Environmental and Social Management Plan (ESMP)

CONSTRUCTION OF A SMALL-SCALE SPONGE COPPER PRODUCTION PLANT

KARIBIB INDUSTRIAL AREA, PLOT 57, KARIBIB CONSTITUENCY, ERONGO REGION

(NAMIBIA)

PROJECT PROPONENT

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1. INTRODUCTION

With the continuous growth of global copper resource demand, the efficient utilization of low-grade copper oxide ore has become an important issue in the metallurgical field. Sponge copper, as an important copper intermediate product, is widely used in electronics, chemical industry and other industries. This project will deploy an economical and efficient technological process for producing sponge copper from low-grade copper oxide ore, so as to improve resource utilization and reduce production costs.

At present, copper oxide ore resources are widely distributed but generally of low grade. Traditional pyrometallurgical smelting has high energy consumption and heavy pollution, while hydro-metallurgical technology has attracted much attention due to its environmental friendliness and adaptability to low-grade ore. Through systematic optimization of each link of the process, this project has established a complete hydro-metallurgical technical route for producing sponge copper, providing a reliable reference for industrial application.

HJ Gold Bay Investment (Pty) Ltd and Legend Nafuka Mining and Trading CC have together to developed an economical and efficient technological process for producing sponge copper from low grade copper oxide ore. Generally, the copper ore in Namibia is very poor, hence need very large plants to process it.

Moreover, this processing plant will also provide processing services for legally sourced low-grade ore from small-miners in the surrounding areas, increasing the income of small-miners with low-grade solutions. The processing of legally sourced ore will enhance the value of low-grade oxidized ore. It will also offer beneficiation tests for large-scale exploration projects of exploration companies, reducing the cost of beneficiation tests.

The objective is to create a market hub within the town and constituency by buying ore from the local community members and then process. HJ Gold Bay Investment (Pty) Ltd commits to uphold its social responsibilities towards the Karibib Town Council.

The construction of this plant will contribute to poverty alleviation as outlined in NDP6 and Harambee Prosperity Plan (HPP). The construction and operations of the plant will provide jobs to the surrounding communities, create new markets for small-miner, and will also create new business opportunities for local logistic companies. Overall, the Karibib Town Council benefit through increased business activities within its townlands.

Trinity Environmental Solutions (TES) was appointed by HJ Gold Bay Investment (Pty) Ltd to conduct an independent Environmental Impact Assessment (EIA) for the proposed development. In terms of

Namibia's Environmental Management Act (No. 7 of 2007, Section 27), Government Notice No. 29 (Listed Activities) and Government Notice No. 30 (EIA Regulations), the above proposed activity constitutes a number of listed activities which require Environmental Clearance prior to commencement of the project.

1.1 Objectives

The Environmental and Social Management Plan (**ESMP**) will form the basic tool for reducing the magnitude of impacts and suggesting practical measures to attain this. It is also used to measure compliance by the relevant Authorities. It is this tool that gives guidance during monitoring, auditing and taking corrective actions during its implementation, thereby ensuring continuous monitoring of the environment. It can also be drawn after the authorisation by the Competent Authority, to incorporate the conditions of the authorisation to reach environmental and social sustainability during project construction and operational phases.

The objectives of the ESMP are to:

- Promote sustainable development by encouraging conservation and mitigation of significant negative impacts to the natural and social environments.
- Inform the various stakeholders of their roles and responsibilities regarding environmental management in the project.
- Identify specific actions to be taken by the various stakeholders in order to prevent or minimise negative significant impacts to the natural and social environments.
- Identify laws, regulations and standards that are applicable to the environmental management of this project.
- Describe monitoring and verification procedures to be employed by the Environmental Manager to ensure that the Contractors and staff members comply with all requirements of the ESMP during construction and operational phases.

This ESMP should be read with the Scoping Report, especially with Chapter 5 of the Scoping Reporting.

1.2 Summary of the types of construction work

Application for the Environmental Clearance from the Directorate of Environmental Affairs and Forestry (DEAF) is being made for the Construction of a Small-Scale Sponge Copper Production Plant on a 2.4 ha of industrial zone within the Karibib Townlands, on Plot No. 57.

The approximate GPS coordinates of Plot No. 57 are S -21.961071° E 15.844393°

The physical footprint of the project will be on a 2.4 ha area, zoned for industrial activities in Karibib Town, about 2km south of Karibib along the C 32 road.

The overall project will include the following activities below (see Figure 1 below):

Construction works envisaged will include:

a) Earth works to dig out ponds [each 12m width (or 6m width) x 25m long x1.5m deep] for leaching, processing, and dewatering & drying of materials.
b) Installation of short-term chemicals storage tanks.
c) Installation of water tanks.
d) Installation of sponge copper settling tanks.
e) Installation of in-situ mixing and vibrating mill.

Operations/production activities will include:

a) Transporting crashed low-grade copper ore from mining site (±30km away) to processing plant in Karibib.
b) Storage of ore and depositing into ponds for processing.
c) Leaching process and condition control.
d) Purification and solution treatment system: The leach-ate contains impurities such as (Iron) Fe and (Aluminum) Al, which need to be purified by neutralization precipitation, solvent extraction or ion exchange.
e) Reduction process and sponge copper generation.
f) Product (sponge copper) treatment and quality control.
g) Waste treatment and resource utilization (reuse)

Figure 1: Plant Design and Copper Ore Processing Flow

2. LEGISLATIVE FRAMEWORK

The environmental impacts associated with the construction of the proposed Plant required to be investigated in compliance with the Environmental Impact Assessment (**EIA**) Regulations published in Government Notice No. 30 of 2012 read with Section 27 of the Environmental Management Act, 2007 (Act No. 7 of 2007).

The required environmental studies encompass the undertaking of a Basic Assessment. This study was undertaken in two phases, an Environmental Scoping Study (**ESS**) Phase, which included stakeholders' engagements, and the compilation of an Environmental and Social Management Plan (ESMP). The ESS provided a record of all issues identified, evaluation of the significance of identified potential impacts and their mitigation in order to make recommendations regarding the required ESMP.

The proponent was therefore required to submit a report detailing the scoping phase (Scoping Report) and an ESMP. The competent authority will issue a decision subsequent to their review of the Scoping Report and ESMP.

Table 1, summarises the legislation and policy guidelines that are relevant to the proposed project and is not exhaustive.

