

# ENVIRONMENTAL MANAGEMENT PLAN (EMP) DRAFT

# FOR:

THE PROPOSED MINERAL EXPLORATION ACTIVITIES FOR BASE AND RARE METALS, DIMENSION STONE, PRECIOUS METALS AND INDUSTRIAL MINERALS ON EXCLUSIVE PROSPECTING LICENSE (EPL) NO. 9595 Located SOUTH-EAST OF KOMBAT IN THE OTJOZONDJUPA REGION, NAMIBIA.

# ECC Application number: APP- 005440

# Document Version: Draft

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EAP SIGNATURE

PROPONENT SIGNATURE

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# **1 INTRODUCTION**

## 1.1 Project Background

Red Enterprises (Pty) Ltd (The Proponent) applied to be granted an Exclusive Prospecting License (EPL) No. 9595 by the Ministry of Mines and Energy (MME). The EPL cover a surface area of 2032.4575 hectares (ha), and it is located about 15 km south-east of Kombat in Otjozondjupa region. The EPL covers (overlies) farms such as **Reitfontain No. 44, Reitfontain No. 344 and Kududam No. 161** 

The Proponent is interested in conducting exploration activities for **Base and Rare Metals**, **Dimension stone**, **Precious Metals and Industrial Minerals**.

The commencement of prospecting and exploration activities on the EPL requires an Environmental Clearance Certificate (ECC).

EPL 9595

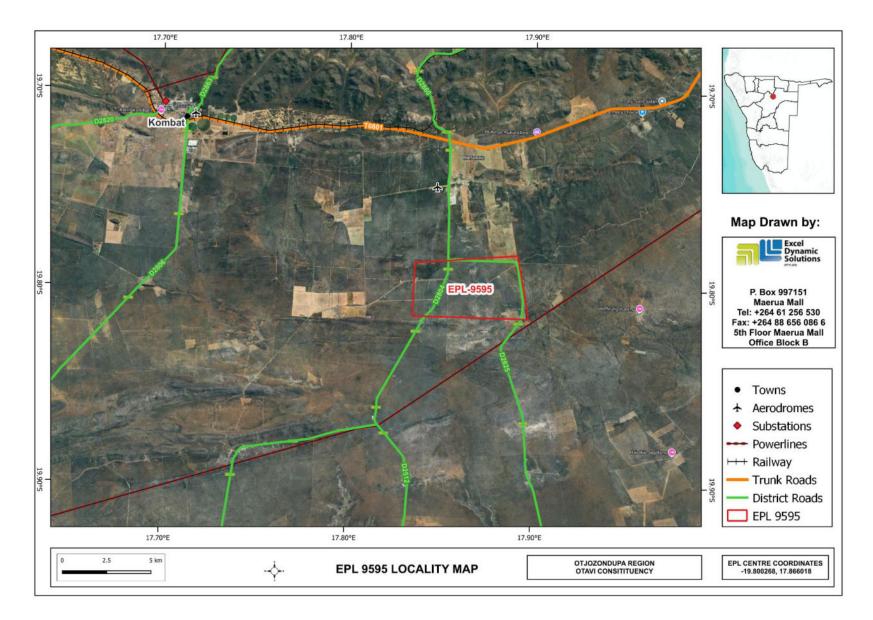


Figure 1: Locality Map for EPL 9595

EPL 9595

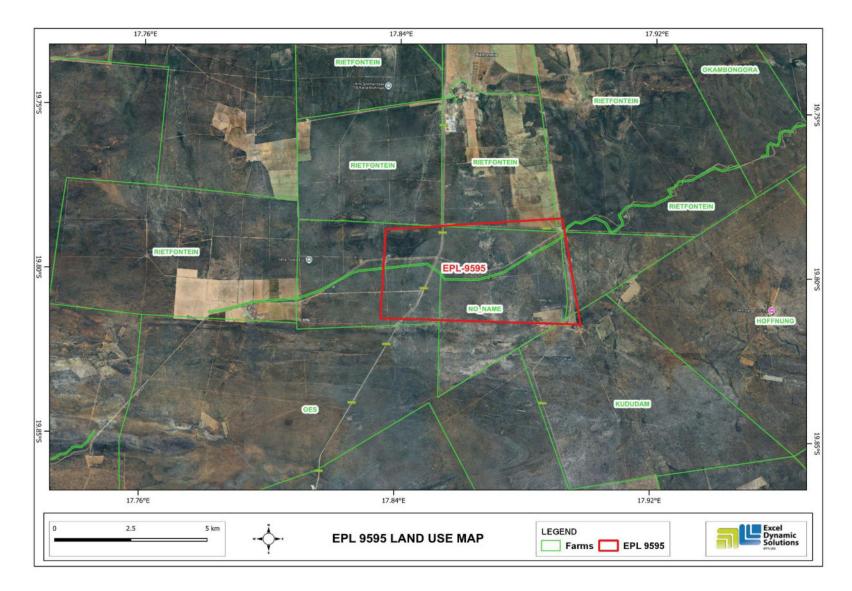


Figure 2: Land Use Map

In terms of Section 27 (1) of the Environmental Management Act (EMA) (Act No. 7 of 2007) and in line with Sections 32-37 of the EMA, the proposed prospecting and exploration activities on EPL 9595 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 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 document has been prepared as a legal requirement of Section 8 of the EMA (Act No. 7 of 2007). The compilation of this EMP is one of the outputs required of the Environmental Consultant by the Proponent. It is required of the Environmental Consultant to comply with the EMA and provide for the following:

- Prepare a detailed 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 the proposed exploration project on the EPL.
- The Environmental Consultant must clarify 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. 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 exploration activities, namely: planning, prospecting & exploration, and decommissioning & rehabilitation.

- Planning phase This is the stage of the proposed project during which the Proponent prepares all administrative and technical requirements needed for the actual works on the site. The planning phase includes obtaining of the necessary permits and authorizations from relevant national and local stakeholders, and facilitating the recruitment and procurement processes, in preparation for the exploration activities.
- Prospecting and Exploration phase This is the phase where the Proponent carries out prospecting and exploration activities for the target commodities and undertakes 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 exploration operations may be considered due to poor exploration results or a decline in the commodity market price. Before the decommissioning phase, the Proponent will 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 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.

#### **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 environmental consultant 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), Ministry of Environment, Forestry and Tourism (MEFT).

