Excel Dynamic Solutions (Pty) Ltd

Updated Environmental Management Plan (EMP):

The Proposed Small-scale Mining Activities of Fluorite on Mining Claims No. 70653, 70654 & 70655 located near Uis, Erongo Region

Document Version: Updated EMP for ECC Renewal (2024)

ECC Renewal Application No.: APP- 003998

Author(s): **Mr. Silas David** Company: **Excel Dynamic Solutions (Pty) Ltd** Telephone: **+264 (0) 61 259 530** Fax2email: **+264 (0) 886 560 836** Email: **public@edsnamibia.com**	Prepared for: **Johannes Malume Gariseb**

June 2024

Contents

LIST OF FIGURES AND TABLES

APPENDICES:

Appendix A: Copy of the Current ECC

Appendix B: Self-Audit Checklist for MCs 70653- 70655

Appendix C: Archaeology Chance Find Procedure

1 INTRODUCTION

1.1 Project Background

Johannes Malume Gariseb (The Proponent), was granted the Mining Claims (MCs) No. 70653-70655 by the Ministry of Mines and Energy (MME). The MCs combined surface area is 47.6594 ha and they are located about 30 km north of Uis (**Figure 1**). The MCs lies within the Otjohorongo Reserve (**Figure 2**).

The Proponent intends to conduct small-scale mining activities for Fluorite on the MCs.

The current ECC (**Appendix A**) for the project is valid between 12 December 2018 and 12 December 2021, However, to ensure that the small-scale mining activities on the MC operate in a sustainable and in compliance with the environmental legislation, the Proponent contracted Excel Dynamic Solutions (Pty) Ltd (EDS) to apply for the ECC renewal on their behalf.