Table 1: Relevant Legislation and Policy Guidelines

Title of legislation, policy or guideline	Implications for proposed project (Please read all Acts with their Regulations)
The Namibian Constitution of 1990	The Constitution clearly indicates that the State shall actively promote and maintain the welfare of the people by adopting policies aimed at management of ecosystems, essential ecological processes and biological diversity of Namibia for the benefit of all Namibians, both present and future.
Water Resources Management Act No. 11 of 2013	This Act protects all water resources in Namibia. The Act also laid down conditions to ensure that proper wastewater treatment is provided, including requirement for wastewater discharge permit from the Directorate of Water Affairs.
Environmental Assessment Policy of Namibia (1995)	The Policy seeks to ensure that the environmental consequences of development projects and policies are considered, understood and incorporated into the planning process, and that the term ENVIRONMENT is broadly interpreted to include biophysical, social, economic, cultural, historical and political components.
Environmental Management Act No. 7 of 2007	The Act provides a list of projects requiring an Environmental Assessment. It aims to promote the sustainable management of the environment and the use of natural resources and to provide for a process of assessment and control of activities which may have significant effects on the environment.
Minerals (Prospecting and Mining) Amendment Act 8 of 2008	The Act provides for the reconnaissance, prospecting and mining for, and disposal of, and the exercise of control over, minerals in Namibia; and to provide for matters incidental thereto.

Labour Act No. 11 of 2007)	Consolidate and amend the labour law; to establish a comprehensive labour law for all employers and employees; to entrench fundamental labour rights and protections; to regulate basic terms and conditions of employment; to ensure the health, safety and welfare of employees; to protect employees from unfair labour practices; to regulate the registration of trade unions and employers' organisations; to regulate collective labour relations; to provide for the systematic prevention and resolution of labour disputes; to establish the Labour Advisory Council, the Labour Court, the Wages Commission and the labour inspectorate; to provide for the appointment of the Labour Commissioner and the Deputy Labour Commissioner; and to provide for incidental matters.
Nature Conservation Ordinance Number 4 of 1975 (as amended)	Guide the conservation of nature; the establishment of game parks and nature reserves; the control of problem animals; and to provide for matters incidental thereto.
Public and Environmental Health Act, 2015 (Act No. 1 of 2015).	The Act provides a framework for a structured uniform public and environmental health system in Namibia; and to provide for incidental matters This Act makes provision for the prevention and control of infectious diseases, venereal diseases and epidemics. It also regulates sanitation, food and public water supplies.
MEFT Policy Document - Community-Based Tourism Development (June 1995)	This document contains the approved Ministry policy for providing support to, and encouraging the development of, community-run tourism activities and enterprises on communal land. This policy document provides a framework for ensuring that local communities have access to opportunities in tourism development and are able to share in the benefits of tourism activities that take place on their land. Support for the involvement of rural communities in tourism enterprises is important: a) to implement the government policy of giving communities access to development opportunities and b) because where tourism is linked to wildlife and wild landscapes, the benefits to local communities can provide important incentives for conservation of these resources.
Act No.5, 1996 Nature Conservation Amendment **ACT, 1996**	These amendments to the Nature Conservation Ordinance of 1975, provide for an economically based system of sustainable management and utilisation of game in communal areas. This amend allows for the formation of Conservancies in communal areas.
Hazardous Substances Ordinance No. 14 of 1974	The Ordinance applies to the manufacture, sale, use, disposal and dumping of hazardous substances, as well as their import and export. Its primary purpose is to prevent hazardous substances from causing injury, ill-health or the death of human beings. Hydrocarbons handled during the construction phase may be hazardous thus careful handling and management is vital to prevent spills, explosions, ill-health or death.
Pollution Control and Waste Management Bill of 1999	The Bill promotes sustainable development and the establishment of the Pollution Control and Waste Management Unit; to prevent and regulate the discharge of pollutants to the air, water and land; to make provision for the establishment of an appropriate framework for integrated pollution prevention and control; to regulate noise, dust and odour pollution; to establish a system of waste planning and management; and to enable Namibia to comply with its obligations under international law in this regard.

Draft Wetlands Policy of 2004	This policy strives to complement existing policy instruments regarding sustainable development and sound natural resource management in Namibia. Its implementation provides a platform for the conservation and wise use of wetlands, thus promoting inter-generational equity regarding wetland resource utilisation. Furthermore, it facilitates the Nation's efforts to meet its commitments as a signatory to the International Convention on Wetlands (Ramsar) and other Multinational Environmental Agreements (MEA's).
National Waste Management Policy, 2010	This policy is focusing specifically on Waste Management and use of various technologies waste treatment and disposal to minimize health risks. It is also geared to have a unified waste management system country wide. This policy provides the necessary guidance on the processes related to waste management in the MOHSS, wider Namibia health and social welfare sectors, and other relevant stakeholders. It is taking into consideration the process of integrated waste management from generation to final disposal. This practice also focus on medical, household, mining, agricultural, and construction waste.
Forest Act No. 12 of 2001 and its amendments	The purpose of this Act guides the use and management of forestry and related resources. The aims of the forest management as per the Act, is to achieve manage of forest "for which forest resources are managed and developed, including the planting of trees where necessary, to conserve soil and water resources, maintain biological diversity and to use forest produce in a way which is compatible with the forest's primary role as the protector and enhancer of the natural environment."
National Heritage Act No. 27 of 2004	The Act provide for the protection and conservation of places and objects of heritage significance and the registration of such places and objects; to establish a National Heritage Council; to establish a National Heritage Register; and to provide for incidental matters.
Communal Land Reform Act 5 of 2002	This Act provides for the allocation of rights in respect of communal land; to establish Communal Land Boards; to provide for the powers of Chiefs and Traditional Authorities and boards in relation to communal land. The alignment of the development, use of water and siting of borrow pits, should consider provisions of this Act in terms of rights of communal people.
The Regional Councils Act No. 22 of 1992	This Act sets out the conditions under which Regional Councils must be elected and administer each delineated region. From a land use and project planning point of view, their duties include, as described in Section 28 "to undertake the planning of the development of the region for which it has been established with a view to physical, social and economic characteristics, urbanisation patterns, natural resources, economic development potential, infrastructure, land utilisation pattern and sensitivity of the natural environment." RC are import I&APs
Roads Ordinance No 17 of 1972	The Ordinance consolidates the laws relating to roads. **a)** Section 3.1 deals with width of proclaimed roads and road reserve boundaries. **b)** Section 27.1 is concerned with the control of traffic on urban trunk and main roads. **c)** Section 36.1 regulates rails, tracks, bridges, wires, cables, subways or culverts across or under proclaimed roads. **d)** Section 37.1 deals with infringements and obstructions on and interference with proclaimed roads.

