ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR THE PROPOSED ESTABLISHMENT AND OPERATION OF THE OTJIHEKE COPPER PROCESSING FACILITY LOCATED NEAR OPUWO, IN KUNENE REGION, NAMIBIA.

ECC Application Reference: APP- 007401

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EXECUTIVE SUMMARY

Helao World Energies CC (hereinafter “the Proponent”) proposes to establish and operate an integrated copper smelting facility and beneficiation. The Otjiheke Copper Processing Facility on a 299.852-hectare centered at coordinates -18.12997161°S, 13.90025509°E is located southeast of Opuwo in the Kunene Region, Namibia. The proposed project location is illustrated in **Figure 1.**

The project will utilize conventional open-pit mining methods to extract copper oxide ore, followed by crushing, screening, X-ray fluorescence (XRF) sorting, and side-blown smelting to produce copper matte and blister copper. This integrated value chain aligns with Namibia’s minerals beneficiation and value-addition policies, ESG priorities, and localization objectives.

Namibia lies within several globally significant copper mineralization belts, the Otavi, Matchless, and Kalahari belts which host substantial copper oxide resources well-suited to beneficiation and side-blown smelting. Despite this resource endowment, the majority of Namibia’s copper has historically been exported as raw or minimally processed material, limiting in-country value addition and economic benefit.

The Otjiheke Copper Processing Facility represents a transformative opportunity to process copper oxide resources locally, producing copper matte and blister copper for export and domestic use. The project is strategically positioned to capitalize on the projected structural supply deficit in global copper markets, driven by electrification, renewable energy, electric vehicles, and data center expansion.

The initiative is driven by the need to promote local mineral beneficiation and value addition through the processing of copper-bearing ore into saleable copper products within Namibia, while supporting small-scale mining operations and enhancing regional economic development

In accordance with the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations of 2012, the Proponent is required to obtain an Environmental Clearance Certificate (ECC) prior to commencing construction and operational activities (Republic of Namibia, 2007; MET, 2012). This Environmental Scoping Assessment (ESA) Report and the accompanying Draft Environmental Management Plan (EMP) have therefore been prepared and submitted to the competent authority, the Ministry of Environment, Forestry and Tourism (MEFT), for consideration by the Environmental Commissioner.

Brief Project Description

Planned Activities: PROPOSED OTJIKEHEKE PROCESSING FACILITY

The Proponent intends to adopt a systematic approach to the project as follows:

- Planning phase: This stage includes securing land access agreements, undertaking technical and engineering designs, obtaining regulatory approvals, procuring equipment, and appointing construction and operational contractors.
- Construction phase: This phase involves site clearing, earthworks, installation of processing infrastructure, construction of lined pads and containment systems, erection of tanks and structures, installation of utilities, and establishment of storage and waste management facilities.
- Operational phase: During this stage, the project will utilize the extracted copper oxide ore, followed by crushing, screening, X-ray fluorescence (XRF) sorting, and side-blown smelting to produce copper matte and blister copper. Activities will include ore handling, chemical reagent use, water abstraction and recycling, waste handling, and routine maintenance of equipment and infrastructure.
- Closure (Decommissioning): At the end of the project life or if operations cease, infrastructure will be dismantled and removed, contaminated areas remediated, and the site rehabilitated to a condition as close as practicable to its pre-development state.

Public Consultation

Public Consultation Activities

Regulation 21 of the EIA Regulations details the steps to be followed during the public consultation process, and these were used to guide consultation for the proposed processing facility. The public consultation process assisted the Environmental Consultant in identifying potential environmental and social impacts and in determining appropriate mitigation measures and alternatives where applicable.

- A Background Information Document (BID) containing information about the proposed project activities was compiled and made available to registered Interested and Affected Parties (I&APs) upon request.

- Project Environmental Assessment notices were published in the ***New Era Newspaper*** (12 March 2026 and 19 March 2026) and ***The Namibian Newspaper*** (12 March 2026 and 19 March 2026), briefly explaining the proposed activity, its location in the Kunene Region, and inviting members of the public to register as I&APs and submit comments or concerns.
- Public notices were placed at the Kunene Regional Council, Opuwo Town Council and on site to inform local communities of the Environmental Assessment process.
- Public consultation meeting was conducted with affected community members, traditional authorities and other stakeholders at Ondole village church on 27 March 2026 at 11h00 am
- Issues and concerns raised during the consultation process were documented and used to inform the ESA Report and the Draft EMP.