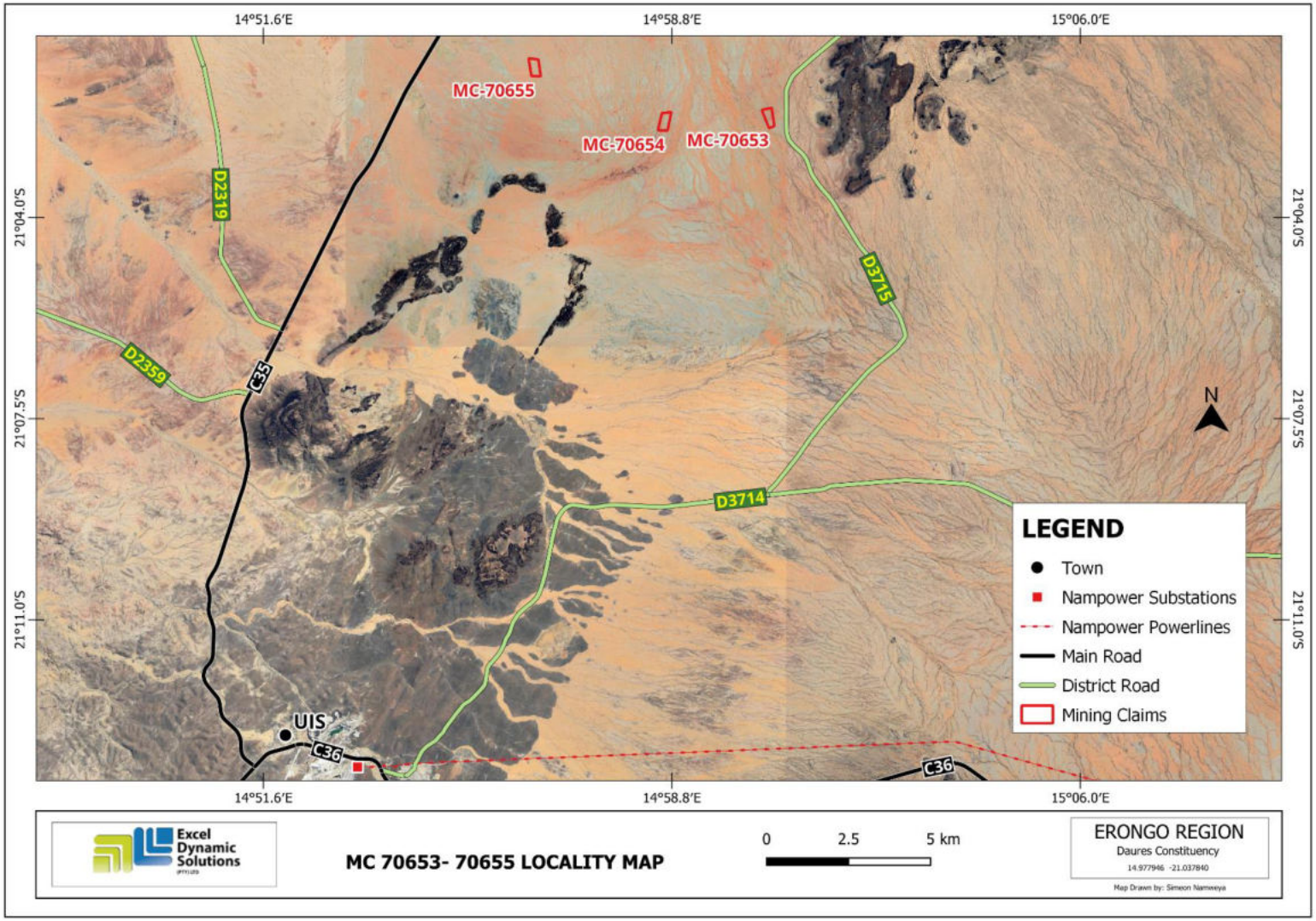

Figure 1: Location of MCs

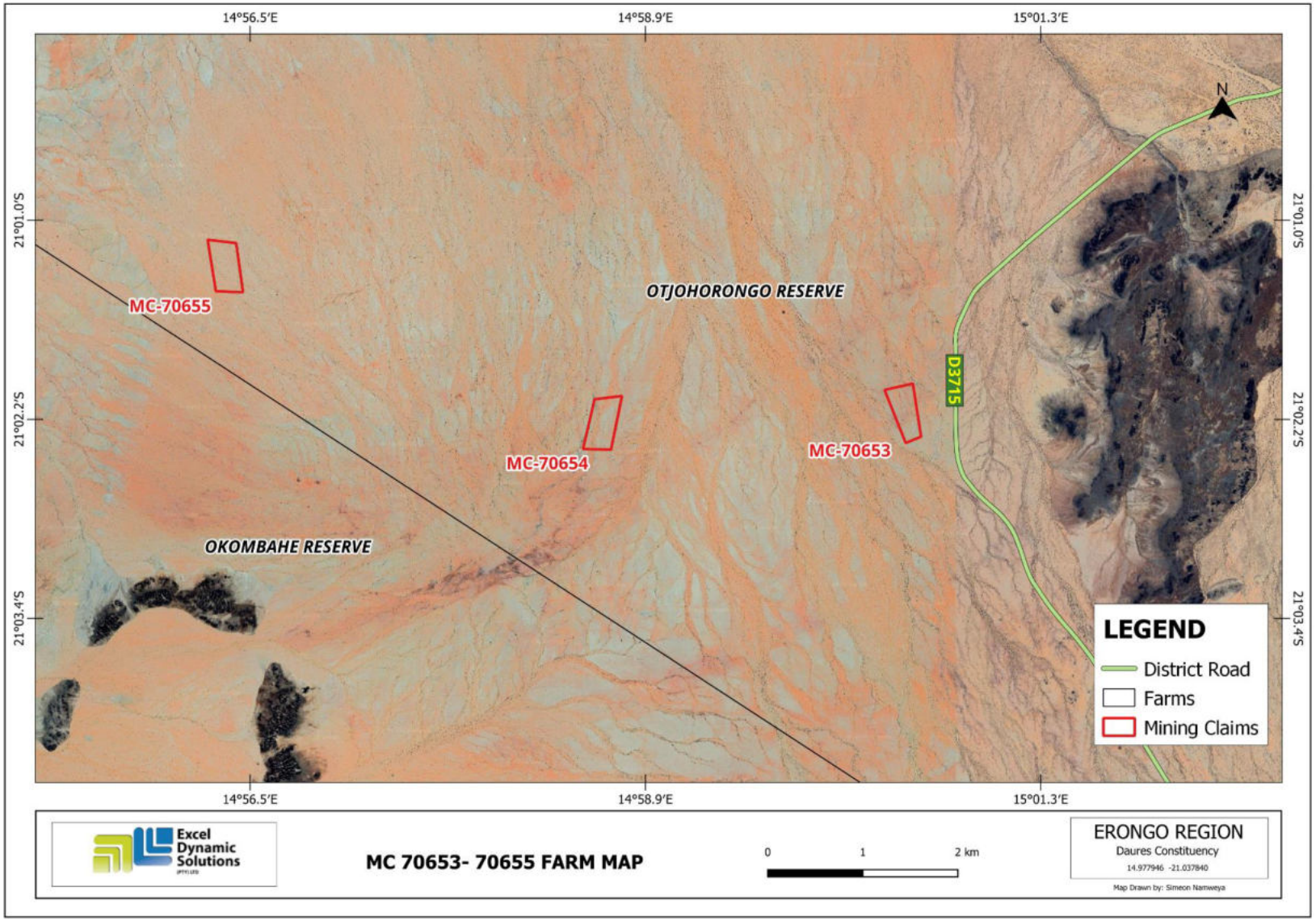

Figure 2: Land Use Map

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 small-scale mining activities on MCs 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 to enable the renewal of the current ECC which has expired in December 2021, to ensure that the project remain compliant to the environmental legislation, and to ensure sustainable practices on the MCs. The ECC should be valid and timely renewed every 3 years it is about to expire. EDS has lodged and submitted the ECC renewal application, and subsequently, the updated EMP for the ECC renewal will be submitted to the DEAF, MEFT for the evaluation and consideration of the ECC renewal.

1.2 Aim of the updated Environmental Management Plan (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 activities:

- **Mining Phase (Operation and Maintenance:** This is the phase during which the Proponent will conduct mining activities of Fluorite on the Mining Claims and undertaking related activities on site. It is also the phase during which maintenance of the site area, equipment and machinery is done by the Proponent.
- **Decommissioning and Rehabilitation Phase:** This is the phase during which the mining activities on the MCs cease. The decommissioning of the MCs operations may be considered because of poor results or declining in the focus 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 the operational phase of the mining activities on site, to address the environmental impacts identified and ensure that the impacts on the environment are avoided, or limited if they cannot be avoided completely.

2 LEGAL OBLIGATIONS GOVERNING THE PROPOSED ACTIVITIES

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

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

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Environmental Management Act EMA (No 7 of 2007)	Requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27). Details principles which are to guide all EIAs.	An ECC must be renewed every 3 or 10 years before its expiry date depending on the duration of the ECC.
Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 4878)	Details requirements for public consultation within a given environmental assessment process (GN 30 S21). Details the requirements for what should be included in a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15).	