# 2 LEGAL OBLIGATIONS GOVERNING THE PROPOSED ACTIVITIES

The content of the EMP must meet the requirements of Section 8 (j) of the EIA Regulations, and 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.

| Legislation/Policy/ Guideline  | Relevant Provisions   | Implications for this project   |
|--|---|---|
| Environmental Management Act   | Requires that projects with   | The EMA and its regulations should inform   |
| EMA (No 7 of 2007)   | significant environmental<br>impacts are subject to an<br>environmental assessment<br>process (Section 27).<br>Details principles which are to<br>guide all EIAs.   | and guide this EA process.<br>Should the ECC be issued to the Proponent,<br>it should be renewed every 3 years,<br>counting from the date of issue.<br>Contact details at the Department of<br>Environmental Affairs and Forestry (DEAF), |
| Environmental Impact<br>Assessment (EIA) Regulations<br>GN 28-30 (GG 4878) | Details requirements for public<br>consultation within a given<br>environmental assessment<br>process (GN 30 S21).<br>Details the requirements for what<br>should be included in a Scoping<br>Report (GN 30 S8) and an<br>Assessment Report (GN 30<br>S15). | Ministry of Environment, Forestry and<br>Tourism (MEFT), Office of the<br>Environmental Commissioner<br>Tel: +264 61 284 2701   |

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

| Legislation/Policy/ Guideline                                | Relevant Provisions   | Implications for this project  |
|--|---|--|
| Minerals (Prospecting and<br>Mining)<br>Act (No. 33 of 1992) | Section 48 (3): To enable the<br>Minister to consider any<br>application referred to in section<br>47 the Minister may (b) require<br>the person concerned by notice<br>in writing to (i) carry out or cause<br>to be carried out such<br>environmental impact studies as<br>may be specified in the notice.<br>Section 54(2): details provisions<br>pertaining to the<br>decommissioning or<br>abandonment of a mine.<br>Under this Act (Section 51 (1a)),<br>holder of a mineral license<br>cannot exercise any rights on a<br>private land until the holder has<br>entered into an agreement with<br>the owner regarding payment of<br>compensation. | The Proponent should ensure that all<br>necessary permits/authorization for these<br>EPL are obtained from the Ministry of Mines<br>and Energy (MME).<br>Contact details at the MME (Mining<br>Commissioner)<br>Tel: +264 61 284 8167<br>The Proponent should timely enter into<br>and sign access and land use agreement<br>(consent) with the respective affected<br>landowners. |
| Water Act 54 of 1956: Ministry                               | Prohibits the pollution of water  |  |
| of Agriculture, Water and<br>Land Reform (MAWLR)             | and implements the principle that<br>a person disposing of effluent or<br>waste has a duly of care to<br>prevent pollution (S3 (k)).<br>Provides for control and<br>protection of groundwater (S66<br>(1), (d (ii)).<br>Liability of clean-up costs after<br>closure/abandonment of an<br>activity (S3 (I)). (I)).  |  |

| Legislation/Policy/ Guideline   | Relevant Provisions   | Implications for this project  |
|---|---|--|
| Water Resources Management<br>Act (No 11 of 2013): Ministry of<br>Agriculture, Water and Land<br>Reform (MAWLR) | Ensure that the water resources<br>of Namibia are managed,<br>developed, used, conserved and<br>protected in a manner consistent<br>with, or conducive to, the<br>fundamental principles set out in<br>Section 66 - protection of<br>aquifers, Subsection 1 (d) (iii)<br>provide for preventing the<br>contamination of the aquifer and<br>water pollution control (S68). | These permits include Borehole Drilling<br>Permits, Groundwater Abstraction & Use<br>Permits, and when required, the<br>Wastewater / Effluent Discharge<br>Permits).<br>Division: Water Policy and Water Law<br>Administration Division<br>Tel: +264 61 208 7158<br>Water Environment Division<br>Tel: +264 61 208 7167  |
| Petroleum Products and Energy<br>Act (No. 13 of 1990) Regulations<br>(2001)                                     | Regulation 3(2)(b) states that<br>"No person shall possess or store<br>any fuel except under authority of<br>a license or a certificate,<br>excluding a person who<br>possesses or stores such fuel in<br>a quantity of 600 litres or less in<br>any container kept at a place<br>outside a local authority area"   | The Proponent should obtain the necessary<br>authorisation form the MME for the storage<br>of fuel on-site.<br>Ministry of Mines and Energy: Director –<br>Petroleum Affairs<br><b>Tel: +264 61 284 8291</b>   |
| Forestry Act 12 of<br>2001, Amended Act 13 of 2005  | Prohibits the removal of any<br>vegetation within 100 m from a<br>watercourse (Forestry Act S22<br>(1)). The Act prohibits the<br>removal of and transport of<br>various protected plant species.   | Should there be protected plant species,<br>which are known to occur within the project<br>site, these are required to be removed and<br>a permit should be obtained from the<br>nearest Forestry office (Ministry of<br>Environment, Forestry and Tourism<br>(MEFT)) prior to removing them.<br><b>Director of Forestry Division</b><br>Tel: +264 61 208 7320 |

| Legislation/Deliev/ Ovideline                                      | Delevent Drevisione   | Implications for this project        |  |
|--|---|--------------------------------------|--|
| Legislation/Policy/ Guideline                                      | Relevant Provisions   | implications for this project        |  |
| Legislation/Policy/ Guideline National Heritage Act No. 76 of 1969 | Relevant Provisions<br>Calls for the protection and<br>conservation of heritage<br>resources and artefacts. |                                      |  |
|  |   | National Heritage Council of Namibia |  |
|  |   | Tel: (061) 301 903                   |  |

## 2.1 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 for Base and Rare Metals, Dimension stone, Precious Metals and Industrial Minerals on EPL 9595.
- The mitigation measures recommended in this EMP document are based on the risks/impacts identified in the ESA, 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.

# **3 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 2 below:

| Role (Person and or Institution)  | Responsibilities  |
|---|---|
| Red Enterprises (Pty) Ltd (The Proponent)   | -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<br>of compliance with this EMP and issuing fines for contravening EMP<br>provisions.   |
| Exploration Manager   | This individual will be responsible to ensure that the exploration activities of the project are completed on time. The Manager's duties and responsibilities will include:   |
|   | -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<br>(ECO) or Safety, Health &<br>Environmental (SHE) Officer | The Proponent may assign the responsibility of ensuring EMP compliance<br>throughout the project life cycle to a designated member of staff or external<br>qualified and experienced person, referred to in this EMP as the Environmental<br>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 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)  | The PRO will be responsible for the following tasks:  |

#### Table 2: The persons and institutions responsible for the Implementation of the Draft EMP

## Red Enterprises (Pty) Ltd: EPL No.9595

| Role (Person and or Institution)   | Responsibilities   |
|--|--|
|  | <ul> <li>-Liaising between the affected landowners, communities and the Proponent.</li> <li>-Ensure effective communication with stakeholders, local communities, farmers, media (if necessary) and the public.</li> <li>-Organising and overseeing public relations activities, Managing public relations issues.</li> <li>-Preparing and submitting public relations reports, if required.</li> <li>-Collaborating with personnel and maintaining project-related open communication among personnel.</li> </ul> |
| Other responsibilities include<br>Archaeology: Chance Finds<br>Procedure (CFP) Implementation<br>Roles | <ul> <li>A. Operator: exercise due caution if archaeological remains are found</li> <li>B. Site Manager and ECO: secure site and advise management timeously</li> <li>C. Archaeologist: inspect, identify, advise management, and recover remains.</li> </ul>  |

# **4 ENVIRONMENTAL MANAGEMENT & MITIGATION MEASURES**

## 4.1 Management of Key Potential Adverse Environmental Impacts

From the assessment conducted, the following key potential negative impacts have been identified as:

- 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.

## 4.2 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 3)
- Monitoring (**Table 4**)
- Decommissioning and Rehabilitation

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.

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

The management action plans recommended for this phase are presented in **Table 3** below.

