exploration Manager	<p>This individual will be responsible for ensuring that the exploration activities of the project are completed on time. The Manager's duties and responsibilities will include:</p> <ul style="list-style-type: none"> -Ensure that relevant commitments contained in the EMP Action Plans are adhered to. -Ensure relevant staff is trained in procedures entailed in their duties. -Maintain records of all relevant environmental documentation for the project. -Reviewing the EMP annually and amending the document when necessary. -Issuing fines to individuals who may be in breach of the EMP provision and if necessary, removing such individuals from the site. -Cooperate with all relevant interested and affected parties/stakeholders. -Development and management of schedules for daily activities
Environmental Control Officer (ECO) or Safety, Health & Environmental (SHE) Officer	<p>The Proponent may assign the responsibility of ensuring EMP compliance throughout the project life cycle to a designated member of staff or externally qualified and experienced person, referred to in this EMP as the Environmental Control Officer (ECO). The ECO will have the following responsibilities:</p> <ul style="list-style-type: none"> -Management and facilitation of communication between the Proponent, PR, and Interested and Affected Parties (I&APs) regarding this EMP. -Conducting site inspections of all areas with respect to the implementation of this EMP (monitor and audit the implementation of the EMP). -Advising the Proponent or Exploration/Site Manager on the removal of person(s) and/or equipment not complying with the provisions of this EMP. -Making recommendations to the PR with respect to the issuing of fines for contraventions of the EMP. -Undertaking an annual review of the EMP and recommending additions and/or changes to this document.
Public Relations Officer (PRO)	<p>The PRO will be responsible for the following tasks:</p> <ul style="list-style-type: none"> -Liaising between the affected landowners, communities, and the Proponent.

Role (Person and or Institution)	Responsibilities
	<ul style="list-style-type: none"> -Ensure effective communication with stakeholders, local communities, farmers, media (if necessary) and the public. -Organising and overseeing public relations activities and managing public relations issues. -Preparing and submitting public relations reports, if required. -Collaborating with personnel and maintaining project-related open communication among personnel.
<p>Other responsibilities include Archaeology: Chance Finds Procedure (CFP) Implementation Roles</p>	<ul style="list-style-type: none"> A. Operator: exercise due caution if archaeological remains are found B. Site Manager and ECO: secure site and advise management timeously C. Archaeologist: inspect, identify, advise management, and recover remains.

5 ENVIRONMENTAL MANAGEMENT & MITIGATION MEASURES

The EMP includes environmental management action plan and a monitoring plan. The management action plan outlines the mitigation measures provided to the potential negative impacts associated with the proposed project. The aim of this action plan is to avoid the identified potential impacts where possible, and where avoidance is impossible, measures are provided to reduce impact significance.

5.1 Key Potential negative impacts

- Potential disturbance of grazing land areas,
- Physical land/soil disturbance
- Impact on local biodiversity (fauna and flora) and habitat disturbance and potential illegal wildlife hunting (poaching) in the area.
- Potential impact on water resources and soils particularly due to pollution,
- Air quality issue: potential dust generated from the project.
- Potential occupational health and safety risks
- Vehicular traffic safety and impact on services infrastructure such as local roads
- Vibrations and noise associated with drilling activities may be a nuisance to locals
- Environmental pollution (solid waste and wastewater)
- Archaeological and heritage resources impact
- Potential social nuisance and conflicts.

The features and aspects of these impacts and mitigation measures as identified in the initial EMP have been updated in this version. No further potential impacts were identified in this updated EMP.

5.2 The Management and Mitigation of Potential Key Negative Impacts

The management and mitigation measures for the potential adverse impacts are presented in **Table 4** for the planning, operational and maintenance phases. The required management and mitigation plan action are presented in the table as: (a) Environmental aspect and issues for which management actions are required, (b) proposed impact mitigation measures, (c) responsible person(s) for implementing the proposed management actions, (d) monitoring frequency for management actions and for implementation timeframes for the proposed management actions.