Minerals (Prospecting and Mining) Act (No. 33 of 1992)	Section 48 (3): To enable the Minister to consider any application referred to in section 47 the Minister may (b) require the person concerned by notice in writing to (i) carry out or cause to be carried out such environmental impact studies as may be specified in the notice. Section 54(2): details provisions pertaining to the decommissioning or abandonment of a mine.	The Proponent should ensure that all necessary permits/authorization for the MCs are obtained from the Ministry of Mines and Energy (MME), and the Proponent must ensure that the renewed ECC is submitted to MME for record keeping.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001)	Regulation 3(2)(b) states that "No person shall possess or store any fuel except under authority of a license or a certificate, excluding a person who possesses or stores such fuel in a quantity of 600 litres or less in any container kept at a place outside a local authority area"	The Proponent should obtain the necessary authorization from the Ministry of Mines & Energy for the storage of fuel onsite.
Labour Act 11 of 2007 Health and Safety Regulations (HSR) GN 156/1997 (GG 1617).	Adhere to all applicable provisions of the Labour Act and the Health and Safety regulations.	The protection of employees and contractors' labour rights and occupational health safety.
Forestry Act 12 of 2001, Amended Act 13 of 2005	Prohibits the removal of any vegetation within 100 m from a watercourse (Forestry Act S22 (1)). The Act prohibits the removal of and transportation of various protected plant species.	Should there be protected plant species, known to occur within the project boundaries, and require removal for operations to occur, a Permit should be obtained from the nearest Forestry Office (MEFT) prior to removal.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
National Heritage Act (Act No. 27 of 2004)	The Act makes provision for the protection and conservation of places and objects of heritage significance and the registration of such places and objects. Part V Section 46 of the Act prohibits removal, damage, alteration, or excavation of heritage sites or remains, while Section 48 sets out the procedure for application and granting of permits such as might be required in the event of damage to a protected site occurring as an inevitable result of development. Part VI. Section 55 Paragraphs 3 and 4 require that any person who discovers an archaeological site should notify the National Heritage Council. Section 51 (3) sets out the requirements for impact assessment. Should any objects of heritage significance be identified during the site clearing and excavations, the work must cease immediately in the affected sites and the necessary steps taken to seek authorisation from the Council.	If archaeology or heritage significant are discovered on the MCs, such must be reported to the National Heritage Council of Namibia for the management of such discovery.
The National Monuments Act No. 28 of 1969	The Act enables the proclamation of national monuments and protects archaeological sites.	