3. ROLES AND RESPONSIBILITIES

The ESMP requires the involvement of multiple stakeholders: the Proponent (HJ Gold Bay), and the Contractor(s). The following are the responsibilities of the different key stakeholders:

3.1 HJ Gold Bay (HJGB)

The HJGB should visit the project site on a regular basis to perform compliance monitoring of the Contractor's operations to this ESMP and to other relevant Manuals, Conditions, Standards and Regulations. Any matters of non-compliance are communicated to the Contractor by the HJGB through the Site Manager.

The following are the responsibilities of the HJGB:

- HJGB appoints an Environmental Manager to conduct monthly compliance audits
- Review reports regarding the implementation of the ESMP.
- Give warnings and imposes fines and penalties on the Contractor if the Contractor neglects to implement the ESMP satisfactorily and other relevant conditions.
- Be familiar with all aspects of the Scoping Report and ESMP.
- Responsible for ensuring that the Contractor complies with this ESMP throughout the project life cycles.
- Review and approve the Contractor's Management Plan based on guidance provided by this ESMP.
- Monitor the Contractor's compliance to the ESMP on a regular basis.
- Discuss ESMP issues at every monthly site meeting with input provided by the HJGB, Contractor and other relevant stakeholders.
- Communicate to the Contractor, verbally and in writing, regarding any matters of non-compliance.
- Ensure that land areas are properly designated according to the approved site plans, including sensitive environments and "No-Go" areas.
- Undertake damage assessments where incidents, accidents and serious infringements have occurred.
- Inspect and approve all areas that have been rehabilitated by the Contractor.
- Review complaints received and issue instructions to the Contractor as necessary.
- Maintain a record of complaints from the public and communicate the complaints to the Contractor.
- Enforce temporary work stoppages where serious environmental or health & safety infringements and non-compliances have occurred.

3.2 Contractor (including Sub-Contractors)

The following are the responsibilities of the Contractor:

- Fully implement the conditions stipulated in the Authorisation and Record of Decision issued by Environmental Commissioner/Directorate of Environmental Affairs and Forestry (DEAF) and any other competent regulatory body having authority over the project or the activities concerned. Read this ESMP with Chapter 5 of the Scoping Report, fully implement the ESMP and ensure compliance throughout the project duration.
- Appoints an Environmental Control Officer or appoint such Officer to oversee all aspects of the ESMP and communicate with the HJGB on all ESMP-related issues.
- Prepare a Management Plan that includes Sub-Plans, Method Statements and drawings as described below in this ESMP.
- Prepare and submit a monthly report concerning environmental management and health and safety issues. The report contents will cover: any training performed; status of training received by all staff and sub-contractors; copies of the Contractor's weekly Site Inspection Forms; summary of any issues or incidents concerning environmental management or health & safety, and what the Contractor has done to address the issues and incidents that have been identified by the Contractor or by HJGB.
- Ensure that all employees and sub-contractors on site are informed about environmental and health & safety responsibilities, practices and procedures. Perform daily inspections to monitor environmental management and health & safety performance.
- Perform weekly inspections for which Site Inspection Forms must be completed, and submit the completed Forms to HJGB on a monthly basis.
- Notify the HJGB immediately in the event of any accident or infringements of the ESMP and ensure appropriate remedial action is taken. Notify HJGB at least 10 working days in advance of any activity s/he has reason to believe may have significant adverse environmental impacts (including impacts on the people/community/businesses), so that mitigatory measures may be implemented timeously.
- Maintain a register of environmental management, health & safety and HIV/AIDS training for site staff and sub-contractor's staff for the duration of the contract.
- Identification and enforcement of environmental "No-Go" areas (to be approved by HJGB).
- Ensure that stockpiles and construction waste is stored and disposed-off according to the relevant laws, policies and guidelines. Undertake rehabilitation of all areas affected by project activities to restore them to an acceptable state, as determined by HJGB.
- Develop and conduct training and awareness sessions regarding: environmental management practices and procedures for the project; health & safety issues, practices and procedures for the project, and; HIV/AIDS background, prevention, testing, treatment and counselling.

4. THE PROPONENT'S MANAGEMENT PLAN AND TRAINING

The PROPONENT (HJGB) shall PREPARE a ***Management Plan for all activities that could be potentially harmful to the people and the environment.*** The Management Plan shall consist of Sub-Plans and Method Statements related to: 1) environmental management, 2) waste management, 3) noise and vibration management, 4) health and safety, 5) recruiting and training workers, 6) site layout and management, and 7) site closure.

Please note: The above can be replaced with any industry's recognised guidelines and standards.

No operational work may commence until the Management Plan has been prepared and staff have received training on all aspects of the Management Plan. Where necessary, changes may be made to the Management Plan, Sub-Plans and Method Statements once construction and operations have commenced.

The Sub-Plan on environmental management shall include a list and location of all petroleum, lubricant, chemical (including acids), harmful and hazardous substances and materials on site. The Sub-plan shall describe the procedures for storage, handling, servicing and maintenance, disposal, and spillage and control procedures for these materials. The Sub-Plan shall describe how all staff and sub-contractors will be trained and informed about safety and health, environmental management issues and practices.

***PLEASE NOTE: No explosives and fires are allowed to be on site.**

The Environmental Management Sub-Plan shall specify:

- Provision of equipment to clean chemical spills and procedures to be followed in the case of chemical emergencies.
- Provision of fire suppression equipment (types, locations) and procedures to be followed in case of a fire anywhere on site.
- How to perform dust suppression on site and including when handling ore and tailings.
- All emergency telephone numbers and contact persons, and how this information will be kept up to date and posted at relevant locations at all times.

The Waste Management Sub-Plan shall specify:

- How waste management activities on site shall incorporate reduction, recycling, re-use and disposal of waste where appropriate.
- How to dispose of collected wastewater, including tailings and waste-ore.

- How all construction rubble and waste shall be removed from site upon completion of construction and operation activities to a licensed landfill site.

Note that a certificate of disposal might be required, if applicable.

