

## ENVIRONMENTAL MANAGEMENT PLAN (EMP):

**ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR THE PROPOSED MINERAL EXPLORATION ACTIVITIES ON EXCLUSIVE PROSPECTING LICENCE (EPL) No. 6707 LOCATED NORTH-WEST OF SWAKOPMUND, ERONGO REGION**

**ECC Application number: APP- 00876**

**Document Version: Draft**

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# **1 INTRODUCTION**

## **1.1 Project Background**

John Walenga (hereinafter referred to as the Proponent) has applied to the Ministry of Mines and Energy (MME) to be granted an Exclusive Prospecting Licence (EPL) No. 6707 on the 26<sup>th</sup> of April 2017. However, the approval and granting of the EPL is subjected to an Environmental Clearance Certificate (ECC), thus “pending ECC” status on the mining cadaster portal. The 19 769.4562 hectares (ha) EPL is located about 26.69 km from Swakopmund, Erongo Region; and lies within the Dorob National Park. The Proponent is interested in Base & Rare Metals, Dimension Stones, Industrial Minerals, Nuclear Fuel Minerals and Precious Metals

The Proponent intends to conduct prospecting and exploration activities Base & Rare Metals, Dimension Stones, Industrial Minerals, Non-Nuclear Fuel, Nuclear Fuel Minerals, Precious Metals & Semi-Precious Stones.

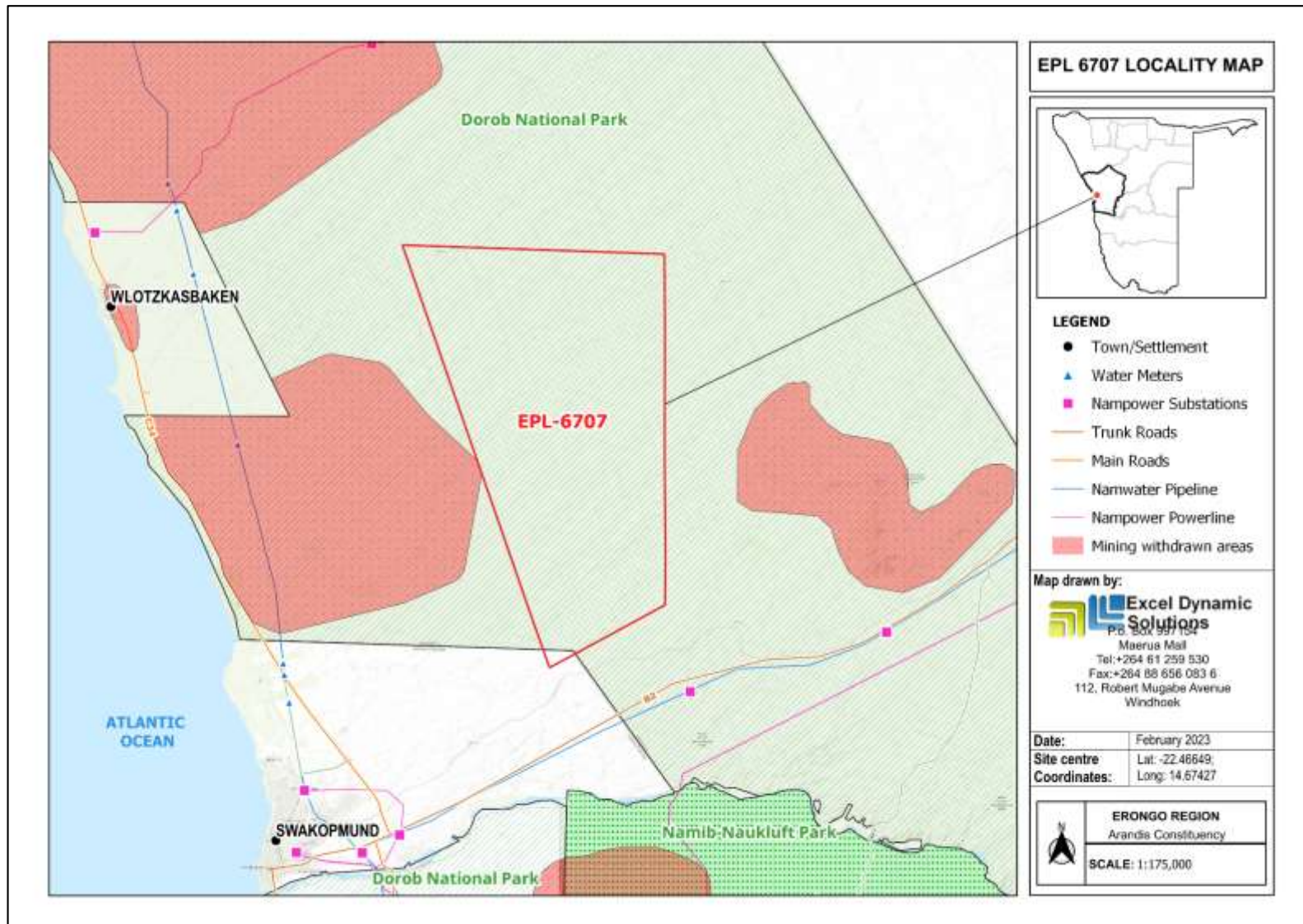


Figure 1:F The locality map for EPL 6707

According to Section 27 (1) of the Environmental Management Act (EMA), No. 7 of 2007, and in line with Sections 32-37 of the EMA as gazetted in 2012, the proposed prospecting and exploration activities on the EPL 6707 form part of the listed activities that may not be conducted without an EIA being undertaken. The relevant listed activities as per EIA regulations are:

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

This statutory document has been prepared as per requirement in accordance with Section 8 of the EMA (No. 7 of 2007). The compilation of this EMP is one of the requirements (scope of work) presented to Excel Dynamic Solutions (Pty) Ltd by the Proponent. It is required of the Environmental Consultant to comply with the EMA and provide for the following:

- Prepare an explicit Environmental Management Plan to be used as a guideline to monitor compliance to the recommendations stipulated in the EIA, and to assist in managing and monitoring activities throughout exploration and maintenance of the proposed exploration activities and sites on the EPL.
- The Environmental Consultant must clearly elucidate in the EMP the roles and responsibilities of the Proponent, the contractors, and any other identified stakeholders.