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

### Table 3: Management and mitigation action plans for the planning and exploration phases

Red Enterprises (Pty) Ltd: EPL No.9595

| Aspect  | Impact  | Management and Mitigation<br>Measure(s)  | Key Performance<br>Indicator (KPI)  | Implementation<br>Responsibility           | Resources                  | Timeline  |
|---|---|--|---|--|----------------------------|---|
|   |   | and Managements),<br>compensation agreements (if<br>necessary), rehabilitation<br>commitment agreements, and<br>petroleum storage permits (if<br>necessary).   | from on time, min. 2<br>months prior to plan<br>commencement date<br>of works.  |  |                            |   |
| Communication<br>between the<br>Proponent and<br>other<br>neighboring<br>land users and<br>custodians | Lack of<br>communication<br>(proper liaison)<br>between other<br>land users and<br>Proponent with<br>regards to land<br>use | <ul> <li>The Proponent may appoint a Public Relation Officer (PRO)/representative to liaise with the land users.</li> <li>-A clear communication procedure/plan which should include a grievance mechanism.</li> </ul> | A PRO is appointed<br>-Ongoing Landowners'<br>Engagement &<br>Consultation<br>throughout the project<br>cycles, when and as<br>required.<br>PRO contact details to<br>be provided to the<br>affected landowners | Proponent                                  | PRO<br>Complaint's logbook | PRO<br>appointment<br>(Prior to project<br>activities) and<br>their<br>responsibilities<br>throughout the<br>project activities |
| Employment  | Creation of<br>employment<br>opportunities  | -Preference for employment of general and semi-skilled workers should be prioritized towards local   | -Number of locals<br>employed for<br>exploration activities   | ProponentincollaborationwiththeExploration | Record of employees        | Pre-project<br>activities and<br>when   |

| Aspect                                    | Impact  | Management and Mitigation<br>Measure(s)  | Key Performance<br>Indicator (KPI)   | Implementation<br>Responsibility | Resources   | Timeline  |
|---|---|--|--|----------------------------------|---|---|
|   |   | residents Employment of non-<br>residents, especially should be<br>justified,<br>-Equal opportunity should be<br>provided for both men and women,<br>when and where possible.  |  | Manager (if<br>necessary)        |   | necessary,<br>throughout  |
| Specialized<br>procurement of<br>services | Contractors<br>and services                             | -The Proponent should use locally<br>derived services where practically<br>possible  | Number of hired contractors.   | Proponent                        | Record of hired or<br>contracted companies<br>or services providers | Pre-project<br>activities and<br>when<br>necessary,<br>throughout |
|   |   |  |  | Manager                          |   |   |
|   |   | PROSPECTING  | GAND EXPLORATION P   | HASE                             |   |   |
| EMP<br>implementation<br>and training     | Lack of EMP<br>awareness and<br>implications<br>thereof | <ul> <li>-EMP trainings should be provided<br/>to all new workers on site.</li> <li>-All site personnel should be<br/>aware of necessary health, safety,<br/>and environmental considerations<br/>applicable to their respective work.</li> <li>-The implementation of this EMP<br/>should be monitored.</li> <li>The site should be inspected, and<br/>a compliance audit done<br/>throughout the project cycle.</li> </ul> | Compliance monitoring<br>conducted bi-annually<br>and should be<br>recorded. | ECO                              | Bi-annual reports<br>Records of EMP<br>training conducted.          | Throughout the<br>exploration<br>phase and as<br>required         |

| Aspect   | Impact   | Management and Mitigation<br>Measure(s)   | Key Performance<br>Indicator (KPI)   | Implementation<br>Responsibility             | Resources   | Timeline                                    |
|--|--|---|--|--|---|---|
|  |  | An EMP non-compliance penalty system should be implemented on site.   |  |  |   |   |
| Communication<br>between the<br>Proponent and<br>other<br>neighbouring<br>land users and<br>custodians | Lack of<br>communication<br>(proper liaison)<br>between<br>landowner's<br>and Proponent<br>with regards to<br>land use | <ul> <li>The PRO/project representative contact details must be shared with all affected parties prior to undertaking activities, for easy communication during exploration activities.</li> <li>The Proponent should compile a clear communication procedure / plan which should include a grievance and response mechanism.</li> </ul>                      | -PRO is part of the<br>project personnel.<br>-Ongoing affected<br>parties' Engagement &<br>Consultation<br>throughout the project<br>cycles, when and as<br>required | PRO  | Complaint's logbook<br>PRO contact details to<br>be provided to the<br>affected land users.<br>Records of<br>community'<br>consultation | Throughout the<br>exploration<br>activities |
|  |  |   | -Community<br>grievances addressed<br>to their satisfaction  |  | Land access<br>agreement conditions   |   |
| Grazing land   | Loss of grazing<br>areas   | <ul> <li>-Any unnecessary removal or destruction of grazing land, due to exploration activities should be avoided.</li> <li>-Vegetation found on the site, but not in the targeted exploration areas should not be removed but left to preserve biodiversity and grazing land.</li> <li>-Workers should refrain from driving off-road and creating</li> </ul> | -Limited cleared sites<br>-Less access tracks<br>-No complaints from<br>affected parties<br>regarding significant<br>land/vegetation<br>clearing                     | Proponent /<br>Exploration<br>Manager<br>ECO | Grievance logbook   | Throughout the<br>phases                    |

| Aspect                 | Impact  | Management and Mitigation<br>Measure(s)   | Key Performance<br>Indicator (KPI)  | Implementation<br>Responsibility | Resources                                       | Timeline                         |
|------------------------|---|---|---|----------------------------------|---|----------------------------------|
|                        |   | unnecessary tracks that may<br>contribute to soil erosion and loss<br>of grazing land.<br>-Environmental awareness on the<br>importance of the preservation of<br>grazing land for local livestock<br>should be provided to the workers.  |   |                                  |   |                                  |
| Water<br>Resources Use | Over-<br>abstraction<br>(water demand<br>and<br>availability) | -Establish a buffer zone around<br>the Namwater canal to prevent<br>direct disturbance of the canal and<br>its surrounding ecosystem.<br>-Implement a water quality<br>monitoring program to ensure that<br>exploration activities do not   | Water supply<br>agreements<br>Proof/ recording/<br>quantification of water<br>saving efforts. | Proponent                        | Water supplier<br>Water supplying<br>agreements | Once off supply<br>agreement     |
|                        |   | adversely affect the water quality<br>of the canal. This could involve<br>regularly collecting water samples<br>for analysis.<br>-The Proponent should be water-<br>use conscious and consider<br>voluntary water use reduction by<br>sticking to their proposed<br>threshold volumes or less when<br>possible. | Water supplier<br>-Water permits<br>-inspection of water<br>storage tanks on site             | Exploration<br>Manager           | Proponent                                       | Throughout the exploration phase |
|                        |   | <ul> <li>The Proponent should aim to use water efficiently, recycle and reuse where necessary and possible.</li> <li>Water used to cool off operational equipment may be captured and</li> </ul>  | Water quality<br>monitoring   |                                  |   |                                  |