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Soil Conversation Act No. 78 of 1969	The Act established to consolidate and amend the law relating to the combating and prevention of soil, the conservation, improvement and manner of use of the soil and vegetation and the protection of the water sources.	Soils on the MCs must be conserved and prevented or minimized to erosion and pollution throughout the project phases.
Public Health Act No. 36 of 1919	Section 119 states that " no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or which he is in charge any nuisance or other condition liable to be injurious or dangerous to health."	The Proponent must ensure compliance with the provisions of these legal instruments.
Health and Safety Regulations GN 156/1997 (GG 1617)	Details various requirements regarding health and safety of laborers.	
Public and Environmental Health Act No. 1 of 2015	To provide a framework for a structured uniform public and environmental health system in Namibia; and to provide for incidental matters.	
Labour Act No. 6 of 1992	The effective implementation of the labour Act No. 6 of 1992, specifically its regulations, No. 146 Labour Act 1992: Regulations relating to the health and safety of employees at work.	The Proponent should ensure that the mining activities operate and maintenance works do not compromise the safety welfare of the workers.

3 APPLICABLE INTERNATIONAL STANDARDS, TREATIES, CONVECTIONS AND POLICIES

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

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

Statute	Provisions	Project Implications
Equator Principles	A financial industry benchmark for determining, assessing, and managing environmental and social risk in projects (August 2013). The Equator Principles have been developed in conjunction with the International Finance Corporation (IFC), to establish an International Standard with which companies must comply to apply for approved funding by Equator Principles Financial Institutions (EPFIs). The principles apply to all new project financings globally across all sectors. Principle 1: Review and Categorization Principle 2: Environmental and Social Assessment Principle 3: Applicable Environmental and Social Standards Principle 4: Environmental and Social Management System and Equator Principles Action Plan Principle 5: Stakeholder Engagement Principle 6: Grievance Mechanism Principle 7: Independent Review Principle 8: Covenants Principle 9: Independent Monitoring and Reporting Principle 10: Reporting and Transparency	These principles are an attempt to: '…encourage the development of socially responsible projects, which subscribe to appropriately responsible environmental management practices with a minimum negative impact on project-affected ecosystems and community-based upliftment and empowering interactions.'
The International Finance Corporation (IFC) Performance Standards	The International Finance Corporation's (IFC) Sustainability Framework articulates the Corporation's strategic commitment to sustainable development and is an integral part of the IFC's approach to risk management. The Sustainability Framework comprises IFC's Policy and Performance Standards on Environmental and Social Sustainability, and IFC's Access to Information Policy. The Policy on Environmental and Social Sustainability describes IFC's	The Performance Standards are directed toward clients, guiding how to identify risks and impacts, and are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business sustainably, including stakeholder engagement and disclosure obligations of the

	commitments, roles, and responsibilities related to environmental and social sustainability. As of 28 October 2018, there are ten (10) Performance Standards (Performance Standards on Environmental and Social Sustainability) that the IFC requires project Proponents to meet throughout the life of an investment. These standard requirements are briefly described below. Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts Performance Standard 2: Labour and Working Conditions Performance Standard 3: Resource Efficient and Pollution Prevention and Management Performance Standard 4: Community Health and Safety Performance Standard 5: Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources Performance Standard 7: Indigenous Peoples/Sub-Saharan African Historically Undeserved Traditional Local Communities Performance Standard 8: Cultural Heritage Performance Standard 9: Financial Intermediaries (FIs) Performance Standard 10: Stakeholder Engagement and Information A full description of the IFC Standards can be obtained from	Client (Borrower) concerning project-level activities. In the case of its direct investments (including project and corporate finance provided through financial intermediaries), IFC requires its clients to apply the Performance Standards to manage environmental and social risks and impacts so that development opportunities are enhanced. IFC uses the Sustainability Framework along with other strategies, policies, and initiatives to direct the business activities of the Corporation to achieve its overall development objectives.

	http://www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-standards?cq_ck=1522164538151#ess1	
The United Nations Convention to Combat Desertification (UNCCD) 1992	Addresses land degradation in arid regions with the purpose to contribute to the conservation and sustainable use of biodiversity and the mitigation of climate change. The convention's objective is to forge a global partnership to reverse and prevent desertification/land degradation and to mitigate the effects of drought in affected areas to support poverty reduction and environmental sustainability United Nations Convention.	The project activities should not be such that they contribute to desertification.
Convention on Biological Diversity 1992	Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, to ensure their conservation and sustainable use. Promote the protection of ecosystems, and natural habitats, and the maintenance of viable populations of species in natural surroundings.	Removal of vegetation cover and destruction of natural habitats should be avoided and where not possible minimized.
Stockholm Declaration on the Human Environment, Stockholm (1972)	It recognizes the need for: “a common outlook and common principles to inspire and guide the people of the world in the preservation and enhancement of the human environment.	Protection of natural resources and prevention of any form of pollution.