Table 4: Management action plans for exploration program

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
PHASE 1: FIELD MAPPING, GEOPHYSICAL SURVEYS AND SOIL SAMPLING					
Air Surveys	Noise	<p>Discuss flight plans and schedule with land owners prior to air surveys. Avoid residences, game and livestock enclosures where possible.</p> <p>Consider to rather use Drones – also discuss this option with the land owners</p>	- Proponent	<p>Once off prior to air surveys</p> <p>Continuous</p>	<p>Prior to exploration works</p> <p>Throughout the mapping, surveys and sampling phase</p>
Socio-economic Land Use	Lack of Site Access and Collaboration Agreements	<p>-agreements set out in the site-access contracts</p> <p>-Provide contact details to a designated person (liaison between landowners and the exploration teams).</p> <p>-Preference for employment of general and semi-skilled workers should be prioritized towards local residents. Employment of nonresidents, especially, should be justified,</p> <p>-Equal opportunity should be provided for men and women, when and where possible.</p> <p>-Land owners to be provided with a list of all people working on site.</p>	- Proponent (in collaboration with the Exploration Manager, if necessary)	<p>Once off prior to commencement of works</p> <p>Continuous</p>	<p>Prior to project activities and when necessary, throughout project operation.</p> <p>Throughout the mapping, surveys and sampling phase</p>

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		<ul style="list-style-type: none"> -All staff operating on site must be provided with identification and proof that they are working for the applicant -No new access tracks are created during mapping and soil sampling, unless agreed upon with the landowners. -Ensure gates are closed after entry and exit. -Poaching and plant theft are strictly prohibited, and staff found in possession will be prosecuted. -Schedule exploration activities in such a way that disturbances to hunting operations are minimized -No firearms are allowed -All the necessary options to improve the aesthetic of the site should be considered and incorporated in the activities of the prospecting and exploration program. - Agree on relevant compensation with landowners where land uses are impacted 			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
Biodiversity	Loss of Biodiversity	<ul style="list-style-type: none"> - The footprint of the area to be disturbed for surveying/mapping and for site access must be minimised as far as is practically possible. - A zero tolerance policy must be implemented, with regards to the killing or collection of any fauna and flora. -Biodiversity conservation awareness must be provided to all project workers and contractors. - No open fires permitted on site. - Speed limits must be enforced to prevent road kills. - No protected tree species or trees with a stem diameter over 10 cm may be cut down. If cutting of protected species is unavoidable, tree removal permits must be obtained for the removal of all protected tree species (as required by the Forestry Act). 	-Proponent (Exploration Manager)	Continuous Daily	Throughout the mapping, surveys and sampling phase
Air Quality	Generation of Dust	<ul style="list-style-type: none"> - Vehicle speeds will be limited to 40km/h on access routes to limit dust. -National Road Safety Regulations that apply to adhering to speed limits within gravel road tarred roads must be followed. 	- Proponent - Project Drivers	Daily	Throughout the mapping, surveys and sampling phase
Heritage	Impacts on archaeological	<ul style="list-style-type: none"> - Prior to commencement of exploration activities, the Proponent must liaise with the 	- Proponent	Daily / Weekly	Throughout the mapping, surveys and

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
	resources	<p>land owners to obtain any further information regarding likely archaeological / heritage sites within the target exploration areas.</p> <p>- In the event that archaeological resources are discovered, a chance find emergency procedure will be implemented which includes the following:</p> <p>-All work on site will be stopped to prevent damage;</p> <p>-An appropriate heritage specialist will be appointed to assess the find and related impacts; and</p> <p>-Permitting applications will be made to the necessary authorities, if required.</p> <p>-Any graves discovered during the exploration activities, must be avoided and preserved as a first priority. If damage is unavoidable, prior to damaging or destroying any identified graves, permission for the exhumation and relocation of graves must be obtained from the relevant descendants (if known) and the relevant local and provincial authorities.</p>	- All project workers		sampling phase
PHASE 2: DRILL SITE ESTABLISHMENT					