Potential Impacts Identified

The following potential impacts are anticipated:

Positive impacts

Socio-economic development through employment creation during construction and operation; skills transfer and capacity building in mineral processing and plant operations; promotion of local beneficiation and value addition of copper resources; support to small-scale miners through accessible processing opportunities; stimulation of local and regional economic growth; and increased procurement of goods and services from local suppliers. Local beneficiation is a well promoted and supported initiative by the Namibian government as part of a greater country's development plans of creating jobs and accelerate economic growth.

Negative impacts

The potential negative impacts of the project may include disturbance of communal grazing areas and existing land uses (however, the site is on a mining claim and will be fenced off), land and soil disturbance, and impacts on local biodiversity—both fauna and flora. Additionally, there will be concerns regarding water resource abstraction, which may increase demand on groundwater and pose risks of soil and groundwater contamination from chemicals, fuels, and process solutions. Air quality may be affected through dust generation, and waste generation, including hazardous waste, must be carefully managed. Furthermore, there are occupational health and safety risks associated with chemical handling and machinery, as well as increased vehicular traffic and pressure on local roads. Noise and vibration impacts during construction and operation

are also a concern, though it is anticipated that noise will be minimal during construction since the plant units will be pre-fabricated off-site. We expect no vibrations, as all handling will be conducted properly using cranes and the relevant equipment. There may also be potential disturbances to archaeological and heritage resources (chance find) and possible social nuisance or conflicts related to project-related activities. The identified potential negative impacts have been assessed, and appropriate mitigation measures have been proposed accordingly.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The potential impacts anticipated from the proposed copper processing facility activities were identified, described, and assessed. For significant adverse impacts with a medium significance rating, appropriate management and mitigation measures were recommended for implementation by the Proponent, their contractors, and project-related employees.

The public consultation process was undertaken in accordance with the Environmental Management Act (No. 7 of 2007) and its Environmental Impact Assessment Regulations of 2012. Issues and concerns raised by registered I&APs formed the basis of this Report and the Draft EMP and were addressed through proposed mitigation measures to avoid or minimise impacts on the biophysical and social environment.

With effective implementation of the recommended management and mitigation measures, a reduction in the significance of adverse impacts from medium to low is expected. Monitoring of mitigation implementation by the Proponent or an appointed Environmental Control Officer (ECO) is recommended to ensure that identified and unforeseen impacts are addressed timeously. The anticipated environmental and social impacts are expected to be localised, manageable, and largely reversible, provided that mitigation measures are properly implemented.

Recommendations

The Environmental Consultant is confident that the potential negative impacts associated with the proposed project activities can be effectively managed and mitigated through proper implementation of the recommended management and mitigation measures, supported by consistent monitoring and commitment by the Proponent.

It is therefore recommended that the proposed facility be granted an Environmental Clearance Certificate (ECC), provided that:

- All management and mitigation measures provided in this report and the EMP are effectively and progressively implemented.
- All required permits, licences, and approvals for the proposed activities are obtained, including land access agreements, water abstraction permits, chemical storage authorisations, and other statutory approvals.
- The Proponent and all project workers and contractors comply with all legal requirements governing the project.
- Areas where activities have ceased are rehabilitated, as far as practicable, to their pre-construction condition.
- Environmental compliance monitoring reports are compiled and submitted through the MEFT/DEAF portal in accordance with regulatory requirements.

Disclaimer

Excel Dynamic Solutions (EDS) warrants that the findings and conclusions contained herein were accomplished in accordance with the methodologies outlined in the Scope of Work and the Environmental Management Act (No. 7 of 2007). These methodologies represent customary and accepted practice for conducting an Environmental Impact Assessment to identify recognised environmental conditions associated with the proposed copper processing facility.

There remains the possibility that, even with the proper application of these methodologies, certain site conditions may not have been identified within the scope of the assessment or may not have been reasonably identifiable based on available information. The Consultant believes that the information obtained from record reviews, technical documentation, and public consultation processes is reliable; however, no warranty is given regarding the accuracy or completeness of information provided by third parties.

The conclusions and findings presented in this report are limited in time and scope to the date of evaluation. No other warranties, expressed or implied, are made. Some information contained in this report is based on interviews, document reviews, and records obtained from relevant government and private institutions. The report is subject to the limitations of historical documentation, data availability, record accuracy, and personal recollections of consulted individuals.