| Aspect | Impact   | Management and Mitigation<br>Measure(s)  | Key Performance<br>Indicator (KPI)   | Implementation<br>Responsibility | Resources   | Timeline                               |
|--------|--|--|--|----------------------------------|---|--|
|        |  | used for the cleaning of project<br>equipment, if possible.<br>-Water conservation awareness<br>and saving measures training<br>should be provided to all the<br>project workers to promote water<br>conservation<br>-An efficient recycling system that<br>decreases water usage at<br>exploration sites<br>-Diverting water filled with<br>impurities away from water bodies<br>to fend off contamination<br>-A practical water treatment<br>process for groundwater, process<br>water, and any other form of water<br>used in exploration activities<br>A water management system that<br>runs during exploration and long<br>after the completion of all<br>exploration activities |  |                                  |   |  |
| Soils  | Physical<br>soil/land<br>disturbance<br>and loss of<br>topsoil | -Overburden should be handled<br>efficiently during operations to<br>avoid erosion when subjected to<br>erosional processes.<br>-Stockpiled topsoil and drill<br>materials should be used to<br>backfill the disturbed site<br>areas/spots.  | No proliferation of<br>informal vehicle tracks.<br>No new erosion gullies. | ECO                              | Proponent<br>All personnel<br>Complaint's logbook | Throughout the<br>exploration<br>phase |

| Aspect                       | Impact                                    | Management and Mitigation<br>Measure(s)   | Key Performance<br>Indicator (KPI)   | Implementation<br>Responsibility | Resources   | Timeline                           |
|------------------------------|---|---|--|----------------------------------|---|------------------------------------|
|                              |   | <ul> <li>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.</li> <li>Project vehicles and machinery should stick to access roads provided for the project operations, and avoid unnecessary creation of further tracks on site, resulting in soil compaction.</li> <li>The project footprint area should not be cleared entirely, and the exploration vehicles and equipment must have designated sites for parking/storage in order to avoid soil disturbance</li> <li>Sites of operations must be rehabilitated after completion of works onsite.</li> </ul> |  |                                  |   |                                    |
| Soils and water<br>resources | Soils and water<br>resources<br>pollution | -Groundwater monitoring:<br>Implement a groundwater<br>monitoring program to regularly<br>measure water quality and<br>quantity. This will allow you to<br>identify any potential issues and<br>take corrective actions to prevent<br>further contamination or depletion.   | No complaints of<br>pollutants on the soils<br>and eventually in the<br>water due to<br>exploration activities | ECO                              | Complaint's logbook<br>Non-permeable<br>material to cover the<br>ground surface at<br>areas where<br>hydrocarbons and | Throughout<br>exploration<br>phase |

| Aspect | Impact | Management and Mitigation<br>Measure(s)  | Key Performance<br>Indicator (KPI)   | Implementation<br>Responsibility | Resources                             | Timeline |
|--------|--------|--|--|----------------------------------|---------------------------------------|----------|
|        |        | <ul> <li>-Oil and wastewater spill control preventive measures should be in place on site to management soil contamination, preventing and minimizing the contamination from reaching water bodies.</li> <li>-All project employees should be sensitized to the impacts of soil pollution and advised to follow appropriate fuel delivery and handling procedures.</li> <li>-The Proponent should develop and prepare countermeasures to contain, clean up, and mitigate the effects of oil spills. This includes keeping spill response procedures and a well-stocked cache of easily accessible supplies.</li> </ul> | No visible oil spills on<br>the ground or pollution<br>spots.<br>-Waste containers<br>provided at exploration<br>work sites and<br>campsites |                                  | potential pollutants are<br>utilized. |          |
|        |        | -Ensure employees receive basic<br>Spill Prevention, Control, and<br>Countermeasure (SPCC) training<br>and mentor new workers as they<br>get hired.  |  |                                  |                                       |          |
|        |        | -Project machines and equipment<br>should be equipped with drip trays<br>to contain possible oil spills when<br>operated on site.  |  |                                  |                                       |          |
|        |        | -Polluted soils must be removed immediately and put in a designate   |  |                                  |                                       |          |

| Aspect       | Impact                     | Management and Mitigation<br>Measure(s)   | Key Performance<br>Indicator (KPI)   | Implementation<br>Responsibility | Resources   | Timeline                               |
|--------------|----------------------------|---|--|----------------------------------|---|--|
|              |                            | waste type container for later<br>disposal.<br>-Drip trays must be readily<br>available to ensure that accidental<br>fuel spills along fuel storage<br>facilities or fuel-consuming<br>equipment are caught and<br>cleaned up on time<br>-Heavily polluted soil must be<br>collected and transported away<br>from the site to an approved and<br>appropriately classified hazardous<br>waste treatment facility.<br>-Washing and servicing of<br>equipment contaminated by<br>hydrocarbons should take place at<br>a dedicated area, where<br>contaminants are prevented from<br>contaminating soil or water<br>resources.<br>-Sewage and ablution wastewater<br>should be treated as according to<br>the portable toilet manufacturer<br>instructions. |  |                                  |   |  |
| Biodiversity | Loss of Fauna<br>and Flora | Fauna:<br>-Poaching of wildlife in the area is<br>strictly prohibited.<br>-Project workers should refrain<br>from killing or snaring livestock  | No disturbance to<br>unmarked areas.<br>No complaints from<br>locals regarding<br>unauthorized | ECO                              | Barricading tape (to<br>indicate working<br>areas)<br>Complaint logbook | Throughout the<br>exploration<br>phase |

| Aspect | Impact | Management and Mitigation<br>Measure(s)   | Key Performance<br>Indicator (KPI)  | Implementation<br>Responsibility | Resources | Timeline |
|--------|--------|---|---|----------------------------------|-----------|----------|
|        |        | that may be found on and around the site.   | vegetation removal or cutting down of trees.  |                                  |           |          |
|        |        | <ul> <li>-Access roads (even existing ones) should be utilized appropriately in a manner that disturbs minimal land areas as possible, to minimize faunal habitat destruction.</li> <li>-Any faunal breeding sites discovered on the site should not be disturbed.</li> <li>-Environmental awareness on the importance of faunal preservation should be provided to the workers and contractors.</li> </ul> | No complaints of<br>wildlife hunting by the<br>project personnel.<br>No intentional<br>disturbance and<br>destruction of site<br>vegetation and faunal<br>species<br>Visible preservation of<br>onsite vegetation |                                  |           |          |
|        |        | Flora:<br>-The Proponent should avoid<br>unnecessary removal of<br>vegetation.<br>-Vegetation found on the site, but<br>not in the targeted exploration<br>areas should not be removed but<br>left to preserve biodiversity on the<br>site.<br>-Movement of vehicle and<br>machinery should be restricted to<br>existing roads and tracks to<br>prevent unnecessary damage to<br>vegetation.                |   |                                  |           |          |