## **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 environments effects on the environment are to be mitigated, controlled and monitored."*

An EMP is one of the most important outputs of the EA process as it synthesizes all the proposed management & mitigation and monitoring actions, set to a timeline and with specific assigned responsibilities. It provides a link between the impacts identified in the EA process and the

required mitigation measures to be implemented during exploration. 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 exploration activities, namely: planning, prospecting & exploration, and decommissioning & rehabilitation phase:

- **Planning phase** - This is the stage of the proposed project during which the Proponent prepares all the administrative and technical requirements needed for the actual works on the ground. The planning includes obtaining the necessary permitting and authorization from relevant national and local stakeholders and facilitating the recruitment and procurement processes in preparation for the exploration activities (and site maintenance). Since the EPL overlies the Dorob National Park, the Proponent, is therefore, required to ensure that the affected parties are consulted before the prospecting and exploration phase commences, and should ensure that a written consent to conduct work is obtained and the conditions that may come with the consent are adhered to.
- **Prospecting and Exploration phase** - This is the phase where the Proponent carries out prospecting and exploration activities for the target commodities and undertake related activities on site. It is also the phase during which maintenance of the area, equipment and machinery is done by the Proponent.
- **Decommissioning and Rehabilitation** – This is the phase during which the exploration activities on the EPL cease. The decommissioning of the EPL exploration activities may be considered due to poor results or declines in the focus commodity market price. Before the decommissioning phase, the Proponent would need to put site rehabilitation measures in place.

**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 draft EMP will be used by the Proponent, employees and/or contractors, to provide management measures to be undertaken during exploration activities, 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.

### 1.3 Appointed Environmental Assessment Practitioner

To fulfill the requirements of the EMA and its 2012 EIA Regulations, the Proponent appointed Excel Dynamic Solutions (Pty) Ltd (EDS), an independent consulting company to conduct the required EA process on their (Proponent's) behalf. This draft EMP will be submitted as part of an application for the proposed exploration method on the EPL to the Environmental Commissioner at the Department of Environmental Affairs and Forestry (DEAF), at Ministry of Environment, Forestry and Tourism (MEFT).

### 1.4 Environmental Assessment Legal Requirements

The content of the EMP must meet the requirements of Section 8 (j) of the EIA Regulations. The EMP must address the potential environmental impacts of the prospecting and exploration activities on the environment throughout the project life cycle. It must also include a system for assessment of the effectiveness of monitoring and management arrangements after project implementation.

The Proponent, therefore, has the responsibility to ensure that the exploration activities as well as the EA process conform to the principles of the EMA and must ensure that employees act in accordance with such principles. **Table 1** below lists the requirements of an EMP as stipulated by Section 8(e) of the EIA Regulations, primarily on specific approvals and permits that may be required for the activities required of the EPL.

**Table 1: Applicable legal requirements and permits to the activities of the EPL 6707**

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.	The EMA and its regulations should inform and guide this EA process.  Should the ECC be issued to the Proponent, it should be renewed every 3 years, counting from the date of issue.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 4878)	<p>Details requirements for public consultation within a given environmental assessment process (GN 30 S21).</p> <p>Details the requirements for what should be included in a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15).</p>	<p>Contact details at the Department of Environmental Affairs and Forestry (DEAF), <b>Ministry of Environment, Forestry and Tourism (MEFT), Office of the Environmental Commissioner</b></p> <p>Tel: +264 61 284 2701</p>
Minerals (Prospecting and Mining) Act (No. 33 of 1992)	<p>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.</p> <p>Section 54(2): details provisions pertaining to the decommissioning or abandonment of a mine.</p>	<p>The Proponent should ensure that all necessary permits/authorization for these EPL are obtained from the Ministry of Mines and Energy (MME).</p> <p>Contact person and details at the MME (<b>Mining Commissioner</b>)</p> <p>Tel: +264 61 284 8167</p>
Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001)	<p>Regulation 3(2)(b) states that “No person shall possess or store any fuel except under authority of a license or a certificate, excluding a person who possesses or stores such fuel in a quantity of 600 litres or less in any container kept at a place outside a local authority area”</p>	<p>The Proponent should obtain the necessary authorisation form the MME for the storage of fuel on-site.</p> <p><b>Ministry of Mines and Energy: Acting Director – Petroleum Affairs</b></p> <p>Tel: +264 61 284 8291</p>



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 plant species.	All plant species, which are known to occur within the project site, these are required to be removed and a permit should be obtained from the nearest Forestry office (Ministry of Environment, Forestry and Tourism (MEFT)) prior to removing them.  <b>The Director of Forestry</b>  Tel: +264 61 208 7666
National Heritage Act No. 76 of 1969	Call for the protection and conservation of heritage resources and artefacts.	Should any archaeological material, such as bones, old weapons/equipment etc. be found on the EPL site, work should stop immediately, and the National Heritage Council of Namibia must be informed as soon as possible. The Heritage Council will then decide to clear the area or decide to conserve the site or material.  <b>Contact Details at National Heritage Council of Namibia</b>  Tel: (06) 301 903

## 1.5 Draft EMP Limitations

This EMP has been drafted with the acknowledgment of the following limitations:

- This EMP has been drafted based on the Environmental Assessment (EA) conducted for targeted prospecting and exploration activities on EPL 6707.
- The mitigation measures recommended in this EMP document are based on the risks/impacts in the ESA Report which were identified based on the project description as provided by the Proponent, site investigation and public input. Should the scope of the proposed project change, the risks/impacts will have to be reassessed and mitigation measures provided accordingly.