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
Air Quality	Generation of dust and gaseous emissions	<ul style="list-style-type: none"> - Minimize development of new access routes. - Vehicle speeds will be limited to 40km/h on site. - Vehicles and the drilling rig must be maintained in good working order. 	<ul style="list-style-type: none"> -SHE Officer - Project drivers 	Daily	Throughout the drill site establishment phase
Noise	Social nuisance by noise	-Vehicles must travel maximum 30 km/hour near houses/settlements	- Project drivers	Daily	Throughout the drill site establishment phase
Biodiversity	Loss of Flora and Fauna	<p>Flora:</p> <p>The Proponent should avoid unnecessary removal of vegetation, to promote a balance between biodiversity and their operations.</p> <ul style="list-style-type: none"> - Vegetation found on the site, but not in the targeted exploration areas should not be 	<ul style="list-style-type: none"> - Proponent - All project workers 	Daily	Throughout the drill site establishment phase

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		<p>removed but left to preserve biodiversity on site.</p> <ul style="list-style-type: none"> - Movement of vehicles and machinery should be restricted to existing roads and tracks to prevent unnecessary damage to the vegetation and grazing land. - Design access roads appropriately in a manner that disturbs minimal land areas as possible. - Make use of the existing road network as much as possible and avoid off-road driving, to minimize onsite floral destruction. - Vegetation clearing to be kept to a minimum. Must only be applied where necessary and within the development footprint. -No-go areas should be identified prior to operation, if any, to prevent disturbances in the current preserved ecosystems. - Environmental awareness on the importance of floral biodiversity preservation and preservation of grazing land for local livestock should be provided to the workers. - Any identified alien invasive species may immediately be eradicated. - Any unnecessary removal or destruction of grazing land, due to exploration activities should be avoided. 			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		<p>Fauna:</p> <ul style="list-style-type: none"> - Workers should refrain from disturbing, killing or stealing livestock and wildlife, as well as small soil and rock outcrop species found on site. -Poaching of wildlife from the area is strictly prohibited. - Avoid sites with large trees with raptors nests in them. -agreements set out in site-access contracts, specifically relating to the areas utilised for game and livestock farming. Special consideration should be given to the sensitive hunting season. 			
Land Use	Social and physical impacts related to land use	<ul style="list-style-type: none"> - The footprint of the area to be disturbed must be minimised as far as is practically possible. - Areas used as laydown areas are to be raked and/or ploughed to encourage revegetation - Prospecting and exploration activities should not in any way hinder the existing land uses within the EPL, but rather promote co-existence throughout the operations while respecting other land uses. - Project works must be limited to the active EPL sites only. 	Exploration Manager	Weekly	Throughout the drill site establishment phase

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		- The Proponent should ensure that their activities comply with the conditions set by the competent, regulatory, and affected authorities such that the proposed exploration activities do not severely impact the various existing land uses within and around the EPL.			
Heritage	Impacts on heritage and archaeological impacts	Measures as outlined under Phase 1	- Proponent - All project workers	Weekly	Throughout the drill site establishment phase
Socio-economic	Socio economic impacts of drill Site establishment	Measures as outlined under Phase 1	Exploration Manager	Weekly	Throughout the drill site establishment phase

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
PHASE 3: DRILLING AND ALL RELEVANT EXPLORATION ACTIVITIES					
Soil and Water Pollution	Contamination of soil/Hydrocarbon spillages	<ul style="list-style-type: none"> - In all areas where there is storage of hazardous substances (i.e. hydrocarbons), there must be containment of spillages on impermeable floors and bunded trays that can contain 100% of the volume of the hazardous substances. - All refuelling and any maintenance of vehicles must take place on impermeable surfaces. - Pollution should be prevented through basic infrastructure design and through maintenance of equipment. - The Proponent must establish environmental awareness for employees and contractors - A PVC lined sump will be used for collection of oils and silt contained in the drilling water - Any spills must be contained and cleaned up immediately - Non-toxic and biodegradable drilling lubricant will be used -Oil and wastewater spill control preventive measures should be in place on site to manage soil contamination, and prevent spills from reaching surface and ground 	<ul style="list-style-type: none"> - Proponent - All project workers 	Daily	Throughout the entire exploration programme