The Noise and Vibration Management Sub-Plan shall specify how the Proponent will minimise noise and vibration through:

- Monitoring of noise and vibration levels.
- Working hours restrictions.
- Timing of delivery of copper ore.
- Vehicles and crushers having low noise emissions and complying with the National Regulations for noise and vibration level emissions.
- Regularly maintaining vehicles, machinery and equipment used on site
- Altering or enclosing equipment to reduce noise at the source, or to isolate it.

The Occupational Health, Wellness and Safety Sub-Plan shall identify potential health risks and hazards associated with the operational activities, and set out plans and procedures to minimise those risks, as well as emergency procedures to follow in the event of an **accident and incident**. The Sub-Plan shall describe how all staff and sub-contractors will be trained and informed about health and safety issues, and HIV/AIDS. The Sub-Plan shall specify:

- That the Proponent shall comply with Namibian health and safety laws, regulations and standards.
- Provision of first aid equipment and supplies (types, locations), and procedures to be followed in case of an injury, accident, incident or illness.
- All emergency telephone numbers and contact persons, and how this information will be kept up to date, posted at relevant locations at all times.

The Site Layout, Management and Closure Sub-Plan shall include:

- Site plans and written descriptions that show locations of, and provide details about, land areas to be cleared, fuel supplies, stockpile sites, offices, vehicle parking, access points, delivery points, equipment cleaning areas, lay-down areas, housing areas for personnel (incl. location of services, ablution facilities, eating areas, etc.), “No-Go” areas, etc.
- Details on the expected amount of project-related traffic, as necessary for materials hauling, construction, etc.
- Details of what is to be performed by the Contractor at site closure, such as: closure and rehabilitation of the landscape, temporary roads, removal of residual stockpiles and building material, removal of all temporary structures and services, etc.

The Proponent must conduct a comprehensive, induction awareness raising and training session. All personnel working on the project, including sub-contractor staff, shall be required to complete this induction session prior to starting work. The Proponent must keep a register with signatures from all who received the training. The induction session shall cover the following topics:

- Management Plan.
- Legal and statutory requirements.
- Concepts of due diligence and duty of care.
- Minimising potential impacts such as noise, vibration, air, soil and water quality.
- Location and protection of environmentally sensitive areas, e.g., protected trees, wetlands, power lines, water pipes, etc.
- Waste management and minimization.
- Washing, refuelling and maintenance of vehicles and equipment.
- Safe use of machinery, equipment and materials.
- Communication and stop work procedures.
- Emergency response procedures and contact arrangements in case of an environmental or safety incident and incident.
- Incident reporting procedures for environmental and safety/health incidents.
- HIV/AIDS awareness and prevention: information regarding preventative actions, access to contraceptives, access to testing, access to treatment, and access to counselling services.

The Proponent shall conduct additional training and awareness raising sessions on the topics covered in the induction session for any staff, including those of the Contractor or sub-contractors who did not attend the induction session.

The Proponent must demonstrate in each monthly report the status of training received for staff (and sub-contractor) member working on site.

5. COMMUNICATION, RECORD KEEPING, DOCUMENT CONTROL AND COMMUNITY RELATIONS

The Proponent will perform the following types of communication and record keeping:

- The Proponent shall ensure that all senior staff and sub-contractors are familiar with the contents of the ESMP, Scoping Report and Proponent's Management Plan.
- Keep record of significant incidents (e.g., spills, excessive fumes incidents, vibration impacts, complaints, and legal transgressions, as recorded in the Proponent's weekly Site Inspection Forms) as well as corrective and preventive actions taken.
- **The Proponent shall inform the Karibib Municipality immediately about any emergencies (including spillages) on site and along the transport routes**. The Proponent shall submit a full report on the handling of the emergency as soon as possible (i.e. within the following hours or days). The following details shall be discussed in the report:
  - Nature and cause of environmental damage.
  - Type of material spilled and volume spilled.
  - Description of clean-up activities, and restoration actions taken and/or to be taken.
- Keep a register of public complaints in which all complaints are recorded, as well as action taken.
- The Proponent shall notify the **Karibib Municipality** of any relevant complaints lodged by a third party and provide appropriate information for inclusion in the monthly environmental management and health & safety report.
- Keep records with signed attendance lists of all personnel and sub-contractor staff who attend training and awareness raising sessions conducted by the Proponent. This information is to be included in the monthly environmental and health & safety report. These reports must be available to the Competent Authorities and Karibib Municipality.
- Prepare a bi-annual written report that provides details on the compliance with the ESMP and environmental & health & safety performance. The bi-annual report on environmental management and health & safety shall include:
  - Findings of the weekly Site Inspection Forms.
  - Notice of any major incidents and complaints and follow up actions taken.
  - Documentation of variations to the ESMP, non-compliances and corrective action.
  - Confirmation that appropriate environmental and health & safety training of personnel and sub-contractors has been, and is being, undertaken.
  - Confirmation that emergency procedures are in place and have been effectively communicated to all personnel and sub-contractors.

The Proponent shall establish and maintain procedures for controlling all documents required for the ESMP that shall be based on a recognised system (e.g., ISO 9000 or similar). These documentation procedures shall ensure that:

- At least one copy of the ESMP shall be readily available on site at all times.
- At least one copy of the Management Plan shall be readily available on site at all times.
- The Proponent shall be responsible for ensuring that documentation is kept up to date and ensure that documentation is reviewed regularly.

The Proponent shall facilitate an ongoing and constructive relationship with local communities and stakeholders adjacent to the project. This will include the following actions:

- Where necessary, the Proponent shall erect and maintain information boards in appropriate locations and positions. Such boards shall also include contact details where members of the public may address any complaints or comments they may have.
- The public shall be kept informed of any activities that may cause a disturbance, such as dust, acid fumes, vibrations, loud and noisy construction and operational activities.
- The Proponent shall maintain a Public Complaints Register in which all complaints are recorded.

6. COMPLIANCE WITH ESMP

The Proponent shall ensure that all its staff, construction staff, sub-contractors, suppliers, etc. are familiar with, understand, and adhere to this ESMP. Failure by any employee of the Proponent, Sub-contractors, or Suppliers to comply with the ESMP shall be considered sufficient cause for a Competent Authority or Karibib Municipality to instruct the Proponent to have the relevant employee removed from the site. The Competent Authority or Karibib Municipality may also order the Proponent to suspend part or all of the works if there is non-compliance with the ESMP. Such suspension shall be lifted only when the offending procedure or requirement is corrected and/or if required remedial measures are put in place.