## **2 EMP 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 below:

### **2.1 Competent Monitoring Authority: Department of Environmental Affairs and Forestry (DEAF, MEFT)**

The DEAF is responsible for enforcing compliance with the EMA, its regulations and full implementation of this EMP. The competent authority also reviews biannual reports and grant ECC renewal after 3 years.

### **2.2 The Proponent or Proponent's Representative (PR)**

If the Proponent does not intend to manage all aspects and activities referred to in this EMP, they should assign this responsibility to a suitably qualified individual referred to in this plan as the Proponent's Representative (PR). The PR may be appointed to manage all phases of the project, or to manage only the EMP aspects for the project. The PR's responsibilities may include:

- 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.
- Issuing fines for contravening EMP provisions.

### **2.3 Exploration Manager (as appropriate)**

This individual is responsible for ensuring that the exploration activities of the project are completed on time. The Manager's duties and responsibilities include:

- Ensuring that relevant commitments contained in the EMP Action Plans are adhered to.
- Ensuring that relevant staff is trained in procedures entailed in their duties.

- Maintaining 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.
- Coordinating with all relevant interested and affected parties/stakeholders.
- Development and management of schedules for daily activities.

## 2.4 Environmental Control Officer (ECO)

The Proponent may assign the responsibility of ensuring EMP compliance throughout the project life cycle to a designated member of staff or external qualified and experienced person, referred to in this EMP as the Environmental Control Officer (ECO). The ECO will have the following responsibilities:

- Management and facilitation of communication between the Proponent, PR and Interested and Affected Parties (I&APs) regarding this EMP.
- Conducting site inspections (recommended frequency is monthly or weekly as recommended – please refer to Table 3) of all areas with respect to the implementation of this EMP (monitor and audit the implementation of the EMP).
- Advising the PR 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.
- Ensuring that the exploration activities on site are conducted in accordance with the International System organization (ISO) standard 14001: 2015.

### Archaeology: Chance Finds Procedure (CFP) Implementation Roles

The following personnel have been assigned responsibilities as per the Chance Finds procedure (Appendix 1):

- **Operator:** To exercise due caution if archaeology 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 recover remains.

The Proponent should assess these commitments in detail and should acknowledge their obligation to the specific management actions detailed in the Tables under the following sections.

### **3 ENVIRONMENTAL MANAGEMENT & MITIGATION MEASURES**

#### **3.1 Management of Key Potential Adverse Environmental Impacts**

From the assessment conducted, the following key potential negative impacts have been identified and are summarized below.

- Land degradation and Biodiversity Loss
- Generation of dust
- Water Resources Use
- Soil & Water Resources Pollution
- Waste Generation
- Occupational Health & Safety risks
- Vehicular Traffic Use & Safety
- Noise & Vibrations
- Disturbance to Archaeological & Heritage Resources
- Impacts on local Roads
- Social Nuisance: local property intrusion & disturbance
- Impacts associate with closure and decommissioning of exploration works

#### **3.2 Aim of the Environmental Management Plan Actions**

The aim of the management actions of the EMP is to avoid the above-listed potential negative impacts, where possible. Where impacts cannot be avoided, measures are provided to reduce the significance of these impacts.

Management actions recommended for the potential impacts rated in the ESA carried out for the prospecting and exploration activities were based on the following project stages (phases):

- Planning, Prospecting and Exploration (and site maintenance) phases (**Table 2**)
- Monitoring (**Table 3**)

- Decommissioning and Rehabilitation (section 3.5).

The responsible person(s) should assess these actions in detail and acknowledge their commitment to the specific management actions detailed in the phases given under the following subsections.

### 3.3 Planning, Prospecting and Exploration Phase Management Action Plans (Mitigation Plan)

The management action plans recommended for this phase are presented in **Table 2** below.

**Table 2: Management and mitigation action plans for the planning and exploration phases**

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
<b>PLANNING PHASE</b>						
EMP implementation and training	Lack of EMP awareness and implications thereof	<p>-A Comprehensive Health and Safety Plan for the project activities should be compiled. This will include all the necessary health, safety, and environmental considerations applicable to respective works on sites.</p> <p>-An EMP non-compliance penalty system should be implemented on site.</p> <p>-The Proponent should appoint an ECO to be responsible for managing the EMP implementation and monitoring.</p>	<p>-All required Plans and systems are compiled and in place.</p> <p>and Environmental Control Officer (ECO) is appointed</p>	Proponent	EMP implementation Plans and Systems	Pre-exploration works
Authorizations	Lack of Agreements, Permits/ Licenses	<p>-All the required agreements and licenses or permits should be applied for and signed, respectively before commencement of work on the EPL, or as required.</p> <p>-The permits, agreements referred to herein include:</p>	<p>-Applicable permits and licenses to be obtained from relevant authorities and kept on site for records keeping and future inspections.</p>	Proponent	<p>Proponent</p> <p>Respective authorities and services provider(s)</p>	Prior to exploration works