| Aspect          | Impact                         | Management and Mitigation<br>Measure(s)   | Key Performance<br>Indicator (KPI)   | Implementation<br>Responsibility | Resources  | Timeline   |
|-----------------|--------------------------------|---|--|----------------------------------|--|--|
|                 |                                | -Design access roads<br>appropriately in a manner that<br>disturbs as little vegetation as<br>possible.   |  |                                  |  |  |
|                 |                                | -Vegetation clearing to be kept to<br>a minimum. The vegetation of the<br>site is largely low and open and<br>therefore whole-sale vegetation<br>clearing should only be applied<br>where necessary and within the<br>EPL footprint.  |  |                                  |  |  |
|                 |                                | -Vegetation found on the site, but<br>not in the targeted areas should<br>not be removed but left to preserve<br>biodiversity on the site.  |  |                                  |  |  |
|                 |                                | -Environmental awareness on the<br>importance of floral biodiversity<br>preservation should be provided to<br>the workers and contractors.  |  |                                  |  |  |
| Illegal hunting | Illegal hunting<br>of wildlife | <ul> <li>-No wildlife hunting is permitted.</li> <li>-Site personnel should refrain from killing/poaching or intentionally disturbing wildlife, or any faunal species found on site and around the EPL site.</li> <li>-The No tolerance to Poaching Policy should be developed and applicable to all site personnel.</li> </ul> | <ul> <li>-Incident reports of<br/>illegal hunting of<br/>wildlife by the Project<br/>workers</li> <li>-Contact details of the<br/>Anti-poaching Police<br/>Unit provided and<br/>visible onsite</li> </ul> | ECO                              | Complaint's logbook<br>-Anti-poaching Police<br>Unit<br>-ECO | During site set<br>up, and<br>throughout<br>exploration<br>phase |

| Aspect              | Impact  | Management and Mitigation<br>Measure(s)  | Key Performance<br>Indicator (KPI)  | Implementation<br>Responsibility | Resources  | Timeline  |
|---------------------|---|--|---|----------------------------------|--|---|
| Land Use            | Conflict<br>between land<br>uses and<br>exploration<br>activities | <ul> <li>Exploration activities should not<br/>in any way hinder the existing land<br/>uses within the EPL, but rather<br/>promote co-existence throughout<br/>the project operations while<br/>respecting other land users.</li> <li>The project workers and vehicles<br/>should be limited to the actual EPL<br/>active sites, and not unnecessarily<br/>wander or loiter around other parts<br/>of the site.</li> <li>The Proponent should ensure<br/>that their activities comply with the<br/>conditions set by the competent,<br/>regulatory, and affected<br/>authorities such that the proposed<br/>exploration activities do not<br/>severely impact the different<br/>existing activities around the EPL.</li> </ul> | Land access and use<br>permits/authorizations.<br>Compliance with<br>conditions set within<br>operational permits by<br>relevant and affected<br>authorities.<br>Little to no complaints<br>of significant<br>interference from the<br>neighbouring land<br>users | PRO<br>Proponent<br>ECO          | Proponent<br>Relevant authorities<br>(MEFT, MME, etc.)                                     | Throughout the<br>exploration<br>phase  |
| Road use and safety | Increase in<br>vehicular traffic<br>flow                          | <ul> <li>-Vehicles should be driven only on<br/>existing access roads and the<br/>temporary access roads created<br/>on site to facilitate operations; no<br/>new roads should be constructed,<br/>where possible.</li> <li>-The transportation of project<br/>materials, equipment and<br/>machinery should be kept at a<br/>minimum, to reduce pressure on</li> </ul>  | No complaints from<br>members of the public<br>regarding vehicular<br>traffic issues related to<br>the project activities.<br>All personnel operating<br>the project vehicles<br>and machinery are<br>appropriately licensed                                      | Proponent                        | Number of project<br>vehicles on site<br>Names of drivers<br>Frequency of water<br>carting | Throughout<br>exploration<br>phase<br>Site access<br>permit (s) to be<br>applied for and<br>obtained prior to<br>commencement |

| Aspect                                  | Impact                  | Management and Mitigation<br>Measure(s)   | Key Performance<br>Indicator (KPI)   | Implementation<br>Responsibility    | Resources                                   | Timeline  |
|---|-------------------------|---|--|-------------------------------------|---|---|
|   |                         | <ul> <li>-Heavy truck loads should comply<br/>with the maximum allowed limit<br/>while transporting materials and<br/>equipment/machinery on the<br/>public and access roads.</li> <li>-Drivers of all project vehicles<br/>should be in possession of valid<br/>and appropriate driving licenses.</li> </ul>                                     | and possession of valid<br>driving licenses.<br>Demarcated areas for<br>parking, offloading,<br>and loading zones are<br>on sites.       |                                     |   | of exploration<br>works                                   |
|   |                         | Vehicle drivers should adhere to<br>the road safety rules.<br>-Drivers should drive slowly<br>(30km/hour or less), and be on the<br>lookout for livestock, wildlife and<br>pedestrians.<br>-Project vehicles should be in a<br>road worthy condition and<br>serviced regularly to avoid<br>accidents because of mechanical<br>faults of vehicles. | If required, site access<br>road permits obtained,<br>and requirements<br>fulfilled.<br>No creation of<br>unnecessary tracks on<br>site. |                                     |   |   |
| Local services<br>and<br>infrastructure | Overuse and maintenance | -The heavy trucks transporting<br>materials and services to site<br>should be scheduled to travel<br>minimally and at efficiently<br>scheduled times to avoid daily<br>travelling to site, unless on cases<br>of emergencies.<br>The heavy trucks transporting<br>materials and services to site<br>should be scheduled to travel at              | -Visible efforts of<br>maintaining access<br>and community roads<br>by the Proponent   | Proponent<br>Exploration<br>Manager | Road clearing<br>machinery (bull<br>dozers) | Throughout the<br>exploration<br>phase, when<br>necessary |

| Aspect               | Impact   | Management and Mitigation<br>Measure(s)   | Key Performance<br>Indicator (KPI)                             | Implementation<br>Responsibility | Resources   | Timeline   |
|----------------------|--|---|--|----------------------------------|---|--|
| Occupational         | General health   | least twice or thrice a week to<br>avoid daily travelling to site<br>-The Proponent should consider<br>frequent maintenance of local<br>roads to ensure that the roads are<br>in a good condition for other roads<br>users.   | Comprehensive health   | Proponent                        | Occupational Health   |  |
| Health and<br>safety | and safety<br>associated<br>with project<br>activities in<br>both phases | <ul> <li>-As part of their induction, project workers should be provided with awareness training of the risks of mishandling equipment and materials on site, as well as health and safety risk associated with their respective jobs.</li> <li>-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.</li> <li>-Heavy vehicle, equipment and fuel storage site should be properly secured, and appropriate warning signage placed where visible.</li> <li>-Drilled boreholes no longer in use or to be used later after being drilled should be properly marked for visibility and capped/closed off.</li> </ul> | and safety plan for all<br>exploration activities<br>compiled. | Exploration<br>Manager<br>ECO    | and Safety Personnel<br>Health and Safety<br>Trainings<br>First aid kits<br>Trained worker to<br>administer first aid | Throughout the<br>exploration<br>phase and<br>trainings offered<br>as and when<br>required |