7. PROCEDURES REGARDING NON-COMPLIANCE

The Proponent must fully implement and comply with the ESMP on an ongoing basis throughout the duration of project activities. If and when the Proponent fails to do, the Competent Authority or Karibib Municipality may impose fines and/or penalties against the Proponent.

8. CONCLUSION

The Environmental and Social Management Plan (ESMP) will form basic tool for reducing the magnitude of impacts and suggesting practical measures to attain this. It is also used to measure compliance by the Competent Authority or Karibib Municipality. It is this tool that gives guidance during monitoring, auditing and taking corrective actions during its implementation, thereby ensuring continuous monitoring of the environment. This ESMP was developed after an environmental assessment. Conditions of the authorisation from the Competent Authority or Karibib Municipality should be incorporated and implemented in complement to his ESMP.

Key sustainability principles to be emphasised include:

- Development must not irreversibly degrade the natural, built, socio-economic and governance resources on which it is based.
- Current actions should not cause irreversible damage to natural and other resources, as this potentially prevents the realisation of future sustainable options.
- Where there is uncertainty about the impact of activities on the environment, caution should be in favour of the environment.
- Land use and environmental planning need to be integrated.
- Immediate and long-term actions need to be identified and planned for, so that urgent needs can be met while still progressing towards longer-term sustainable solutions.

This ESMP should be implemented throughout the project life-cycle, e.g., during pre-construction, construction, operation and decommissioning, in order to minimize negative impacts and enhance positive ones. This ESMP is an effective and a practical working document that sets out the requirements and the goals required in mitigation.

9. PROPOSED MITIGATION MEASURES TO BE PERFORMED (Read with Scoping Report)

Environmental Statement - Protecting Soils					
ESMP Ref:	**Environmental Aspect/Impact**	**Mitigation**	**Phase**	**Monitoring**	**Responsibility**
T1.1	Loss of vegetation and Habitat	1. The demarcation of these habitats must be done in consultation with the relevant Authorities 2. The relevant Authorities must site the actual project footprint. 3. Site clearance must be confined only to areas designated for as in the site layout, and unless absolutely necessary, vegetation will not be removed. 4. Site clearance will be done mechanically, the use of fire is to be avoided. 5. Interference with surrounding vegetation will be minimised, and only vegetation in the way of construction and operational phase will be removed.	All phases	Continuous	Proponent
T1.2	Death and injury of animals	1. Avoid injury to or death of animals by reducing speed of construction vehicles. 2. Trenches and pits must be inspected daily to monitor for trapped animals. 3. Workers to be discouraged from killing animals and birds for food and relish.	All phases	Daily	Proponent Contractors
T1.3	Illegal removal of vegetation	1. Any evidence of plant theft (especially protected species) must be followed up with prosecution and penalties levied on the construction company or staff member. 2. Construction teams will not, as a contractual obligation, be allowed to collect firewood or any other plant resources from surrounding vegetation, wetland, outcrops and riparian areas. Any evidence of this must be followed up with prosecution and penalties levied on the construction company.	All phases	Daily	Proponent Contractor
T1.4	Protected species	1. Prior to vegetation clearing, the development footprint must be surveyed for plant species of conservation concern. 2. Protected plants occurring within the footprint should be relocated in consultation with an approved specialist after obtaining the necessary permits from authorities. 3. All protected species occurring within the footprint should be clearly marked for the duration of the construction phase, and should remain intact and undisturbed. If this is unavoidable, the contractor must follow procedures as advised by the Proponent. 4. Important flora that may become apparent at a later stage should be reported to a specialist and the authorities and be relocated or conserved. 5. If the relocation of protected plants is impossible, the Contractor should plant 3 more the total plants of the same species to be cut at nearby homesteads and schools as directed by the Proponent.	All phases	Continuous	Proponent Contractor

T1.5	Spreading of weeds	Where alien invasive plants occur, they must be uprooted, cut and /or chemically treated. (Use only authorised chemicals).	All phases	Monthly	Contractor Proponent
T1.6	Management of fauna	1. No wild animal may under any circumstance be handled, removed or be interfered with. 2. No wild animal may be fed on site. 3. If applicable, regularly undertake checks of the surrounding natural vegetation, in fences and along game paths to ensure no traps have been set. Remove and dispose of any snares or traps found on or adjacent to the site. 4. Problem animals and vermin need to be removed by an appropriate organization or authority (i.e. such as the Ministry of Environment, Forestry and Tourism, the Police, the SPCA or a registered exterminator). 5. Do not make use of any pesticides, unless approved by the relevant authorities. 6. Important fauna that may become apparent at a later stage should be reported to a specialist and the authorities and be relocated or conserved.	All phases	Daily	Contractor Proponent
Environmental Statement - Protecting Soils					
ESMP Ref:	**Environmental Aspect/Impact**	**Mitigation**	**Phase**	**Monitoring**	**Responsibility**
T2.1	Degrading of soil structure	1. Before construction, vegetation and topsoil must be stripped and stockpiled separately to prevent removal and compaction by vehicles. It must be used for future rehabilitation purposes when possible. 2. Topsoil shall be stockpiled in heaps not exceeding 2.0m in height and be protected from erosion. 3. Re-usable subsoil stripped from construction sites must be stockpiled separately and clearly identified as such. 4. Soil must not be stockpiled on drainage lines. 5. Deficiency of backfill material will not be made up by excavation within the remainder of the development area. Where backfill material is deficient, it must be made up by importation from an approved borrow pit.	Pre-construction and Construction	Weekly	Contractor
T2.2	Soil erosion	1. No excavation of aggregates will occur within 50 metres of the site boundary. 2. Appropriate soil erosion and control procedures must be applied to all embankments that are disturbed and destabilized. 3. Movement of equipment and earth-moving machinery to be restricted to designated roads. 4. Steep slopes to be avoided during planning and establishment of access roads. 5. Surface run-off hump should be made to direct water flow into vegetated surfaces.	Pre-construction and Construction Operational	Daily Weekly	Proponent Contractor