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<ul style="list-style-type: none"> <li>○ waste management disposal permits from the relevant facility operator/owner</li> <li>○ water supply agreements.</li> <li>○ Onsite fuel storage permit from MME for any petroleum stored onsite.</li> <li>○ Consent/ permit for entering the site.</li> </ul>	<p>-Agreements/permits signed and obtained from on time, <b>min. 2 months prior to planned commencement date of works.</b></p>			
Employment	Creation of employment opportunities	<p>-General labour should be sourced from the locally affected area (people from the local communities), in accordance with procedures approved by the relevant authorities.</p> <p>-Preference of local people for employment for jobs should be implemented, i.e., permanent residents from the surrounding areas should be employed for the unskilled labour preferentially to out-of-area people (outsiders) where possible. Out-of-area employment should be justified, for example by the unavailability of local skills only.</p>	-Number of locals employed for exploration activities	Proponent in collaboration with the Exploration Manager (if necessary)	Record of employees	Pre-project activities and when necessary, throughout

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		-Equal opportunity should be provided for both men and women, when and where possible.				
Specialised procurement of services	Contractors and services	-All services related to exploration activities such as trenching/pitting and drilling that the Proponent may need, preference should be given to local providers of such services. If not available locally, the services search should be extended to a regional level (Erongo Region), nationally and lastly, internationally.	Number of hired contractors.	Proponent  Exploration Manager	Record of hired or contracted companies or services providers	Pre-project activities and when necessary, throughout
<b>PROSPECTING AND EXPLORATION PHASE</b>						
EMP implementation and training	Lack of EMP awareness and implications thereof	-EMP trainings should be provided to all new workers on site. -All site personnel should be aware of necessary health, safety, and environmental considerations applicable to their respective work. -The implementation of this EMP should be monitored.  The site should be inspected, and a compliance audit done throughout <b>the project activities, monthly.</b>	Compliance monitoring conducted bi-annually and should be recorded.	ECO	Bi-annual reports  Records of EMP training conducted.	Throughout the exploration phase and as required





Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		importance of conserving water and become accountable.				
Soils	Physical soil/land disturbance and loss of topsoil	<p>-Overburden soils and rocks should be handled efficiently during operations to avoid erosion when subjected erosional processes.</p> <p>-Stockpiled topsoil and drill materials should be used to backfill the excavated and disturbed site areas/spots.</p> <p>-Soils that are not within the intended and targeted footprints of the site should be left undisturbed and soil conservation implemented as far as possible.</p> <p>-Project vehicles and 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.</p> <p>-The disturbance of the soil surface in the vicinity of the working sites must be minimised to prevent wind erosion. The</p>	<p>No proliferation of informal vehicle tracks.</p> <p>No new erosion gullies.</p>	ECO	<p>Proponent</p> <p>All personnel</p> <p>Complaint's logbook</p>	Throughout the exploration phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>footprint of the EPL site area must be kept small as much as possible and existing access road are to be always utilised to avoid off road tracks.</p> <p>-The project footprint area should not be cleared entirely, and the exploration vehicles and equipment must be placed in such a way that soil disturbance is minimised, and the site should be rehabilitated after each onsite work.</p>				
Soils and water resources	Soils and water resources pollution	<p>-Oil and wastewater spill control preventive measures should be in place on site to management soil contamination, thus preventing and minimizing the contamination from reaching water resources bodies. Some of the soil control preventive measures that can be implemented include:</p> <p>-Spill control preventive measures should be in place on site to management soil contamination, thus preventing and or minimizing the contamination from reaching water resources bodies.</p> <p>-All project employees should be sensitized about the impacts of soil pollution and advised to follow</p>	<p>No complaints of pollutants on the soils and eventually in the water due to exploration activities</p> <p>No visible oil spills on the ground or pollution spots.</p>	ECO	<p>Complaint's logbook</p> <p>Waste containers</p> <p>Non-permeable material to cover the ground surface at areas where hydrocarbons and potential pollutants are utilized.</p>	Throughout exploration phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>appropriate fuel delivery and handling procedures.</p> <ul style="list-style-type: none"> <li>-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.</li> <li>-Ensure employees receive basic Spill Prevention, Control, and Countermeasure (SPCC) Plan training and mentor new workers as they get hired.</li> <li>-Project machines and equipment should be equipped with drip trays to contain possible oil spills when operated on site.</li> <li>-Polluted soil should be removed immediately and put in a designate waste type container for later disposal.</li> <li>-Drip trays must be readily available on this trailer and monitored to ensure that accidental fuel spills along the tank trailer path/route around the exploration sites are cleaned on time (soon after the spill has happened).</li> </ul>				