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		<p>water bodies. Some of the preventive measures that can be implemented include:</p> <p>(a) Identification of oil storage and use locations on site and allocate drip trays and polluted soil removal tools suitable for that specific surface (soil or hard rock cover) on the sites.</p> <p>(b) Maintain equipment and fuel storage tanks to ensure that they are in good condition to prevent leaks and spills.</p> <p>(c) The oil storage and use locations should be visually inspected for container or tank condition and spills.</p> <p>(d) Maintain a fully provisioned, easily accessed spill kit. Spill kits should be located throughout the active project sites contain the floor dry absorbent material and absorbent booms, pads, mats. These would be suitable for ground surface areas that are covered mainly by hard rocks.</p> <p>-All project employees should be sensitized to the impacts of soil pollution and advised to follow appropriate fuel delivery and handling procedures.</p> <p>-The Proponent should develop and prepare countermeasures to contain, clean up, and mitigate the effects of an oil spill. This includes keeping spill response procedures and a well-stocked cache of supplies easily accessible.</p>			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		<p>-Ensure employees receive basic Spill Prevention, Control, and Countermeasure (SPCC) Plan training and mentor new workers as they get hired.</p> <p>-Exploration site areas where hydrocarbons will be utilized,</p> <p>- The surface of exploration sites where hydrocarbons will be utilized should be covered with an impermeable plastic liner (e.g., an HDPE liner), carefully placed to minimize risk of puncturing, to prevent any spillages from getting into direct contact with the soils and prevent eventual infiltration into the ground.</p> <p>-Project machines and equipment should be equipped with drip trays to contain possible oil spills.</p> <p>-In cases of accidental fuel or oil spills on the soils from vehicles, machinery and equipment, the polluted soil should be removed immediately and disposed of in a designated waste type container for later disposal. The removed polluted soil should either be completely disposed of or cleaned/treated and returned to where it was taken from on site. It may also be replaced with cleaner soil.</p> <p>-Although fuel (diesel) required for exploration equipment will be stored in a tank, drip trays must be readily available and monitored to ensure that accidental fuel</p>			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		<p>spills along the tank trailer path/route around the exploration sites are cleaned on time (soon after the spill has happened).</p> <p>-Polluted soil must be collected and transported away from the site to an approved and appropriately classified hazardous waste treatment facility.</p> <p>-Washing of equipment contaminated by hydrocarbons, as well as the servicing of vehicles should take place at a dedicated area, where contaminants are prevented from contaminating soil or water resources.</p> <p>-Licenses in terms of the Water Resource Management Act (Act No. 11 of 2013) will be obtained for all drilled holes (not just boreholes).</p> <p>-Provide appropriate toilet facilities for the exploration workers on the site.</p> <p>-Toilet water should be treated by periodically emptying before reaching capacity and transported to a wastewater treatment facility.</p>			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
Air Quality	Contamination	<ul style="list-style-type: none"> - Vehicle speeds must be limited to 40km/h on access routes to limit dust. - The movement of drilling related vehicles on unpaved access track must be limited. - Water sprays can be used around the laydown area when a drill-site is located near houses/settlements. -The Proponent should ensure that the exploration schedule is limited to the number of days of the week agreed upon in access agreements. -Dust control measures may be considered to suppress dust, in the event that there are local complaints of high levels of dust generation. -Dust masks, eye protective glasses and other respiratory personal protective equipment (PPE) such as face masks should be provided to the workers at drilling sites, where they are exposed to dust. -The impact mitigation measures should be acknowledged in the relevant farm access agreements as required by law on commercial farms. -Drilling and excavating equipment should be regularly maintained to ensure drilling and excavation efficiency and so to reduce dust generation and harmful gaseous emissions. 	<ul style="list-style-type: none"> - Exploration Manager - All project workers 	Daily	Throughout the drilling phase