4 EMP IMPLEMENTATION, ROLES AND RESPONSIBILITIES

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

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

Role (Person and or Institution)	Responsibilities
Johannes Malume Gariseb (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 of compliance with this EMP and issuing fines for contravening EMP provisions.
Site Manager	This individual will be responsible to ensure that the mining 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 provisions and if necessary, removing such individuals from the site. -Cooperate with all relevant interested and affected parties/stakeholders. -Development and management of schedules for daily activities
Environmental Control Officer (ECO) or Safety, Health & Environmental (SHE) Officer	The SHE or ECO (as appropriate) is responsible for ensuring that project activities are completed on time, efficiently and sustainably. The ECO/SHE Officer's duties and responsibilities include: -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).

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

5 ENVIRONMENTAL MANAGEMENT & MITIGATION MEASURES

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

5.1 Key Potential Negative Impacts

Key Identified potential negative impacts are as follows:

- Impacts on Biodiversity and Land
- Impacts on Water Resources
- Impacts on Air Quality
- General of Waste
- Impacts on Soil Pollution
- Vibrations and noise from mining works
- Possible disturbance to heritage
- Occupational Health and Safety risks
- Impacts associated with Closure and decommissioning of small-scale mining works.

The features and aspects of these impacts and mitigation measures as identified in the initial EMP have been updated in this version.

5.2 The Updated Management and Mitigation of Potential Key Negative Impacts

The management and mitigation measures for the potential negative impacts are presented in **Table 3**.

Table 4: Management Action Plan for the Small-scale Mining activities Program

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
PLANNING PHASE					
EMP implementation and training	Lack of EMP awareness and implications thereof	A Comprehensive Health and Safety Plan for the project activities should be compiled. This will include all the necessary health, safety, and environmental considerations applicable to respective works on sites. An EMP non-compliance penalty system should be implemented on site. The Proponent should appoint an EHS Officer to be responsible for managing the EMP implementation and monitoring.	- Proponent	Continuous	Prior to Mining works
Authorizations	Lack of Agreements, Permits/ Licenses	All the required agreements and licenses or permits should be applied for and signed, respectively before commencement of work on the MCs, or as required. The permits, agreements referred to herein include:	- Proponent (in collaboration with the Site Manager, if necessary)	Once off prior to commencement of works Continuous	Prior to project activities and when necessary, throughout project operation.

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		○ land access & use (by the custodian of the land (by MEFT's Parks Division for the conservancy space) and Traditional Authority on communal land. ○ waste management disposal permits from the relevant facility operator/owner ○ water supply agreement ○ onsite fuel storage permit from MME for any, petroleum stored onsite			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
Communication between the Proponent and other neighbouring land users and custodians	Lack of communication (proper liaison) between other land users and Proponent with regards to land use	The Proponent should appoint a Public Relation Officer (PRO) to liaise with the land users and or custodians. A clear communication procedure/plan which should include a grievance mechanism should be compiled.	-Proponent (Site Manager)	Continuous Daily	Throughout the project phase
Employment	Creation of employment opportunities	Preference of local people for employment for jobs should be implemented, i.e., permanent residents from the project site area and surrounding areas should be employed for the unskilled labour preferentially to out-of-area people (outsiders) where possible. Out-of-area employment should be justified, for example by the unavailability of local skills only.	- Proponent - Project Drivers	Daily	Throughout the project phase

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		Equal opportunities should be provided for both men and women.			
Specialised procurement of services	Mining contractors and services	All services related to small-scale mining activities such as trenching/pitting and drilling that the Proponent may need, preference should be given to local providers of such services. If not available locally, the services search should be extended to a regional level (Erongo Region) and lastly, nationally.	Proponent	Monthly	Throughput the project phase
OPERATIONAL PHASE (MINING)					

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
Soil and Water Pollution	Contamination of soil/Hydrocarbon spillages	- In all areas where there is storage of hazardous substances (i.e. hydrocarbons), there must be containment of spillages on impermeable floors and bunded trays that can contain 100% of the volume of the hazardous substances. - All re-fuelling and any maintenance of vehicles must take place on impermeable surfaces. - Pollution should be prevented through basic infrastructure design and through maintenance of equipment. - The Proponent must establish environmental awareness for employees and contractors - A PVC lined sump will be used for collection of oils and silt contained in the drilling water - Any spills must be contained and cleaned up immediately - Non-toxic and biodegradable lubricant will be used. -Oil and wastewater spill control preventive measures	- Proponent - All project workers	Daily	Throughout the entire mining programme