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<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 hydrocarbons, as well as the washing and servicing of vehicles should take place at a dedicated area, where contaminants are prevented from contaminating soil or water resources.</p> <p>-Toilet water should be treated using the long drop toilet system and periodically emptied out before reaching capacity and transported to a wastewater treatment facility.</p> <p>- No exploration activities must be conducted within rivers</p>				
Biodiversity	Loss of Fauna and Flora	<p><b>Fauna</b></p> <p>-The project workers should refrain from killing or snaring the animals that may be found on and around the site.</p> <p>-Workers should refrain from disturbing and poaching animal</p>	<p>No disturbance to unmarked areas.</p> <p>No complaints from locals regarding unauthorised vegetation removal or cutting down of trees.</p>	ECO	<p>Barricading tape (to indicate working areas)</p> <p>Complaint logbook</p>	Throughout the exploration phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>species which may be found within the EPL and surrounding areas.</p> <ul style="list-style-type: none"> <li>-Access roads (even existing ones) should be utilized appropriately in a manner that disturbs minimal land areas as possible, thus minimizing faunal habitat destruction.</li> <li>-Breeding sites for faunal species that are found within the site and nearby should not be disturbed.</li> <li>-Environmental awareness on the importance of faunal preservation should be provided to the workers and contractors.</li> </ul> <p><b>Flora:</b></p> <ul style="list-style-type: none"> <li>-The Proponent should avoid unnecessary removal of vegetation, to promote a balance between biodiversity and the exploration works.</li> <li>-Vegetation found on the site, but not in the targeted exploration areas should not be removed but left to preserve biodiversity on the site.</li> <li>-Movement of vehicle and machinery should be restricted to existing roads and tracks to</li> </ul>	<p>No complaints of wildlife hunting by the project personnel.</p> <p>No intentional disturbance and destruction of site vegetation and faunal species</p> <p>Visible preservation of onsite vegetation</p>			

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>prevent unnecessary damage to the vegetation.</p> <ul style="list-style-type: none"> <li>-Design access roads appropriately in a manner that disturbs minimal land areas as possible.</li> <li>-Make use of the existing routes as much as possible and avoid off-road driving, thus minimizing onsite floral destruction.</li> <li>-Vegetation clearing to be kept to a minimum. The vegetation of the site is largely low and open and therefore vegetation clearing at a large scale should only be applied where necessary and within the EPL footprint.</li> <li>- Vegetation found on the site should not be removed.</li> <li>-Vegetation found on the site, but not in the targeted areas should not be removed but left to preserve biodiversity on the site.</li> <li>-Environmental awareness on the importance of floral biodiversity preservation should be provided to the workers and contractors.</li> </ul>				

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
Illegal hunting	Illegal hunting of animals	<b>-No animal hunting is permitted.</b>	Incident reports of illegal hunting of animals by the crew.	ECO	Complaint's logbook	<b>During site set up, and throughout exploration phase</b>
Land Use	Conflict between land uses and exploration activities	<p>-Exploration activities should not in any way hinder the existing land uses within the EPL, Thus the proponent needs to inform affected landowner before they start with the exploration activities.</p> <p>-The project workers and vehicles should be limited to the actual EPL active sites only but not unnecessarily wander and drive around other land uses sites, respectively.</p> <p>-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 different existing activities around the EPL.</p>	<p>Land access and use permits/authorizations.</p> <p>Compliance with conditions set within operational permits by relevant and affected authorities.</p> <p>Little to no complaints of significant interference from the neighbouring land users</p>	<p>PRO</p> <p>Proponent</p> <p>ECO</p>	<p>Proponent</p> <p>Relevant authorities (MEFT, MME, etc.)</p>	Throughout the exploration phase
Road use and safety	Increase in vehicular traffic flow	-Vehicles should be driven only on existing access roads and necessary temporary access roads only leading to EPL mapped	No complaints from members of the public regarding vehicular traffic issues related to the project activities.	<p>Proponent</p> <p>ECO</p>	<p>Number of project vehicles on site</p> <p>Names of drivers</p>	Throughout exploration phase



Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>sites; no new roads should be constructed where possible.</p> <p>All vehicle that will be used for exploration will be clearly marked.</p> <p>-Transportation of project materials, equipment and machinery should be limited to once or twice a week only, but not every day.</p> <p>- Heavy truck loads should comply with the maximum allowed limit while transporting materials and equipment/machinery on the public and access roads.</p> <p>-Any carting of water into the area from external sources should be done on an efficient schedule, in containers that can supply and store water for as long as possible, in order to reduce the number of trucks on the road.</p> <p>-Drivers of all project phases' vehicles should be in possession of valid and appropriate driving licenses.</p> <p>-Vehicle drivers should adhere to the road safety rules.</p> <p>-Drivers should drive slowly (40km/hour or less) in the project</p>	<p>All personnel operating the project vehicles and machinery are appropriately licensed and possession of valid driving licenses.</p> <p>Demarcated areas for parking, offloading, and loading zones are on sites.</p> <p>If required, site access road permits obtained, and requirements fulfilled.</p> <p>No creation of unnecessary tracks on site.</p>		<p>Frequency of water carting</p>	<p>Site access permit (s) to be applied for and obtained prior to commencement of exploration works</p>

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>area, and be on the lookout for wildlife and people.</p> <p>-Project vehicles should be in a road worthy condition and serviced regularly to avoid accidents because of mechanical faults of vehicles.</p>				
Local roads	Overuse and maintenance	<p>-The heavy trucks transporting materials and services to site should be scheduled to travel at limited frequency, to avoid daily travels to site, unless in cases of emergencies.</p> <p>-The Proponent should consider frequent maintenance of local roads to ensure that the roads are in a good condition.</p>	-Visible efforts of maintaining access and community roads by the Proponent	Proponent	Road clearing machinery (bull dozers)	Throughout the exploration phase, when necessary
Occupational Health and safety	General health and safety associated with project activities in both phases	<p>-The Proponent should make provision for medical check-up for all the workers at site to monitor the impact of project related activities on workers.</p> <p>-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</p>	Comprehensive health and safety plan for all exploration activities compiled.	<p>Proponent</p> <p>Exploration Manager</p> <p>ECO</p>	<p>Occupational Health and Safety Personnel</p> <p>Health and Safety Trainings</p> <p>First aid kits</p> <p>Trained worker to administer first aid</p>	Throughout the exploration phase and trainings offered as and when required