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LIST OF ABBREVIATIONS

Abbreviation	Meaning
CV	Curriculum Vitae
DEA	Department of Environmental Affairs
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner
ECC	Environmental Clearance Certificate
EDS	Excel Dynamic Solutions
ESA	Environmental Scoping Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
GG	Government Gazette
GN	Government Notice
I&APs	Interested and Affected Parties
MET	Ministry of Environment and Tourism
MME	Ministry of Mines and Energy
PPE	Personal Protective Equipment
Reg	Regulation
S	Section
TOR	Terms of Reference

DEFINITION OF TERMS

Alternative	A possible course of action, in place of another would meet the same purpose and need of the proposal.
Baseline	Work done to collect and interpret information on the condition/trends of the existing environment.
Biophysical	That part of the environment does not originate with human activities (e.g. biological, physical, and chemical processes).
Cumulative Impacts/Effects Assessment	About an activity, means the impact of an activity that in it may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.
Decision-maker	The person(s) entrusted with the responsibility for allocating resources or granting approval to a proposal.
Ecological Processes	Processes play an essential part in maintaining ecosystem integrity. Four fundamental ecological processes are the cycling of water, the cycling of nutrients, the flow of energy, and biological diversity (as an expression of evolution).
Environment	As defined in the Environmental Management Act - the complex of natural and anthropogenic factors and elements that are mutually interrelated and affect the ecological equilibrium and the quality of life, including – (a) the natural environment that is land, water, and air; all organic and inorganic matter and living organisms and (b) the human environment that is the landscape and natural, cultural, historical, aesthetic, economic and social heritage and values.
Environmental Management Plan	As defined in the EIA Regulations (Section 8(j)), a plan that describes how activities that may have significant environments effects are to be mitigated, controlled, and monitored.
Interested and Affected Party (I&AP)	Concerning the assessment of a listed activity includes - (a) any person, group of persons, or organization interested in or affected by the activity; and (b) any organ of state that may have jurisdiction over any aspect of the activity. Mitigate - practical measures to reduce adverse impacts. Proponent – as defined in the Environmental Management Act, a person who proposes to undertake a listed activity. Significant impact - means an impact that by its magnitude, duration, intensity, or probability of

	occurrence may have a notable effect on one or more aspects of the environment.
Fauna	All of the animals that are found in a given area.
Flora	All of the plants are found in a given area.
Mitigation	The purposeful implementation of decisions or activities that are designed to reduce the undesirable impacts of a proposed action on the affected environment.
Monitoring	Activity involving repeated observation, according to a pre-determined schedule, of one or more elements of the environment to detect their characteristics (status and trends).
Nomadic Pastoralism	Nomadic pastoralists live in societies in which the husbandry of grazing animals is viewed as an ideal way of making a living and the regular movement of all or part of the society is considered a normal and natural part of life. Pastoral nomadism is commonly found where climatic conditions produce seasonal pastures but cannot support sustained agriculture.
Proponent	Organization (private or public sector) or individual intending to implement a development proposal.
Public Consultation/Involvement	A range of techniques can be used to inform, consult or interact with stakeholders affected by the proposed activities.
Protected Area	Refers to a protected area that is proclaimed in the Government Gazette according to the Nature Conservation Ordinance number 4 of 1975, as amended
Scoping	An early and open activity to identify the impacts that are most likely to be significant and require specialized investigation during the EIA work. It can also be used to identify alternative project designs/sites to be assessed, obtain local knowledge of the site and surroundings, and prepare a plan for public involvement. The results of scoping are frequently used to prepare a Terms of Reference for the specialized input into full EIA.
Terms of Reference (ToR)	Written requirements governing full EIA input and implementation, consultations to be held, data to be produced, and form/contents of the EIA report. Often produced as an output from scoping.

1. INTRODUCTION

1.1 Project Background

Helao World Energies CC (hereinafter “the Proponent”) proposes to establish and operate an integrated copper smelting facility and beneficiation. The Otjiheke Copper Processing Facility on a 299.852-hectare centered at coordinates -18.12997161°S, 13.90025509°E is located southeast of Opuwo in the Kunene Region, Namibia. The proposed project location is illustrated in **Figure 1.**

The project will utilize the extracted copper oxide ore, followed by crushing, screening, X-ray fluorescence (XRF) sorting, and side-blown smelting to produce copper matte and blister copper. This integrated value chain aligns with Namibia’s minerals beneficiation and value-addition policies, ESG priorities and localization objectives.

Namibia lies within several globally significant copper mineralization belts such as the Otavi, Matchless and Kalahari belts which host substantial copper oxide resources well-suited to beneficiation and side-blown smelting. Despite this resource endowment, the majority of Namibia’s copper has historically been exported as raw or minimally processed material, limiting in-country value addition and economic benefit.

The Otjiheke Copper Processing Facility represents a transformative opportunity to process copper oxide resources locally, producing copper matte and blister copper for export and domestic use. The project is strategically positioned to capitalize on the projected structural supply deficit in global copper markets, driven by electrification, renewable energy, electric vehicles, and data centre expansion while locally supporting small-scale mining operations and enhancing regional economic development

The facility will operate as a processing-only plant, with no mining, blasting, or quarrying activities to be undertaken onsite.