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		should be in place on site to manage soil contamination, and prevent spills from reaching surface and ground water bodies. Some of the preventive measures that can be implemented include: (a) Identification of oil storage and use locations on site and allocate drip trays and polluted soil removal tools suitable for that specific surface (soil or hard rock cover) on the sites. (b) Maintain equipment and fuel storage tanks to ensure that they are in good condition to prevent leaks and spills. (c) The oil storage and use locations should be visually inspected for container or tank condition and spills. (d) Maintain a fully provisioned, easily accessed spill kit. Spill kits should be located throughout the active project sites contain the floor dry absorbent material and absorbent booms, pads, mats. These would be suitable for ground surface areas that are covered mainly by hard rocks.			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		-All project employees should be sensitized to the impacts of soil pollution and advised to follow appropriate fuel delivery and handling procedures. -The Proponent should develop and prepare countermeasures to contain, clean up, and mitigate the effects of an oil spill. This includes keeping spill response procedures and a well-stocked cache of supplies easily accessible. -Ensure employees receive basic Spill Prevention, Control, and Countermeasure (SPCC) Plan training and mentor new workers as they get hired. -Site areas where hydrocarbons will be utilized, - The surface of sites where hydrocarbons will be utilized should be covered with an impermeable plastic liner (e.g., an HDPE liner), carefully placed to minimize risk of puncturing, to prevent any spillages from getting into direct contact with the soils and prevent eventual infiltration into the ground.			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		-Project machines and equipment should be equipped with drip trays to contain possible oil spills. -In cases of accidental fuel or oil spills on the soils from vehicles, machinery and equipment, the polluted soil should be removed immediately and disposed of in a designated waste type container for later disposal. The removed polluted soil should either be completely disposed of or cleaned/treated and returned to where it was taken from on site. It may also be replaced with cleaner soil. -Although fuel (diesel) required for mining equipment will be stored in a tank, drip trays must be readily available and monitored to ensure that accidental fuel spills along the tank trailer path/route around the sites are cleaned on time (soon after the spill has happened). -Polluted soil must be collected and transported away from the site to an approved and appropriately classified			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		hazardous waste treatment facility. -Washing of equipment contaminated by hydrocarbons, as well as the servicing of vehicles should take place at a dedicated area, where contaminants are prevented from contaminating soil or water resources. -Licenses in terms of the Water Resource Management Act (Act No. 11 of 2013) will be obtained for all drilled holes (not just boreholes). -Provide appropriate toilet facilities for the workers on the site. -Toilet water should be treated by periodically emptying before reaching capacity and transported to a wastewater treatment facility.			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
Air Quality	Contamination	- Vehicle speeds must be limited to 40km/h on access routes to limit dust. - The movement of drilling related vehicles on unpaved access track must be limited. - Water sprays can be used around the laydown area when a drill-site is located near houses/settlements. -The Proponent should ensure that the schedule is limited to the number of days of the week agreed upon in access agreements. -Dust control measures may be considered to suppress dust, in the event that there are local complaints of high levels of dust generation. -Dust masks, eye protective glasses and other respiratory personal protective equipment (PPE) such as face masks should be provided to the workers at mining sites, where they are exposed to dust. -The impact mitigation measures should be	- Site Manager - All project workers	Daily	Throughout the mining phase

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		acknowledged in the relevant authority access agreements as required by law. -Excavating equipment should be regularly maintained to ensure excavation efficiency and so to reduce dust generation and harmful gaseous emissions.			
Noise	Contamination	- Vehicles will travel maximum 30 km/hour near houses/settlements. -Noise from project vehicles and equipment on the working sites of the MCs should be kept at acceptable levels. -Mining hours should be restricted to between 08h00 and 17h00, or at the times agreed upon in writing between the Proponent and land owners, in order to avoid noise pollution and vibrations generated by mining equipment before or after hours, as agreed upon. -When operating the machinery onsite, workers should be equipped with personal	SHE Officer/ECO	Daily	Throughout the mining phase

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		protective equipment (PPE) such as earplugs to reduce exposure to excessive noise. -The transportation of mining materials, equipment and machinery should be limited to once or twice a week only. -Target sites that may be found to be within less than 1 km from the residences (farmhouses) should be avoided at all costs. This is done to preserve tranquility of the residents.			
Land use (physical soils)	Physical soil/land disturbance and loss of topsoil	-Overburden should be handled efficiently during works to avoid erosion when subjected erosional processes. -Prevent creation of huge piles of waste rocks by performing sequential backfilling, especially the trenches. -Stockpiled topsoil and overburden waste rocks should be used to backfill the mined and disturbed site areas/spots during (where possible) and at the end of the program. -Soils that are not within the intended and targeted footprints of the site areas	- All project workers - SHE Officer/ ECO - Site Manager	Daily	Throughout the mining phase