| Aspect | Impact                      | Management and Mitigation<br>Measure(s)   | Key Performance<br>Indicator (KPI)                       | Implementation<br>Responsibility | Resources   | Timeline                           |
|--------|-----------------------------|---|--|----------------------------------|---|------------------------------------|
|        |                             | <ul> <li>Ensure that after completion of drilling, the exploration drill cuttings are put back into the holes, and the holes filled and levelled.</li> <li>An emergency preparedness plan should be compiled, and all personnel appropriately trained.</li> <li>Workers should not be allowed to consume intoxicants prior to and during working hours, or allowed on site when under the influence, as this may lead to mishandling of equipment, resulting in injuries and other health and safety risks.</li> <li>The site is to be equipped with</li> </ul> |  |                                  |   |                                    |
|        |                             | cautionary signs at any potential danger or risk area identified on site.   |  |                                  |   |                                    |
|        | Accidental fire<br>outbreak | -Portable fire extinguishers should<br>be provided on site.   | No wildfires recorded<br>(due to presence of<br>workers) | Proponent                        | Fire extinguishers (1<br>per vehicle) and 1 per<br>working site | Throughout<br>exploration<br>phase |
|        |                             | <ul> <li>-No open fires to be created by<br/>project personnel on site.</li> <li>-Potential flammable areas and<br/>structures such as fuel storage<br/>tanks should be marked with<br/>clearly visible signage.</li> </ul>   |  | ECO                              |   |                                    |

| Aspect                      | Impact  | Management and Mitigation<br>Measure(s)  | Key Performance<br>Indicator (KPI)   | Implementation<br>Responsibility | Resources                          | Timeline  |
|-----------------------------|---|--|--|----------------------------------|------------------------------------|---|
| Archaeology<br>and heritage | Accidental<br>disturbance<br>and<br>destruction of<br>archaeological<br>or heritage<br>objects and<br>sites | -A "No-Go-Area" should be put in<br>place where there is evidence of<br>archaeological site, historical, rock<br>paintings, cave/rock shelter or<br>past human dwellings. It can be a<br>demarcation by fencing off or<br>avoid the site completely by not<br>working closely or near the known<br>site. | -Preservation of all<br>artefacts and objects<br>that are discovered on<br>and around project site<br>-No-Go Areas avoided | Proponent                        | Salvage equipment<br>Archaeologist | As and when<br>required, i.e.,<br>prior to site set<br>up, and during<br>exploration. |
|                             |   | -On-site personnel and contractor<br>crews must be sensitized to<br>exercise and recognize "chance<br>finds heritage" in the course of<br>their work.  |  |                                  |                                    |   |
|                             |   | -During the prospecting and<br>exploration works, it is important to<br>take note and recognize any<br>significant material being<br>unearthed and making the correct<br>judgment on which actions should<br>be taken (refer to CFP Appendix<br>attached to the EMP).                                    |  | ECO                              |                                    |   |
|                             |   | -The footprint impact of the<br>proposed prospecting and<br>exploration activities should be<br>kept to minimal to limit the<br>possibility of encountering chance<br>finds within the EPL boundaries.<br>The Proponent should keep a<br>buffer of 50 meters on all the                                  |  | Operator                         |                                    |   |
|                             |   | archaeological/cultural sites  |  | Foreman                          |                                    |   |

| Aspect | Impact | Management and Mitigation<br>Measure(s)  | Key Performance<br>Indicator (KPI) | Implementation<br>Responsibility | Resources                                     | Timeline |
|--------|--------|--|------------------------------------|----------------------------------|---|----------|
| Aspect | Impact | Measure(s)observed within the project site<br>and broader area throughout their<br>stay (duration of their presence) in<br>the areaA landscape approach of the site<br>management must consider<br>culture and heritage features in the<br>overall planning of exploration<br>infrastructures within and beyond<br>the license boundariesThe Proponent and Contractors<br>should adhere to the provisions of<br> |                                    | -                                | Resources<br>Flag tapes<br>GPS (site marking) | Timeline |
|        |        | moving activities that may be<br>implemented as part of the<br>proposed project activities.  |                                    |                                  |   |          |

| Aspect  | Impact                     | Management and Mitigation<br>Measure(s)   | Key Performance<br>Indicator (KPI)   | Implementation<br>Responsibility | Resources                   | Timeline                           |
|---|----------------------------|---|--|----------------------------------|-----------------------------|------------------------------------|
|   |                            | <ul> <li>-During removal of topsoil and subsoil at exploration sites, the sites should be monitored for subsurface archaeological materials by a qualified Archaeologist.</li> <li>-Show overall commitment and compliance by adapting "minimalistic or zero damage approach".</li> <li>-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 artefacts such as stone tools and other buried materials etc.</li> </ul> |  |                                  |                             |                                    |
| Littering and<br>waste<br>management<br>(general waste<br>and sanitation) | Environmental<br>Pollution | <ul> <li>-Workers should be sensitized to dispose of waste in a responsible manner and not litter.</li> <li>-After each daily works, the Proponent should ensure that there is no waste left on the site.</li> </ul>  | No visible litter around<br>the project area<br>Provision of sufficient<br>waste storage<br>containers | ECO                              | Waste storage<br>containers | Throughout<br>exploration<br>phase |

| Aspect | Impact | Management and Mitigation<br>Measure(s)  | Key Performance<br>Indicator (KPI) | Implementation<br>Responsibility | Resources  | Timeline |
|--------|--------|--|------------------------------------|----------------------------------|--|----------|
|        |        | -All domestic and general project<br>waste produced daily should be<br>contained until such that time it will<br>be transported to designated<br>waste sites in nearby town. | Waste management<br>awareness      |                                  | Waste disposal<br>permits to<br>municipalities               |          |
|        |        | -No waste may be buried or burned on site or anywhere else.  |                                    |                                  | Environmental, Health<br>and Safety<br>Statements and Policy |          |
|        |        | -The exploration site should be<br>equipped with separate waste bins<br>for hazardous and<br>general/domestic waste.   |                                    |                                  |  |          |
|        |        | -Sewage waste should be stored<br>as per the available sanitation<br>system supplied on site and<br>regularly disposed of at the<br>nearest treatment facility               |                                    |                                  |  |          |
|        |        | -Oil spills should be taken care of<br>by removing and treating soils<br>affected by the spill.  |                                    |                                  |  |          |
|        |        | -A penalty system for irresponsible<br>disposal of waste on site and<br>anywhere in the area should be<br>implemented.   |                                    |                                  |  |          |
|        |        | -Careful storage and handling of<br>hydrocarbons on site is essential,<br>therefore should be enforced.  |                                    |                                  |  |          |
|        |        | -Potential contaminants such as<br>hydrocarbons and wastewater<br>should be contained on site and<br>disposed of in accordance with  |                                    |                                  |  |          |