		6. Disturbed terrains should be tilled and re-seeded with local vegetation or re-vegetated. 7. Disturbed steep slopes should be supported with surface rock gladding or vegetation. 8. Excavated areas will be backfilled to avoid unnecessary accumulation of surface water and high velocity overflow. 9. Occurrence of erosion should also be monitored during operational phase and corrective measures taken if necessary. 10. Adequate sedimentation control measures must be instituted at any prominent drainage lines, water crossings and construction trenches. 11. Where possible construction activities must be positioned away from drainage lines and steep slopes. 12. Occurrence of soil erosion and silt generation has to be monitored during construction and operational phases and corrective measures taken if necessary. 13. The storm water from within the site need to be controlled by well-designed concrete drains and energy breakers			
T2.3	Pollution of soil	1. Avoid contamination of soil with oil, diesel, petrol, waste or any other foreign matter, which may impact on the capability of the soil as a growth medium. 2. All equipment to be inspected daily for oil or fuel leaks before it is operated. Leakages must be repaired on mobile equipment or containment trays placed underneath immobile equipment until such leakages has been repaired. 3. Contaminated soil has to be: – Removed up to depth 300mm below the saturation mark and disposed at permitted landfill site. 4. The soil can be regenerated by using bio-remediation methods. 5. Hazardous substances to be stored on lined surfaces and be surrounded by berms or bund walls to prevent pollution. 6. Divert storm water from stockpiles and other sites sensitive to erosion. 7. Tailings Storage Area, Copper Ore Storage Area, Chemical Storage Area and all the ponds must be paved, bunded and lined with heavy duty HDPE to avoid pollution. 8. All the leaching ponds and other ponds will be lined with at least a bottom 100cm thick concrete layer, followed by the HDPE plastic liner, and another top 100cm thick concrete layer.	Pre-construction and Construction Operational	Daily Weekly	Contractor Proponent

Environmental Statement - Pollution Control					
ESMP Ref:	**Environmental Aspect/Impact**	**Mitigation**	**Phase**	**Monitoring**	**Responsibility**
T3.1	Air pollution & generation of dust	1. Speed limit must be enforced in all areas to reduce the levels of dust pollution. 2. Air pollution caused during construction can be limited by using dust suppression methods such as water spraying. Water used for this purpose must be in quantities that will not result in the generation of run-off. 3. The contractor's representative or environmental officer must notify all people living within 100 m of the construction site of the proposed activities. 4. In the event of serious levels of dust pollution, the implementation of constant dust monitoring by qualified consultants must be undertaken. 5. Vehicles used on, or entering the site must be serviced regularly to ensure that they do not emit excessive smoke or fumes. 6. No refuse waste is to be burned on the premises or on surrounding premises. 7. Tailings Storage Area, Copper Ore Storage Area, Chemical Storage Area and all the ponds must be paved, bunded and lined with heavy duty HDPE to avoid pollution.	Pre-construction and Construction	Daily	Contractor
T3.2	Noise pollution	1. Noise control measures must be implemented. All noise levels must be controlled at the source. 2. All employees must be given the necessary ear protection gear if the noise levels exceed 55dB. 3. Interested & Affected Parties (I&APs) must be informed about the possibility of impending excessive noise. 4. Generators and pumps must be housed in casings to help reduce any noise in operation. 5. No loud music or excessive noise generated by employees is allowed on site and in construction camps. 6. Loading bins should be rubberised to reduce rattling sound. 7. No unnecessary hooting of construction vehicles will be permitted. 8. No screaming and whistling at the public, by construction workers as they pass-by residential areas, will be permitted.	Construction Operational	Daily Continuous	Contractor Proponent
T3.3	Construction disturbances and waste disposal	1. Construction methods must be respectful of the environment; no unnecessary vegetation clearing, excavations or untidiness. 2. Concrete mixing will be done on pre-designed slabs underlined by PVC lining, or an area previously disturbed. Alternatively, maintain one mixing site and transport the concrete to the construction site.	Pre-construction and Construction	Daily	Contractor

		3. Any concrete spillage must be cleaned immediately. 4. Littering on site and the surroundings areas is prohibited. Clearly marked litterbins must be provided on site. The contractor's representative must monitor the presence of litter on the work sites as well as the construction campsite. All bins must be cleaned. 5. Waste must be disposed, as soon as possible and not be allowed to stand on to decay, resulting in bad odours and attracting vermin. 6. Adequate sanitation and water supply must be installed for the construction personnel (authorization from DWA may be required). 7. Stockpiles should be stored and/or disposed in accordance to the relevant policies, guidelines and standards. 8. Ensure that no excavated soil, refuse or building rubble generated on site are placed, dumped or deposited on adjacent/surrounding properties or land. 9. Wind and animal proof bins must be provided at demarcated areas. 10. Waste must be disposed off at a licensed waste disposal site. 11. No waste, even biodegradable waste may can be buried. 12. All waste removed from site must be disposed at the municipal/permitted waste disposal site. 13. The contractor must ensure that all temporary structures, materials, waste and facilities used for construction activities are removed upon completion of the project. 14. The contractor must clean up and restore all disturbed areas and implement rehabilitation measures where required.			
T3.4	Noise and dust	1. Dust and noise generation should be monitored during all the phases 2. Excavation, handling and transporting of gravel must be minimised under high wind conditions. Dust suppression measures may be required, such as sprinkling the construction site with water to suppress the dust. 3. Dust protection masks must be provided to all staff members working in dust polluted environment. 4. All vehicles' speeds should be controlled to reduced dust production, hence appropriate road signs should be placed to control the traffic speed 5. Ensure engines of construction machinery are fitted with mufflers. 6. Equipment and machinery operators should be equipped with ear protection equipment. 7. Operations should be strictly between 07H00 to 19H00.	Pre-construction Construction Operational	Daily Weekly	Contractor Proponent

T3.5	Blasting and vibrations	1. Drilling and blasting should be carried out by experience, qualified and licensed personal. 2. Calculating the charge size and blast regime to optimize required excavation and fragmentation and thus keep air blast and ground vibration levels below pre-determined acceptable values. 3. Monitoring blast, ground vibration and human response to ensure that accepted levels are in fact acceptable and are being adhered to, and to modify the blasting design as required. 4. Pre-notification of affected persons of the intention to blast and the time of blast, preferably at the same time of day to remove the element of surprise. 5. Correct stemming of blast holes.	Construction	Continuous	Proponent
Environmental Statement - Water Resources Protection					
ESMP Ref:	**Environmental Aspect/Impact**	**Mitigation**	**Phase**	**Monitoring**	**Responsibility**
T4.1	Effect on Water quality	1. Adequate sedimentation control measures must be instituted at any prominent drainage lines, water crossings and construction trenches. 2. Where possible construction activities must be positioned away from drainage lines and areas with a perched water table. 3. All fuel, chemicals, oil, etc. must be confined to areas where the drainage of water can be controlled. Use appropriate structures and methods for storage and handling. 4. No washing and or cleaning of clothes, eating utensils, tools or equipment allowed in water bodies. 5. Adequate sanitation for all personnel to be supplied on site. 6. No permanent stockpiling of any kind allowed within the 1:50 year flood line or within 10m of any water courses. 7. Machinery must be inspected and maintained on a daily basis to guard against possible leakages. 8. Refuelling of construction vehicles should be done at a designated area paved with concrete slabs to avoid soaking of oils into the ground. 9. Fuel storage facilities should be located away from the vicinity of the wetland and any water courses. 10. Used and empty drums, for oils, fuel, grease, etc., should be disposed off at a registered and licensed facility to avoid pollution and contamination of soil and water.	All phases	Daily	Contractor Proponent