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		should be left undisturbed and soil conservation implemented as far as possible. -Project vehicles/machinery should stick to access roads provide and or meant for the project operations but not to unnecessarily create further tracks on site by driving everywhere resulting in soil compaction.			
Third party Safety	Occupational Health & Safety	- The working area of the site shall only be accessed by the Proponent and their contractors / workers. - Warning signs must be erected and maintained at the strategic location to warn third parties of dangers associated with the mining activities. - Put 'no entry' signs at tracks turning off the official tourist routes. - Any person entering the sites must only be allowed after formal induction. -As part of their induction, the project workers should be provided with an awareness training of the risks of	- Site Manager - SHE Officer	Daily	Throughout the mining phase

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		mishandling equipment and materials on site as well as health and safety risk associated with their respective jobs. -When working on site, employees should be properly equipped with adequate personal protective equipment (PPE) such as coveralls, gloves, safety boots, earplugs, dust masks, safety glasses, etc. -Heavy vehicle, equipment and fuel storage site should be properly secured, and appropriate warning signage placed where visible. -Boreholes that are no longer in use or waiting to be used after mining should be properly marked for visibility and capped/closed off. -An emergency preparedness plan must be compiled, and all personnel appropriately trained. -Workers must not be allowed to consume any intoxicants prior to and during working hours, nor allowed on site when			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		under the influence, as this may lead to mishandling of equipment, resulting in injuries and other health and safety risks. -Any potential dangerous or risky areas identified on site must be equipped with cautionary signs.			
Illegal hunting	Illegal hunting of wildlife	No wildlife hunting is permitted. Site personnel should refrain from killing/poaching or intentionally disturbing wildlife, or any faunal species found on site and around the MCs.	-Proponent -Site Manager -SHE Officer	Daily	Throughout the mining phase
Waste management (General waste	Environmental Pollution	- Suitable receptacles for waste disposal must be provided at appropriate locations on site.	-Site Manager -SHE Officer -All project workers	Daily	At site setup and throughout the mining phase

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
and sanitation)		These receptacles will be clearly marked for different waste types. - Waste will be removed from site and disposed of at a suitable waste disposal facility. - Hazardous waste (including hydrocarbon contaminated material/soil) will be disposed of at a licensed hazardous waste disposal facility. -Workers should be sensitized to dispose of waste in a responsible manner and not to litter. -All domestic and general operational waste produced daily should be contained until such that time it will be transported to designated waste sites. -No waste may be buried or burned on site or anywhere else, and no waste must be left on the sites. -The site should be equipped with separate waste bins for hazardous and general/domestic waste.			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		-Hazardous waste, including emptied chemical containers should be safely stored on site where they cannot be accessed and used by uniformed locals for personal use. These containers can then be transported to the nearby approved hazardous waste sites for safe disposal. No waste should be improperly disposed of on site or in the surroundings, i.e., on unapproved waste sites. -Oil spills should be taken care of by removing and treating soils affected by the spill. -A penalty system for irresponsible disposal of waste on site and anywhere in the area should be implemented. -Careful storage and handling of hydrocarbons on site is essential. -Potential contaminants such as hydrocarbons and wastewater should be contained on site and disposed of in accordance with municipal wastewater discharge standards so that they do not			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		contaminate surrounding soils and eventually groundwater. -An emergency plan should be available for major/minor spills at the site during operation activities (with consideration of air, groundwater, soil and surface water) and during the transportation of the products(s) to the sites. **Wastewater generated by mine workers living on-site:** -Sewage waste should be stored as per the portable chemical toilets supplied on site and regularly disposed of at the nearest wastewater treatment facility. -Emptying of chemical toilets according to the manufacturer's specifications. -All wastewater and hydrocarbon substances and other potential pollutants associated with the project activities should be contained in designated containers on site and later disposed of at the nearest approved waste sites in			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		accordance with MAWLR's Water Environment Division standards on wastewater discharge into the environment. This is to ensure that these hazardous substances do not infiltrate into the ground and affect the local groundwater quality.			
Fires	Accidental fire outbreak	-Portable fire extinguishers should be provided on site. -No open fires to be created by project personnel. -Potential flammable areas and structures should be marked as such with clearly visible signage.	-Site Manager -SHE Officer	Daily	Throughout the mining phase