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>as well as health and safety risk associated with their respective jobs.</p> <p>-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.</p> <p>-Heavy vehicle, equipment and fuel storage site should be properly secured, and appropriate warning signage placed where visible.</p> <p>-Ensure that after completion of exploration holes these are capped and closed off and that trenches are backfilled and levelled,</p> <p>-An emergency preparedness plan should be compiled, and all personnel appropriately trained.</p> <p>-Workers should not be allowed to drink alcohol prior to and during working hours nor allowed on site when under the influence of alcohol as this may lead to mishandling of equipment which</p>				

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>results into injuries and other health and safety risks.</p> <p>-The site areas that are considered temporary risks should be equipped with "danger" or "cautionary" signs.</p>				
	Accidental fire outbreak	<p>-Portable fire extinguishers should be provided on site.</p> <p>-No open fires to be created by project personnel.</p> <p>-Potential flammable areas and structures such as fuel storage tanks should be marked as such with clearly visible signage.</p>	No wildfires recorded (due to presence of workers)	Proponent  ECO	Fire extinguishers (1 per vehicle) and 1 per working site	Throughout exploration phase
Archaeology and heritage	Accidental disturbance and destruction of archaeological or heritage objects and sites	<p>-On-site personnel and contractor crews must be sensitized to exercise and recognize "chance finds heritage" in the course of their work.</p> <p>-During the prospecting and exploration works, it is important to take note and recognize any significant material being unearthed and making the correct judgment on which actions should be taken (refer to CFP Appendix attached to the EMP).</p> <p>-The footprint impact of the proposed prospecting and</p>	<p>Preservation of all artefacts and objects that are discovered on and around project site</p> <p>No-Go Areas avoided</p>	Proponent          ECO	Salvage equipment  Archaeologist	As and when required, i.e., prior to site set up, and during exploration.

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>exploration activities should be kept to minimal to limit the possibility of encountering chance finds within the EPL boundaries. The Proponent should keep a buffer of 500 meters on all the archaeological/cultural sites observed within the project site and broader area throughout their stay (duration of their presence) in the area.</p> <p>-A landscape approach of the site management must consider culture and heritage features in the overall planning of exploration infrastructures within and beyond the license boundaries.</p> <p>-The Proponent and Contractors should adhere to the provisions of Section 55 of the National Heritage Act in event significant heritage and culture features are discovered while conducting exploration works.</p> <p>-Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project Archaeological Management Plan (AMP)/EMP should be complied.</p>		<p>Operator</p> <p>Foreman</p> <p>Superintended</p> <p>Archaeologist</p>	<p>Flag tapes</p> <p>GPS (site marking)</p>	

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>-An archaeologist or Heritage specialist should be onsite to monitor all significant earth moving activities that may be implemented as part of the proposed project activities.</p> <p>-When the removal of topsoil and subsoil on the site for exploration purposes, the site should be monitored for subsurface archaeological materials by a qualified Archaeologist.</p> <p>-Show overall commitment and compliance by adapting “minimalistic or zero damage approach”.</p> <p>-In addition to these recommendations above, there should be a controlled movement of the contractor, exploration crews, equipment, setting up of camps and everyone else involved in the prospecting and exploration activities to limit the proliferation of informal pathways, gully erosion and disturbance to surface and sub-surface artifacts such as stone tools and other buried materials etc.</p>				

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
Littering and waste management (general waste and sanitation)	Environmental Pollution	<ul style="list-style-type: none"> <li>-Workers should be sensitized to dispose of waste in a responsible manner and not to litter.</li> <li>-After each daily works, the Proponent should ensure that there are no wastes left on the sites.</li> <li>-All domestic and general project waste produced daily should be contained until such that time it will be transported to designated waste sites.</li> <li>-No waste may be buried or burned on site or anywhere else.</li> <li>-The exploration site should be equipped with separate waste bins for hazardous and general/domestic waste.</li> <li>-Sewage waste should be stored as per the available sewage system supplied on site and regularly disposed of at the nearest treatment facility</li> <li>-Oil spills should be taken care of by removing and treating soils affected by the spill.</li> <li>-A penalty system for irresponsible disposal of waste on site and</li> </ul>	<ul style="list-style-type: none"> <li>No visible litter around the project area</li> <li>Provision of sufficient waste storage containers</li> <li>Waste management awareness</li> </ul>	ECO	<ul style="list-style-type: none"> <li>Waste storage containers</li> <li>Waste disposal permits to municipalities</li> <li>Environmental, Health and Safety Statements and Policy</li> </ul>	Throughout exploration phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>anywhere in the area should be implemented.</p> <p>-Careful storage and handling of hydrocarbons on site is essential, therefore should be enforced.</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 exploration (with consideration of air, groundwater, soil, and surface water) and during the transportation of the product(s) to the sites.</p>				
	<p>Wastewater generated by exploration workers living on-site.</p>	<p>-Provision of ablution facilities for workers (mobile/portable chemical toilet if possible).</p> <p>-Emptying of chemical toilets according to the manufacturer's specifications.</p>	<p>Adequate toilet and basic ablution facilities on site.</p>	<p>Proponent  ECO</p>	<p>Chemical toilets</p> <p>Sewage removal operator</p> <p>waste treatment agents/chemicals</p>	<p>Throughout exploration phase</p>



Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
Air Quality	Dust generation	<p>-Exploration vehicles should not drive at a speed more than 40 km/h to avoid dust generation around the area.</p> <p>-When and if the project reaches the advanced stages of exploration, a reasonable amount of water should be used on gravel roads, using regular water sprays on gravel routes and near exploration sites to suppress the dust that may be emanating from certain exploration areas on the EPL.</p> <p>-Dust masks, eye protective glasses and other respiratory personal protective equipment (PPE) such as face masks should be provided to the workers on site drilling areas, where they are exposed to dust.</p> <p>-Excavating equipment should be regularly maintained to ensure drilling and excavation efficiency and so to reduce dust generation and harmful gaseous emissions.</p>	<p>No complaints from the public about vehicle emissions and dust generation.</p> <p>Visible efforts to curb dust</p>	ECO	<p>Complaint's logbook</p> <p>Dust suppressant (Water)</p>	Throughout exploration phase
Noise	Nuisance	-Noise from project vehicles and equipment on the working sites of the EPL should be at acceptable levels.	Complaints from neighbouring land users about excessive noise.	ECO	Complaint's logbook	Throughout exploration phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>-The exploration times should be set such that, no such activities are carried out during the night or very early in the mornings (to be limited between 8am and 5pm on weekdays).</p> <p>-Exploration hours should be restricted to between 08h00 and 17h00, or to times agreed upon between proponent and land owner, to avoid noise and vibrations generated by exploration equipment and the movement of vehicles before or after hours.</p> <p>-When operating the drilling machinery onsite, workers should be equipped with personal protective equipment (PPE) such as earplugs to reduce exposure to noise.</p>			Noise protective equipment for workers	
<b>PROGRESSIVE REHABILITATION AND DECOMMISSIONING PHASE</b>						
Rehabilitation	Disturbance and damaging of land	<p>-All excavated pits related to the project activities should be capped and backfilled.</p> <p>-All waste generated and stored on site during exploration activities should be disposed of at the respective nearest solid waste management sites.</p>	<p>Capped boreholes and backfilled pits</p> <p>No sign of waste or littering seen on site and around site areas.</p>	Proponent	<p>Excavators and other backfilling/demolishing machinery</p> <p>Record of pits excavated, and</p>	<p>Progressive rehabilitation done throughout the exploration phase and complete decommission and</p>

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>-The stockpiled topsoil should be levelled soon after completion of works at sites.</p> <p>-Any temporary setup on site should be dismantled, and the area rehabilitated as far as practicable, to their original state.</p> <p>-Explored areas on worksites should be progressively rehabilitated by stockpiling and backfilling.</p> <p>-Provision of both financial and technical resources for progressive rehabilitation.</p> <p>-Re-vegetation of areas with species consistent with surrounding vegetation</p>	<p>Carrying away of waste, and removal of vehicles and equipment from site</p> <p>No stockpiled topsoil (topsoil is levelled after completion of each work)</p> <p>Campsite dismantled and materials taken away from site.</p> <p>Visible signs of stockpiled topsoil</p>		<p>boreholes drilled (if any)</p> <p>Waste containers on sites</p> <p>Photo records of backfilled sites</p> <p>Records of finances set aside for decommissioning activities</p>	<p>rehabilitation done after completion of exploration works.</p>

### 3.4 Monitoring Action Plan (Monitoring Plan)

To support and ensure that the proposed mitigation measures are achieving the desired results, a monitoring plan must be implemented. The monitoring action plans recommended for planned exploration works are presented in **Table 3** below.

Table 3: Management action plans for Monitoring

Environmental Feature	Impact	Monitoring Actions	Implementation responsibility	Frequent	Threshold	Action if threshold is exceeded
Archaeology and Heritage	Discovered archaeology artefacts	Implementing the CFP (Appendix 1)	ECO Archaeologist	Weekly	Observed damage to of the activities	Remedy the consequences by halting the activities
Soils	Loss of topsoil	All measures should be considered to prevent the loss of topsoil	ECO and Exploration Manager	weekly	Proliferation of new vehicle tracks	Rehabilitation of affected areas
Monitoring	EMP non-compliance	The ECO or the Proponent/Contractor should monitor the implementation of this EMP to ensure compliance.  The ECO(s) should inspect the site throughout the exploration period and after completion.	ECO	Daily	Increase in health, safety and environmental damage incidence	Daily safety talks, Remedy the consequences
Biodiversity	Loss of biodiversity	Comply with the marked no-go areas and avoid areas sensitive to any type of disturbance.  Clear only footprint areas to maintain as much of the remaining natural vegetation on site and to prevent loss of habitat (if so, advised by MEFT).	ECO  Workers involved in this phase	Weekly	Vegetation clearance outside of marked areas.	Rehabilitation of affected areas to the satisfaction of the ECO
Health and Safety	Health and safety of the workers	-Workers should be trained on how to handle materials and equipment on site (if they do not already know how to) to avoid injuries.	ECO	Daily/Weekly	Health and safety incident	Remedy the consequences

Environmental Feature	Impact	Monitoring Actions	Implementation responsibility	Frequent	Threshold	Action if threshold is exceeded
		<p>-Exploration equipment and materials transported to site should be securely fastened to the vehicles (trucks and cars). This is to ensure that the materials and equipment do not fall off the vehicles and cause injuries to anyone while transporting them.</p> <p>- All personnel should be provided with appropriate personal protective equipment (PPE), such as gloves, masks, safety boots, safety glasses and hard hats always during exploration hours on site to prevent serious injuries or loss of life.</p>	Workers Involved in this phase			
Neighbouring land users to the site	Disturbance	Exploration works schedule should be limited to normal working hours, between 08h00 and 17h00. This is to ensure generated noise does not become nuisance to the neighbours.	ECO Exploration Manager	Weekly	A logged complaint about excessive noise	Revision of site activities
Waste	Environmental Pollution	-The site should be always kept tidy. All domestic and general construction waste produced daily should be cleaned and contained daily to prevent environmental pollution.	ECO	Daily	Visible litter around project site A logged complaint	Clean-up of the affected areas and ensuring exploration workers utilise waste containers provided.