		11. All mechanical equipment shall be serviced in accordance with recommended Service Manuals for the equipment. All on site staff to be trained in vehicle and plant maintenance for the plant for which they are primarily responsible. 12. Regular inspection of the fixed above ground container and the portable containers and refuelling areas ensures that the systems are performing as anticipated, and that the risk of the release of contaminants into the surrounding environment is minimised. Inspections and checks of the containers and refuelling area shall be undertaken every three months. Records of the checks and inspections shall be kept and made available to Environment on demand. 13. All above ground containers shall be inspected for leaks and general condition. All pipe work that carried diesel fuel oil will also be inspected for leaks and general condition. 14. An inventory reconciliation of diesel fuel oil needs to be maintained for the entire site. 15. Tailings Storage Area, Copper Ore Storage Area, Chemical Storage Area and all the ponds must be paved, bunded and lined with heavy duty HDPE to avoid pollution 16. All the leaching ponds and other ponds will be lined with at least a bottom 100cm thick concrete layer, followed by the HDPE plastic liner, and another top 100cm thick concrete layer.			
T4.2	Effect on water course and Mitigation of Flooding	1. Occurrence of soil erosion and silt generation has to be monitored during construction and operational phases and corrective measures taken if necessary.	Construction Operation	Daily Annually	Contractor Proponent
T4.3	Effect on groundwater	1. Prevent spillages of any grease, oils, chemical or fuel product. Use drip trays during maintenance of vehicles and machinery. 2. The vehicles maintenance area must be equipped with a concrete floor surface to prevent soil pollution. 3. All areas used for storage and cleaning of machinery or equipment and vehicles must be bunded with prescribed height, and covered with an impermeable floor surface. 4. Polluted soil should be collected and stored into containers and disposed off at appropriate and licensed dumping sites. 5. Collected waste fuels and oils or waste water contaminated with oils must be stored in containers and disposed off to licensed and appropriate dumping sites. 6. Tailings Storage Area, Copper Ore Storage Area, Chemical Storage Area and all the ponds must be paved, bunded and lined with heavy duty HDPE to avoid pollution.	Pre-construction Construction Operational	Daily	Contractor Proponent

		7. All the leaching ponds and other ponds will be lined with at least a bottom 100cm thick concrete layer, followed by the HDPE plastic liner, and another top 100cm thick concrete layer.			
Environmental Statement - Human Well-being					
ESMP Ref:	**Environmental Aspect/Impact**	**Mitigation**	**Phase**	**Monitoring**	**Responsibility**
T5.1	Heritage sites	Work in areas where artefacts are found must cease immediately. The excavation must be examined by an archaeologist as soon as possible.	All phases	Continuous	Contractor
T5.2	Socio-economic	Local residents are to benefit from employment opportunities.	All phases	Continuous	Contractor
Environmental Statement - Aesthetics					
EMP Ref:	**Environmental Aspect/Impact**	**Mitigation**	**Phase**	**Monitoring**	**Responsibility**
T6.1	Planning and design	1. Tailings Storage Area, Copper Ore Storage Area, Chemical Storage Area and all the ponds must be paved, bunded and lined with heavy duty HDPE to avoid pollution. 2. Make use of existing access roads where possible.	Planning Construction	Continuous Continuous	Contractor Proponent
T6.2	Construction aspects	1. The contractor must ensure that the site is kept tidy at all times, that sufficient refuse bins are provided, and that they are emptied regularly. 2. Refuse or building rubble generated on the premises must not be deposited on adjacent properties, road verges or open spaces. It must be contained on site, then removed and disposed of at an approved dumping site at least every two weeks. 3. Disturbed and open areas must be rehabilitated and re-vegetated as soon as possible after construction. 4. When construction is taking place within 200m of a densely populated area, the construction site must be enclosed by a dark green of black shade cloth of no less than 2m high, to prevent any visual intrusion. 5. Rehabilitate all disturbed areas, especially borrow pits.	Construction	Daily	Contractor
Environmental Statement - Care for Nature					
ESMP Ref:	**Environmental Aspect/Impact**	**Mitigation**	**Phase**	**Monitoring**	**Responsibility**
T7.1	Rehabilitation of environmental damage	1. Ensure that all temporary structures, materials, waste and facilities used for construction activities are removed upon completion of the project.	Post construction	After construction	Contractor

		2. Upon completion of the project, the Contractor will ensure that any/all temporary access roads, quarry pits and borrow pits are returned to a state no worse than prior to construction commencing, where possible. 3. Once heavy machinery has cleared the bulk of these material stockpiles, the disturbed areas will be levelled and cleared of any foreign material. 4. Fully rehabilitate all disturbed areas, especially borrow pits and protect them from erosion. 5. Slopes must be designed according to predefined specifications, aimed at the prevention of soil erosion, of efficient storm water control, of the eventual re-establishment of vegetation and of ultimately achieving aesthetically acceptable landscapes. 6. Bulk and fine shaping must be executed according to design, aimed at the prevention of soil erosion, of efficient storm water control, of the eventual re-establishment of vegetation and of ultimately achieving aesthetically acceptable landscapes.			
T7.2	Compliance	The Environmental Assessment Practitioner (EAP) and the Department of Environmental Affairs and Forestry (DEAF) must audit rehabilitation. The Contractor must implement Progressing Rehabilitation of the site and not wait until the end of the project.	All phases	Continuous	Contractor Proponent EAP DEAF
Environmental Statement - Promoting Road Safety					
ESMP Ref:	**Environmental Aspect/Impact**	**Mitigation**	**Phase**	**Monitoring**	**Responsibility**
T8.1	Construction aspects	1. Traffic management systems must be put in place to control traffic during construction. 2. Appropriate danger signs, safe speed limits, and other precautionary measures should be placed at strategic locations along the main bypasses and other roads that will be used during construction and operations. 3. During construction, the speed limit will be below 60km/hr for all vehicles. Speed limits must be enforced in all areas, including public roads and private property to avoid potential accidents. 4. The contractor will place flagmen at strategic locations, to control traffic along the main by-passes and other roads used during the construction and operations. 5. Regular road users of the main by-passes and other roads used during the construction and operations should be notified at least seven (7) days in advance, by placing notifications on the media and erecting proper signage along the Roads, to alert the road users of construction activities that are likely to disrupt traffic.	Construction	Continuous	Contractor