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
Noise	Contamination	<ul style="list-style-type: none"> - At drill sites located close to farms, drilling must only be conducted during the day. - Use well maintained drilling equipment. - Vehicles will travel maximum 40 km/hour near houses/settlements. -Noise from project vehicles and equipment on the working sites of the EPL should be kept at an acceptable level. -Exploration hours should be restricted to between 08h00 and 17h00, or at the times agreed upon in writing between the Proponent and land owners, in order to avoid noise pollution and vibrations generated by exploration equipment before or after hours, as agreed upon. -When operating the drilling machinery onsite, workers should be equipped with personal protective equipment (PPE) such as earplugs to reduce exposure to excessive noise. -The transportation of exploration materials, equipment and machinery should be limited to once or twice a week only. -Target exploration sites that may be found to be within less than 1 km from the residences (farmhouses) should be avoided at all costs. This is done to preserve tranquility of the residents. 	SHE Officer/ECO	Daily	Throughout the drilling phase

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
Land use (physical soils)	Physical soil/land disturbance and loss of topsoil	<ul style="list-style-type: none"> -Overburden should be handled efficiently during exploration works to avoid erosion when subjected erosional processes. -Prevent creation of huge piles of waste rocks by performing sequential backfilling, especially the exploration trenches. -Stockpiled topsoil and overburden waste rocks should be used to backfill the explored and disturbed site areas/spots during (where possible) and at the end of the exploration program. -Soils that are not within the intended and targeted footprints of the site areas should be left undisturbed and soil conservation implemented as far as possible. -Project vehicles/machinery should stick to access roads provide and or meant for the project operations but not to unnecessarily create further tracks on site by driving everywhere resulting in soil compaction. 	<ul style="list-style-type: none"> - All project workers - SHE Officer/ ECO - Exploration Manager 	Daily	Throughout the drilling phase
Third party Safety	Occupational Health & Safety	<ul style="list-style-type: none"> - The working area of the drill site shall only be accessed by authorized workers and their contractors / workers - Warning signs must be erected and maintained at the strategic location to warn third parties of dangers associated with the drilling activities. 	<ul style="list-style-type: none"> - Exploration Manager - SHE Officer 	Daily	Throughout the drilling phase

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		<ul style="list-style-type: none"> - Put 'no entry' signs at tracks turning off the official tourist routes. - Any person entering the drill sites must only be allowed after formal induction. -As part of their induction, the project workers should be provided with an awareness training of the risks of mishandling equipment and materials on site as well as health and safety risk associated with their respective jobs. -When working on site, employees should be properly equipped with adequate personal protective equipment (PPE) such as coveralls, gloves, safety boots, earplugs, dust masks, safety glasses, etc. -Heavy vehicle, equipment and fuel storage site should be properly secured, and appropriate warning signage placed where visible. -Drilled exploration boreholes that are no longer in use or waiting to be used after drilling should be properly marked for visibility and capped/closed off. -Ensure that after completion of the exploration, drill cuttings are put back into the holes and the holes filled and levelled, or removed from site to a suitable dumping facility. 			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		<p>-An emergency preparedness plan must be compiled, and all personnel appropriately trained.</p> <p>-Workers must not be allowed to consume any intoxicants prior to and during working hours, nor allowed on site when under the influence, as this may lead to mishandling of equipment, resulting in injuries and other health and safety risks.</p> <p>-Any potential dangerous or risky areas identified on site must be equipped with cautionary signs.</p>			
Illegal hunting	Illegal hunting of wildlife	No wildlife hunting is permitted. Site personnel should refrain from killing/poaching or intentionally disturbing wildlife, or any faunal species found on site and around the EPL.	<p>-Proponent</p> <p>-Exploration Manager</p> <p>-SHE Officer</p>	Daily	Throughout the entire exploration programme