| Aspect      | Impact  | Management and Mitigation<br>Measure(s)  | Key Performance<br>Indicator (KPI)  | Implementation<br>Responsibility | Resources                                      | Timeline                           |
|-------------|---|--|---|----------------------------------|--|------------------------------------|
|             |   | municipal wastewater discharge<br>standards so that they do not<br>contaminate surrounding soils and<br>eventually groundwater.  |   |                                  |  |                                    |
|             |   | -An emergency plan should be<br>available for major/minor spills at<br>the site during exploration (with<br>consideration of air, groundwater,<br>soil, and surface water) and during<br>the transportation of the product(s)<br>to the sites. |   |                                  |  |                                    |
|             | Wastewater<br>generated by<br>exploration<br>workers living<br>on-site. | <ul> <li>Provision of toilet facilities for<br/>workers (mobile/portable chemical<br/>toilet if possible).</li> <li>Emptying of chemical toilets<br/>according to the manufacturer's<br/>specifications.</li> </ul>                            | Adequate toilet and basic ablution facilities on site.                              | Proponent                        | Chemical toilets<br>Sewage removal<br>operator | Throughout<br>exploration<br>phase |
|             |   |  |   |                                  | waste treatment<br>agents/chemicals            |                                    |
| Air Quality | Dust<br>generation  | -Exploration vehicles should not<br>drive at a speed more than 30<br>km/h, to avoid dust generation<br>around the area.  | No complaints from the<br>public about vehicle<br>emissions and dust<br>generation. | ECO                              | Complaint's logbook                            | Throughout<br>exploration<br>phase |
|             |   | -Dust control measures may be<br>considered to suppress dust, in<br>the event that there are local   | Visible efforts to curb<br>dust   |                                  | (Water)  |                                    |

| Aspect | Impact   | Management and Mitigation<br>Measure(s)  | Key Performance<br>Indicator (KPI)  | Implementation<br>Responsibility | Resources  | Timeline                           |
|--------|----------|--|---|----------------------------------|--|------------------------------------|
|        |          | complaints of high levels of dust generation.  |   |                                  |  |                                    |
|        |          | -Dust masks, eye protective<br>glasses and other respiratory<br>personal protective equipment<br>(PPE) such as face masks should<br>be provided to the workers on site<br>drilling areas, where they are<br>exposed to dust.<br>-Excavating equipment should be<br>regularly maintained to ensure<br>drilling and excavation efficiency<br>and so to reduce dust generation<br>and harmful gaseous emissions.  |   |                                  |  |                                    |
| Noise  | Nuisance | <ul> <li>-Noise from project vehicles and equipment on the working sites of the EPL should be at acceptable levels.</li> <li>-Exploration hours should be restricted to between 08h00 and 17h00, or at the times agreed upon in writing between the Proponent and landowners, in order to avoid noise pollution and vibrations generated by exploration equipment before or after hours, as agreed upon.</li> <li>-When operating the drilling machinery onsite, workers should be equipped with personal</li> </ul> | Complaints from<br>landowners and<br>neighbouring land<br>users about excessive<br>noise. | ECO                              | Complaint's logbook<br>Noise protective<br>equipment for workers | Throughout<br>exploration<br>phase |

| Aspect          | Impact   | Management and Mitigation<br>Measure(s)   | Key Performance<br>Indicator (KPI)  | Implementation<br>Responsibility | Resources  | Timeline                               |
|-----------------|--|---|---|----------------------------------|--|--|
|                 |  | <ul> <li>protective equipment (PPE) such as earplugs to reduce exposure to noise.</li> <li>-All drilling activity and noise-producing activity on site must be schedule and conducted with consideration for the tranquility of any nearby residents.</li> </ul>  |   |                                  |  |  |
| Social nuisance | Local<br>properties<br>disturbance<br>and values | <ul> <li>The Proponent should inform their workers on the importance of respecting the landowners' properties by not trespassing or vandalizing houses and fences or snaring and killing livestock and wildlife.</li> <li>Any workers or site employees found guilty of intruding 'private property should face disciplinary or be dealt with as per their employer' (Proponent)'s code of employment conduct</li> <li>The project workers should be advised to respect the community and local's private property, values, and norms.</li> <li>No worker should be allowed to wander in private yards or fences without permission.</li> </ul> | No complaints from<br>landowners about<br>property theft,<br>disturbance, or<br>intrusion | ECO                              | Grievance logbook<br>Land access<br>agreement conditions | Throughout the<br>exploration<br>phase |

| Aspect         | Impact                                 | Management and Mitigation<br>Measure(s)  | Key Performance<br>Indicator (KPI)   | Implementation<br>Responsibility | Resources  | Timeline   |
|----------------|--|--|--|----------------------------------|--|--|
|                |  | <ul> <li>Workers are not allowed to kill or<br/>in any way disturb local livestock<br/>and wildlife.</li> <li>No worker should, without<br/>permission, cut down or damage<br/>trees belonging to landowners</li> </ul>  |  |                                  |  |  |
|                | <b></b>                                | PROGRESSIVE REHABILI   | TATION AND DECOMMIS  | SIONING PHASE                    |  |  |
| Rehabilitation | Disturbance<br>and damaging<br>of land | <ul> <li>-All drilled boreholes related to the project activities should be capped and backfilled, respectively.</li> <li>-All waste generated and stored on site during exploration activities should be disposed of at the respective nearest solid waste management sites.</li> <li>-The stockpiled topsoil should be levelled soon after completion of works at sites.</li> <li>-Any temporary setup on site should be dismantled, and the area rehabilitated as far as practicable, to its original state.</li> <li>-Explored areas on worksites should be progressively rehabilitated by d backfilling.</li> <li>-Provision of both financial and technical resources for progressive rehabilitation.</li> </ul> | Capped boreholes and<br>backfilled pits<br>No sign of waste or<br>littering seen on site<br>and around site areas.<br>Carrying away of<br>waste, and removal of<br>vehicles and<br>equipment from site<br>No stockpiled topsoil<br>(topsoil is levelled after<br>completion of each<br>work) | Proponent                        | Excavators and other<br>backfilling/demolishing<br>machinery<br>Record of boreholes<br>drilled (if any)<br>Waste containers on<br>sites<br>Photo records of<br>backfilled sites<br>Records of finances<br>set aside for<br>decommissioning<br>activities | Progressive<br>rehabilitation<br>done<br>throughout the<br>exploration<br>phase and<br>complete<br>decommission<br>and<br>rehabilitation<br>done after<br>completion of<br>exploration<br>works. |

| Aspect Impact | Management an<br>Measure(s) | nd Mitigation | Key Performance<br>Indicator (KPI)  | Implementation<br>Responsibility | Resources | Timeline |
|---------------|-----------------------------|---------------|---|----------------------------------|-----------|----------|
|               |                             |               | Campsite dismantled<br>and materials taken<br>away from site.<br>Visible signs of<br>stockpiled topsoil |                                  |           |          |

# 4.4 Monitoring Action Plans (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 plan recommended for proposed exploration works are presented in **Table 4** below.