		6. Controlled accesses will be constructed to manage the movement of vehicles and public in and out of the development site.			
T8.2	Operational aspects	1. Traffic management systems must be put in place to control traffic in order to allow a recommended maximum speed safely. 2. The maximum speed limit for DR3662 as per RA guidelines be 100km/h.	Operations	Once off	Contractor
Environmental Statement - Safety First					
ESMP Ref:	**Environmental Aspect/Impact**	**Mitigation**	**Phase**	**Monitoring**	**Responsibility**
T9.1	Fire precautions	1. Take adequate precautions to ensure that fires are not started as a result of Works on site: the Contractor will be held liable for any damage to property adjoining the Site as a result of any fire caused by one of his employees. 2. Establish and maintain fire breaks around the Work Sites if as and when specified by the Project Management Team and as required by applicable legislation and the local authority. 3. Do not permit any fires or open flames, especially during the dry season. A minimum requirement for construction in a high fire risk area is a water truck, with a minimum capacity of 5000 litres, equipped with pump and hose (minimum length 30m), which must be permanently on site, where veld fire is at risk. 4. Ensure that the Work Site, the contractor's camp and all living quarters are equipped with adequate fire fighting equipment. This includes at least rubber beaters when working in veld areas, and at least one fire extinguisher of the appropriate type irrespective of the site. Take immediate steps to extinguish any fire, which may break out on the construction site. 5. No open fires are permitted on site, except in designated cooking area where adequate precautions need to be taken to prevent the spread of fire. Restrict contained fires for heating and cooking (i.e. in a fire drum) to designated areas on site. 6. Prevent employees from creating fires randomly outside designated areas.	Pre-construction and Construction	Daily	Contractor
T9.2	Security	1. The contractor's representative or environment al officer must inform all adjacent l and owners of any after-hour construction activities and any other activity that could cause a nuisance. Normal working hours are between 07h00 and 17h00 Monday to Friday. Arrangements are to be made with the Local Authority for after-hours work. 2. Staff members residing in the construction camp will not be allowed to cause a nuisance to any neighbouring properties. In the event of a complaint received from the adjacent land owners, the privilege to reside on the property might be cancelled immediately.	Construction	Daily	Contractor

		3. Permanent security services should be provided during operations to maintain law and order on site and surrounding area.			
T9.3	Safety	1. Best practice methods must always be employed and appropriated regulations adhered to. 2. No open trenches are permitted without the use of demarcation tape. 3. There must be a first aid facility onsite. 4. Regular auditing of safety requirements must be undertaken in order to monitor and control the problems before they become unmanageable. 5. Workers' rights to refuse work in unsafe condition must be respected. 6. A record must be kept of all incidents on site. 7. Personnel must be trained in basic site safety procedures (safety talks). 8. Secure storage of materials on site particularly hazardous material e.g. chemicals and fuels. 9. Adequate signage on and off the site about potential hazards must be provided. 10. Members of the general public must not be allowed near the construction site. 11. Do not store any fuel or chemicals under trees. 12. Do not permit any smoking within 10m of any fuel or chemical storage area, or refuelling area. 13. The contractor must keep a first aid kit and the telephone numbers of local emergency services in prominent positions at the staff quarters and the site office. All personnel must be made aware of these locations. 14. The contractor on site during the construction phase must provide safety and security arrangements that should ensure that: – The handling of equipment and material is supervised. – Construction vehicles are maintained and controlled by competent personnel. – All excavated areas are clearly marked and that barrier tape is placed around them.	Construction	Daily	Contractor
Environmental Statement - Safe Guarding Workers					
ESMP Ref:	**Environmental Aspect/Impact**	**Mitigation**	**Phase**	**Monitoring**	**Responsibility**
T10.1	Social disturbances	1. Prior to establishing the site camp, the contractor shall produce a plan showing the positions of all structures, lay-down yards and other infrastructure for approval by the RE. 2. Fires, for the purpose of cooking and smoking, will only be allowed in facilities, equipment or areas specially constructed for this purpose. If required by applicable	Construction	Daily	Contractor

		legislation, a firebreak shall be cleared around the perimeter of the camp and office sites. 3. Construction workers should respect community members. They should be warned not to insult the public and also be prohibited to befriend local women, especially those who are married. 4. Construction & maintenance activities must be of such a nature as not to disturb the livelihood of adjacent property owners. 5. A designated place for food preparation and eating must be established at the construction site. 6. Dry chemical toilets (men and women separately) must be made available at a ratio of 1 toilet per 10 staff, within the campsite perimeter and must be cleaned and serviced as requested by the service provider. 7. Workers movements must be limited to the construction area only and must be enforced in terms of the contracts of appointment. 8. Any complaints must be addressed accordingly with the Contractor and record thereof must be kept and communicated to the Proponent. 9. The Proponent must ensure that measures are in place to prevent/mitigate disruption of services as result of construction. 10. Residents have to be notified 7 days in advance of disruptions to services. 11. A resident security guard should be deployed at the campsite for access control, security enforcement and monitoring.			

Environmental Statement – Compliance to the ESMP					
ESMP Ref:	**Environmental Aspect/Impact**	**Mitigation**	**Phase**	**Monitoring**	**Responsibility**
T11.1	Compliance to ESMP and authorisation	A Proponent staff must be designated and capacitated on the ESMP, authorisation procedures and compliance thereto.	Pre-construction	Proponent staff designated	Proponent
T11.2	Monitoring	Monitoring for any environmental impacts during the all phases is recommended until a satisfactory standard of compliance is attained	All phases	Continuous	Proponent