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
Waste management (General waste and sanitation)	Environmental Pollution	<ul style="list-style-type: none"> - Suitable receptacles for waste disposal must be provided at appropriate locations on site. These receptacles will be clearly marked for different waste types. - Waste will be removed from site and disposed of at a suitable waste disposal facility. - Hazardous waste (including hydrocarbon contaminated material/soil) will be disposed of at a licensed hazardous waste disposal facility. -Workers should be sensitized to dispose of waste in a responsible manner and not to litter. -All domestic and general operational waste produced daily should be contained until such that time it will be transported to designated waste sites. -No waste may be buried or burned on site or anywhere else, and no waste must be left on the sites. -The exploration site should be equipped with separate waste bins for hazardous and general/domestic waste. -Hazardous waste, including emptied chemical containers should be safely stored on site where they cannot be accessed and used by uniformed locals for personal use. 	<ul style="list-style-type: none"> -Exploration Manager -SHE Officer -All project workers 	Daily	At site setup and throughout exploration programme

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		<p>These containers can then be transported to the nearby approved hazardous waste sites for safe disposal. No waste should be improperly disposed of on site or in the surroundings, i.e., on unapproved waste sites.</p> <p>-Oil spills should be taken care of by removing and treating soils affected by the spill.</p> <p>-A penalty system for irresponsible disposal of waste on site and anywhere in the area should be implemented.</p> <p>-Careful storage and handling of hydrocarbons on site is essential.</p> <p>-Potential contaminants such as hydrocarbons and wastewater should be contained on site and disposed of in accordance with municipal wastewater discharge standards so that they do not contaminate surrounding soils and eventually groundwater.</p> <p>-An emergency plan should be available for major/minor spills at the site during operation activities (with consideration of air, groundwater, soil and surface water) and during the transportation of the products(s) to the sites.</p>			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		<p><u>Wastewater generated by exploration workers living on-site:</u></p> <ul style="list-style-type: none"> -Sewage waste should be stored as per the portable chemical toilets supplied on site and regularly disposed of at the nearest wastewater treatment facility. -Emptying of chemical toilets according to the manufacturer's specifications. -All wastewater and hydrocarbon substances and other potential pollutants associated with the project activities should be contained in designated containers on site and later disposed of at the nearest approved waste sites in accordance with MAWLR's Water Environment Division standards on wastewater discharge into the environment. This is to ensure that these hazardous substances do not infiltrate into the ground and affect the local groundwater quality. 			
Fires	Accidental fire outbreak	<ul style="list-style-type: none"> -Portable fire extinguishers should be provided on site. -No open fires to be created by project personnel. -Potential flammable areas and structures should be marked as such with clearly visible signage. 	<ul style="list-style-type: none"> -Exploration Manager -SHE Officer 	Daily	Throughout the drilling phase

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
Archaeology and heritage	Accidental disturbance and destruction of archaeological or heritage objects and sites	<p>-The management and mitigations or recommendation to minimize impact on archaeological and heritage resources are not available. The only provisional recommendation to the study hereto is that:</p> <p>-The Proponent is advised to make an application to the National Heritage Council for a Consent to allow a detailed Assessment of the area in relation to the proposed activity believed to be an archaeological or heritage site.</p> <p>-The transportation of exploration materials, equipment and machinery should be kept to a minimum to reduce the pressure on local roads.</p> <p>-Heavy truck loads should comply with the maximum allowed speed limit for respective vehicles while transporting materials and equipment/machinery on the public and access roads (40km/h).</p> <p>-Drivers of all project phases' vehicles should be in possession of valid and appropriate driving licenses, and adhere to the road safety rules.</p> <p>-Drivers should drive slowly (40km/hour or less) and be on the lookout for livestock and wildlife as well as residents/travellers.</p> <p>-The Proponent should ensure that the site access roads are well equipped with temporary road signs conditions to cater for</p>	<p>-Exploration Manager</p> <p>-SHE Officer</p> <p>-Archaeologist</p>	Daily	Throughout the phases