| Table 4 | Monitoring | Action Plan |
|---------|------------|-------------|
|---------|------------|-------------|

| Environmental<br>Feature | Impact          | Monitoring Actions                       | Implementation responsibility | Frequent | Threshold         | Action if threshold is exceeded |
|--------------------------|-----------------|--|-------------------------------|----------|-------------------|---------------------------------|
| Archaeology              | Presence or     | -To prevent destruction of artefacts and | ECO                           | Daily    | Unearthing of     | Cease all activities on         |
| and Heritage             | unearthing of   | sites, the preservation of all artefacts | Archaeologist                 |          | archaeological or | site and wait for NHC           |
|                          | archaeological  | and sites that are discovered within the | Archaeologist                 |          | cultural heritage | to inspect site and give        |
|                          | or cultural     | site boundary or around the project site |                               |          | resources         | further instructions /          |
|                          | heritage        | area should be effectively done.         |                               |          |                   | actions                         |
|                          | resources       | -Inspect records of findings.            |                               |          |                   |                                 |
| Soils                    | Loss of topsoil | -All measures should be considered to    | ECO and                       | weekly   | Proliferation of  | Rehabilitation of               |
|                          |                 | present the loss of topsoil              | Exploration                   |          | new vehicle       | affected areas                  |
|                          |                 |  | Manager                       |          | tracks            |                                 |

| Environmental<br>Feature | Impact                                 | Monitoring Actions   | Implementation responsibility            | Frequent     | Threshold   | Action if threshold is exceeded                                       |
|--------------------------|--|--|--|--------------|---|---|
| Monitoring               | EMP non-<br>compliance                 | -The ECO or the Proponent/Contractor<br>should monitor the implementation of<br>this EMP to ensure compliance.<br>The ECO(s) should inspect the site<br>throughout the exploration period and<br>after completion.   | ECO                                      | Daily        | Increase in<br>health, safety and<br>environmental<br>damage<br>incidence | Daily safety talks,<br>Remedy the<br>consequences                     |
| Biodiversity             | Loss of<br>biodiversity                | <ul> <li>-Comply with any marked no-go areas<br/>and avoid areas sensitive to any type of<br/>disturbance.</li> <li>-Clear only footprint areas to maintain<br/>as much of the remaining natural<br/>vegetation on site and to prevent loss of<br/>habitat (if so, advised by MEFT).</li> </ul>  | ECO<br>Workers involved in<br>this phase | Weekly       | Vegetation<br>clearance outside<br>of marked areas.                       | Rehabilitation of<br>affected areas to the<br>satisfaction of the ECO |
| Health and<br>Safety     | Health and<br>safety of the<br>workers | <ul> <li>Workers should be trained on how to handle materials and equipment on site (if they do not already know how to) to avoid injuries.</li> <li>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.</li> </ul> | ECO<br>Worker Involved in<br>this phase  | Daily/Weekly | Health and safety<br>incident   | Remedy the<br>consequences  |

| Environmental<br>Feature | Impact        | Monitoring Actions                      | Implementation responsibility | Frequent | Threshold       | Action if threshold is exceeded |
|--------------------------|---------------|---|-------------------------------|----------|-----------------|---------------------------------|
|                          |               | - All personnel are to be provided with |                               |          |                 |                                 |
|                          |               | appropriate personal protective         |                               |          |                 |                                 |
|                          |               | equipment (PPE), always during          |                               |          |                 |                                 |
|                          |               | exploration hours on site to prevent    |                               |          |                 |                                 |
|                          |               | serious injuries or loss of life.       |                               |          |                 |                                 |
|                          |               | -Workers should not be allowed to       |                               |          |                 |                                 |
|                          |               | consume intoxicants prior to and during |                               |          |                 |                                 |
|                          |               | working hours, as this may lead to      |                               |          |                 |                                 |
|                          |               | mishandling of equipment, which may     |                               |          |                 |                                 |
|                          |               | result in injuries and other health and |                               |          |                 |                                 |
|                          |               | safety risks.                           |                               |          |                 |                                 |
| Neighbouring             | Disturbance   | Exploration works schedule should be    | ECO                           | Weekly   | A logged        | Revision of site                |
| land users to            |               | limited to normal working hours,        |                               |          | complaint about | activities                      |
| the site                 |               | between 08h00 and 17h00. This is to     |                               |          | excessive noise |                                 |
|                          |               | ensure generated noise does not         | Exploration                   |          |                 |                                 |
|                          |               | become nuisance to the neighbors.       | Manager                       |          |                 |                                 |
| Waste                    | Environmental | -The site should be always kept tidy.   | ECO                           | Daily    | Visible litter  | Clean-up of the                 |
|                          | Pollution     | -All domestic and general construction  |                               |          | around project  | affected areas and              |
|                          |               | waste produced daily should be          |                               |          | site            | ensuring exploration            |
|                          |               | cleaned and contained daily to prevent  |                               |          | A logged        | workers utilise waste           |
|                          |               | environmental pollution.                |                               |          | complaint       | containers provided.            |
|                          |               | -Separate waste containers (bins) for   |                               |          |                 |                                 |
|                          |               | hazardous and domestic / general        | All workers involved          |          |                 |                                 |
|                          |               | waste must be provided on site to avoid | in this phase.                |          |                 |                                 |
|                          |               | mixing of waste.                        |                               |          |                 |                                 |

| Environmental<br>Feature | Impact         | Monitoring Actions                      | Implementation responsibility | Frequent | Threshold           | Action if threshold is exceeded |
|--------------------------|----------------|---|-------------------------------|----------|---------------------|---------------------------------|
| Transport                | Transportation | -Project workers must be transported in | ECO                           | Daily    | A logged            |                                 |
|                          | of workers to  | suitable passenger vehicles to and from |                               |          | complaint about     |                                 |
|                          | and from site  | site to ensure workers safety.          |                               |          | bad form of         |                                 |
|                          |                |   |                               |          | transport affecting |                                 |
|                          |                | -No off-road driving                    |                               |          | occupational        |                                 |
|                          |                |   |                               |          | safety and health   |                                 |
|                          |                |   |                               |          | of workers          |                                 |
| Vehicular traffic        | Increase in    | -All drivers of the project vehicles    | ECO                           | Weekly   | A logged            | Find alternative                |
| safety                   | local traffic  | should be in possession of valid and    |                               |          | complaint about     | access roads for the            |
|                          | flow.          | appropriate driving licenses to operate |                               |          | traffic increase or | team. Rehabilitation of         |
|                          |                | such vehicles.                          |                               |          | damage to roads     | affected roads                  |
|                          |                | -Project vehicles must 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.           |                               |          |                     |                                 |

#### 4.5 Decommissioning and Rehabilitation

Successful rehabilitation requires thorough planning that takes into account the local ecological context and rehabilitation goals. The process starts with environmental awareness and education on the importance of progressive or post-activity rehabilitation. Factors influencing the success of rehabilitation include the rehabilitation program, site characteristics, nature of disturbance, rehabilitation methods, and resource availability. By considering these factors and developing an appropriate rehabilitation plan, effective restoration of the environment can be achieved.

Rehabilitation of the EPL site may include the re-vegetation of areas with species consistent with surrounding vegetation, refilling of trenches in such a way that subsoil is replaced first, and topsoil replaces last, and where necessary, revegetation of the sites, if clearing has widely occurred due to exploration activity.

#### Site Specific Rehabilitation Plan

To ensure that they do their best to rehabilitate the disturbed areas, the Proponent needs 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.
- Backfill all pits and trenches.
- Level topsoil that was stockpiled for exploration purposes.
- Remove project vehicles and equipment from the site and taken to designated parking facility off site.
- All project support structures such as ablution facilities (toilet and washroom system), and storage containers/tanks shall be demolished, and the waste taken to designated waste sites. The site areas on which these structures were set up will be rehabilitated to preexploration state.
- All accumulated waste (hazardous, solid, and general) up until the cessation of exploration activities must be removed site and transported to designate off site waste management facilities.

#### **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 / 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.