Environmental Feature	Impact	Monitoring Actions	Implementation responsibility	Frequent	Threshold	Action if threshold is exceeded
		-Separate waste containers (bins) for hazardous and domestic / general waste must be provided on site to avoid mixing of waste.	All workers involved in this phase.			
Transport	Transportation of workers to and from site	-Project workers must be transported, in a suitable passenger vehicle to and from site, to ensure workers safety.  -No off-road driving	ECO	Daily	A logged complaint about bad form of transport affecting occupational safety and health of workers	
Vehicular traffic safety	Increase in local traffic flow.	-All drivers of the project vehicles should be in possession of valid and appropriate driving licenses to operate such vehicles. -Project vehicles should be in a road worthy condition and serviced regularly to avoid accidents because of mechanical faults of vehicles. -Vehicle drivers should not be allowed to operate vehicles while under the influence of alcohol. -No heavy trucks or project related vehicles should be parked on biologically sensitive areas.	ECO	Weekly	A logged complaint about traffic increase or damage to roads	Find alternative access roads for the team. Rehabilitation of affected roads

### 3.5 Decommissioning and Rehabilitation

Successful rehabilitation requires careful consideration of the local ecological context in combination with rehabilitation goals. The most important steps in undertaking successful rehabilitation planning and environmental awareness (environmental education) on the importance of progressive rehabilitation (or post-activity rehabilitation) and its importance to the environment. Furthermore, to successfully implement the planned rehabilitation, practically, this will depend on the rehabilitation program, characteristics of the site, nature of disturbance, rehabilitation methods, as well as resources availability.

#### Site Specific Rehabilitation Plan

To ensure that they do their best to rehabilitate the disturbed areas, the Proponent intends to:

- Utilize stockpiled subsoil and topsoil to back fill the excavated pits/trenches.
- Make financial provision that will be used for post-exploration rehabilitation program.
- Backfilling of all pits and trenches with loose materials.
- Levelling of topsoil that was stockpiled for exploration purposes.
- Removal of project vehicles and equipment from the site and taken to designated parking facility off site.
- All project support structures such as ablution facility (toilet and washroom system), 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-exploration state.
- 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.

Decommissioning and rehabilitation will involve the following:

- Capping of drill holes and backfilling of all excavated pits with loose materials.
- Collecting and disposing domestic waste at the nearest landfill/ dumpsite.
- Leveling the stockpiled topsoil during exploration phase.
- Any temporary setup of camps should be dismantled, and the area should be rehabilitated as far as possible to its pre-exploration state.

## 4 ENVIRONMENTAL MONITORING AND REPORTING

To minimize the "medium" and uphold "low" significance ratings of impacts identified and assessed in the ESA report, monitoring reports are to be compiled and submitted to the DEAF for archiving on a bi-annual basis (every 6 months throughout the project operations) or as required by the Environmental Commissioner (as per the ECC conditions). This practice will make any considerations for ECC renewal easy as it nears expiration. Therefore, the Proponent should meritoriously monitor and submit the reports to the DEAF. The submission is not only done for record keeping purposes, but also in compliance with the environmental legislation.

## 5 CONCLUSION AND RECOMMENDATION

In the event that the Environmental Commissioner considers ECC issuance for EPL 6707, it is recommended that an ECC for EPL 6707 may be granted, subject to the following recommendations:

- All mitigations provided in this Report and the management action plans in the EMP should be implemented and monitoring conducted as recommended.
- All the necessary environmental and social (occupational health and safety) precautions provided should be adhered to.
- Site areas where exploration activities such as excavated pits have ceased should be rehabilitated, as far as practicable, to their original state.
- The monitoring of the implementation of mitigation measures should be conducted, applicable impact's actions taken, reporting done and recorded as recommended in the Draft EMP.



The proposed prospecting and exploration works has some sensitive environmental and social components that may be potentially affected, and therefore potential negative impacts stemming from these activities are acknowledged, assessed and mitigation measures made thereof. The mitigation measures indorsed in the ESA report and management action plans provided in this draft Environmental Management Plan can be considered adequate to elude and/or reduce the risks to acceptable levels. Excel Dynamic Solutions (Pty) Ltd, therefore, assures that these measures are sufficient to enable environmentally sustainable and safe exploration works on the EPL. It is recommended that, in the event of issuance of an ECC for EPL 6707 a written approval for the ECC may be issued on condition that the provided management measures and action plans are effectively implemented on site and monitored. The monitoring of the environmental components described in the ESA should be conducted by the Proponent and applicable Competent Authorities. This is to ensure that all potential impacts identified in this study and other impacts that might arise during implementation are properly identified in time and addressed.

## APPENDIX 1: 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 .... object .....must as soon as practicable report the discovery to the Council*”. The procedure of reporting set out below must be observed so that heritage remains reported to the NHC are correctly identified in the field.

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

- National Heritage Council of Namibia (061 244 375)
- National Museum (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:

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