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		<p>vehicles travelling to and from site throughout the project's life cycle.</p> <ul style="list-style-type: none"> -Project vehicles should be in a road worthy condition and serviced regularly to avoid accidents owing to mechanical faults. -Vehicle drivers should only make use of designated site access roads provided, and as agreed. -Vehicle's drivers should not be allowed to operate vehicles while under the influence of alcohol or any other intoxicants. -Sufficient parking areas for all project vehicles should be provided for and clearly demarcated on sites. -The Proponent should make provision for safe offloading and loading areas for materials and equipment on sites. -No heavy trucks or project related vehicles should be parked outside the project site boundary or demarcated areas for such purpose. -To control traffic movement on site, deliveries should be carefully scheduled. This should ideally be during weekdays and between the working hours. -If site access roads are in poor conditions, they should be upgraded to an acceptable standard to accommodate project related vehicles. 			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
PHASE 4: : CLOSURE AND REHABILITATION					
Rehabilitation	Degradation of site land and soils	<p>-All project related exploration boreholes that are no longer in use should be backfilled and capped.</p> <p>-Utilize stockpiled subsoil and topsoil to fill the excavated pits/trenches progressively back, i.e., stockpiled topsoil should be levelled during exploration activities.</p> <p>-Backfilling of all excavated pits and trenches with loose material, but not only be filled with sand alone, as wind will scours the sand and re-establish the holes.</p> <p>-Provision of both financial and technical resources for progressive rehabilitation and post-exploration activities should be made.</p>	<p>- Exploration Manager</p> <p>- SHE Officer/ ECO</p>	Weekly	Prior to and during closure and decommissioning of site
Decommissioning	Structures and Infrastructure	-All accumulated waste (hazardous, solid, and general) up until the cessation of exploration activities will be removed site and transported to designated off site waste management facilities.	<p>- Exploration Manager</p> <p>- SHE Officer/ ECO</p>	Weekly	Prior to and during closure and decommissioning of site

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		<p>-Removal of project vehicles and equipment from the site and taken to designated parking facility off site.</p> <p>-All project support structures such as ablution facilities, campsites, temporary field offices and storage containers/tanks shall be demolished, and the waste taken to designated sites. The site areas on which these structures were set up will be rehabilitated to pre-operational state.</p>			

5.3 Environmental and Social Management Action

The EMP is responsible for the monitoring indicators as well as timeframes. This is done to ensure that the EMP implementation responsibility are clearly given, and each implementation party involved in the project is aware of their respective responsibilities from the beginning and remains accountable. The environmental and social measures are enforced to comply with the activities governing legislations and to minimize the negative impacts while maximizing the project positive impacts.

5.4 Monitoring of EMP Implementation and ECC Renewal

Annual compliance monitoring of the EMP implementation should be undertaken throughout the project cycle, i.e. as required in the ECC conditions. The environmental monitoring reports are to be compiled and submitted to the DEAF for archives and for compliance with the environmental legislation. The Proponent should keep an Impact Indicator Checklist, or Environmental Self-Audit checklist that must be used by the ECO and updated accordingly (**Appendix B**).

6 Recommendations and Conclusions

EDS is confident that the potential impacts associated with the project activities on site can continue to be mitigated by effectively implementing the recommended management measures and with more effort and commitment put on implementation monitoring. It is therefore, recommended that the project and its associated activities on site be granted a new ECC, provided that:

- The workers and/or contractors comply with the legal requirements governing their project and its associated activities.
- All required permits, licenses and approval for the project activities are obtained as required.
- The ECC is compliant with the Environmental laws, and that the Proponent must effectively conduct the EMP monitoring compliance.
- All the environmental and social precautions provided are adhered to.

The Proponent have been in compliance with the implementation of the EMP throughout the project activities, EDS therefore, recommend that the ECC may be renewed to allow the Proponent to continue with the project activities on the EPL. However, the Proponent needs to continue with the implementation of the EMP and the recommendations set-out in the EMP must be adhered to.

CHANCE FINDS PROCEDURE (AFTER KINAHAN, 2020)

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

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

- National Heritage Council of Namibia (061 244 375 / Technical Office +264 61 301 903)
- National Museum (061 276800),
- National Forensic Laboratory (061 240461).

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

Responsibility:

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, advice management, and recover remains

Procedure:

Action by person identifying archaeological or heritage material:

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

Action by foreman

- a) Report findings, site location and actions taken to superintendent
- b) Cease any works in 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.