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
Archaeology and heritage	Accidental disturbance and destruction of archaeological or heritage objects and sites	-The management and mitigations or recommendation to minimize impact on archaeological and heritage resources are not available. The only provisional recommendation to the study hereto is that: -The Proponent is advised to make an application to the National Heritage Council for a Consent to allow a detailed Assessment of the area in relation to the proposed activity believed to be an archaeological or heritage site. -The transportation of materials, equipment and machinery should be kept to a minimum to reduce the pressure on local roads. -Heavy truck loads should comply with the maximum allowed speed limit for respective vehicles while transporting materials and equipment/machinery on the public and access roads (40km/h). -Drivers of all project phases' vehicles should be in	-Site Manager -SHE Officer -Archaeologist	Daily	Throughout the phases

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		possession of valid and appropriate driving licenses, and adhere to the road safety rules. -Drivers should drive slowly (40km/hour or less) and be on the lookout for livestock and wildlife as well as residents/travellers. -The Proponent should ensure that the site access roads are well equipped with temporary road signs conditions to cater for vehicles travelling to and from site throughout the project's life cycle. -Project vehicles should be in a road worthy condition and serviced regularly to avoid accidents owing to mechanical faults. -Vehicle drivers should only make use of designated site access roads provided, and as agreed. -Vehicle's drivers should not be allowed to operate vehicles while under the influence of alcohol or any other intoxicants.			

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
		-Sufficient parking areas for all project vehicles should be provided for and clearly demarcated on sites. -The Proponent should make provision for safe offloading and loading areas for materials and equipment on sites. -No heavy trucks or project related vehicles should be parked outside the project site boundary or demarcated areas for such purpose. -To control traffic movement on site, deliveries should be carefully scheduled. This should ideally be during weekdays and between the working hours. -If site access roads are in poor conditions, they should be upgraded to an acceptable standard to accommodate project related vehicles.			
PHASE 4: : CLOSURE AND REHABILITATION					

Aspect	Impact	Management and Mitigation Measure(s)	Responsible Person	Monitoring	Timeline
Rehabilitation	Degradation of site land and soils	-Utilize stockpiled subsoil and topsoil to fill the excavated pits/trenches progressively back, i.e., stockpiled topsoil should be levelled during mining activities. -Backfilling of all excavated pits and trenches with loose material, but not only be filled with sand alone, as wind will scours the sand and re-establish the holes. -Provision of both financial and technical resources for progressive rehabilitation and post-mining activities should be made.	- Site Manager - SHE Officer/ ECO	Weekly	Prior to and during closure and decommissioning of site
Decommissioning	Structures and Infrastructure	-All accumulated waste (hazardous, solid, and general) up until the cessation of mining activities will be removed site and transported to designated off site waste management facilities. -Removal of project vehicles and equipment from the site	- Site Manager - SHE Officer/ ECO	Weekly	Prior to and during closure and decommissioning of site

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

5.3 Environmental and Social Management Action

The updated EMP is responsible for monitoring the indicators as well as the timeframes for the environment and social aspect associated with the project. This is to ensure that the EMP implementations are clearly outlined, and all the implementations are involved in the project cycle. The environmental and social actions are enforced to comply with the activities which are governing the applicable national legislations and to reduce the adverse impacts.

5.4 Monitoring of EMP Implementation and ECC Renewal

The annual environmental monitoring compliance of the EMP implementation must be undertaken throughout the project cycle. The Proponent must keep an environmental Impact Indicator Checklist that must be used by the ECO and updated accordingly (**Appendix C**).

5. Recommendations and Conclusions

EDS is assured that the potential negative impacts associated with the small-scale mining activities on the MCs must continue to be mitigated by effectively implementing the mitigation measures. Therefore, it is recommended that the project and its related activities on the MCs be granted a new ECC, on conditions that:

- The workers and/ or contractors comply with the national legal requirements governing the small-scale mining activities.
- All permits, licenses, and approvals required, for the small-scale mining activities are obtained.
- The ECC is complaint with the Environmental laws, and that the Proponent must effectively conduct the EMP monitoring compliance.
- All the environmental and social precautions provided are adhered to.

The Proponent have been in compliance with the implementation of the EMP throughout the project cycle, therefore, EDS recommends that the ECC should be renewed to allow the Proponent to continue with the small-mining activities on the MCs before the expiry of the current

ECC. However, it is strongly advised that the Proponent must continue with implementation of the EMP and the recommendations outlined in the EMP must be adhered to.

Appendix A: Copy of the Current ECC

Appendix B: Site Environmental Impact Indicator checklist

Appendix C: Archaeology Chance Find Procedure

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:

<u>Action by person identifying archaeological or heritage material:</u>

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.