The proposed activities trigger the following listed activities that may not be undertaken without an Environmental Clearance Certificate (ECC) under the Environmental Management Act No. 7 of 2007 (EMA) and its EIA Regulations (GN No. 30 of 2012):

- Activity 3.1 — Construction of facilities requiring a license under the Minerals (Prospecting and Mining) Act, 1992.
- Activity 3.2 — Mineral processing, reduction, refining, and beneficiation.

- Activity 3.3 — Resource extraction, manipulation, conservation, and related activities.
- Activity 9.4 — Storage and handling of hazardous substances.
- Activity 10.1 — Infrastructure for bulk storage of chemicals.

In compliance with the above legislative requirements, the Proponent is required to obtain an Environmental Clearance Certificate (ECC) prior to commencing any construction-related activities. To fulfil this legal obligation, the Proponent appointed Excel Dynamic Solutions (Pty) Ltd, an independent environmental consultancy, to undertake the Environmental Scoping Assessment (ESA) process and submit the ECC application to the Department of Environmental Affairs (DEA) at the Ministry of Environment, Forestry and Tourism (MEFT) (Republic of Namibia, 2007).

This Environmental Scoping Assessment Report has been prepared to identify and assess the potential environmental and social impacts associated with the proposed establishment of the Copper processing facility. The findings of this assessment will inform the development of appropriate management and mitigation measures, which will be incorporated into the accompanying Environmental Management Plan (EMP).

1.2 Terms of Reference, Scope of Works, and Appointed EA Practitioner

To satisfy the requirements of the Environmental Management Act (No. 7 of 2007) (EMA) and its Environmental Impact Assessment Regulations of 2012, the Proponent appointed Excel Dynamic Solutions (Pty) Ltd (EDS) to conduct the required Environmental Assessment (EA) process on their (Proponent's) behalf, and thereafter, apply for an Environmental Clearance Certificate (ECC) for the proposed establishment of a copper processing facility near Otjiheke in the Kunene Region.

The application for the ECC **(Appendix A)** is compiled and submitted to the Ministry of Environment, Forestry and Tourism (MEFT), the environmental custodian for project registration purposes. Upon submission of an Environmental Scoping Assessment (ESA) Report and Draft Environmental Management Plan (EMP) **(Appendix B)**, an ECC for the proposed project may be considered by the Environmental Commissioner at the MEFT's Department of Environmental Affairs and Forestry (DEAF).

The Environmental Assessment project is headed by Ms. Iyaloo Nakale, a qualified and experienced Environmental Assessment Practitioner (EAP). The EAP Curriculum Vitae (CV) is presented in **Appendix C**.

1.3 Motivation for the Proposed Project

Namibia's Vision 2030 and National Development Plans emphasize mineral beneficiation as a key driver of economic diversification and industrial development. The copper processing facility directly supports these national objectives by:

- Converting copper oxide resources into higher-value products (copper matte and blister copper) within Namibia, capturing greater economic value from the country's mineral endowment.
- Creating significant direct employment (estimated 15–25 during construction, scaling to over 100 during full operations) in the economically disadvantaged Kunene Region.
- Facilitating technology transfer in metallurgical processing, beneficiation, and smelting operations from Investors to Namibian workers.
- Generating foreign exchange earnings, corporate tax revenue, and royalties to fund social infrastructure development.
- Stimulating secondary economic activity through local procurement of goods, services, and consumables.

With global copper demand projected to rise from approximately 27–28 million tons (2025) to 36 million tons by 2030, the project is strategically timed to capture sustained long-term demand growth, particularly from China's downstream copper industries, which consume over 50% of global refined copper.

Since Helao World Energies CC intends to establish a copper processing facility and associated infrastructure in the Kunene Region, the proposed project falls directly within these regulated categories.

The ECC process serves as a safeguard to ensure that environmental risks are thoroughly assessed and mitigated before project commencement. It also provides a mechanism for stakeholder consultation and accountability, enabling affected communities and interested parties to participate in decisions that may influence their environment and livelihoods (Ministry of Environment and Tourism [MET], 2008).

For the proposed copper processing project, obtaining an ECC is critical not only for legal compliance but also for ensuring that the development aligns with Namibia's broader

environmental management and sustainable development objectives. The project seeks to support local beneficiation of mineral resources, reduce the export of unprocessed ores, create employment opportunities, and promote skills transfer within the mining sector. Securing this certification will enable the Proponent to demonstrate its commitment to responsible resource development, environmental protection, and socio-economic advancement within the Kunene Region.

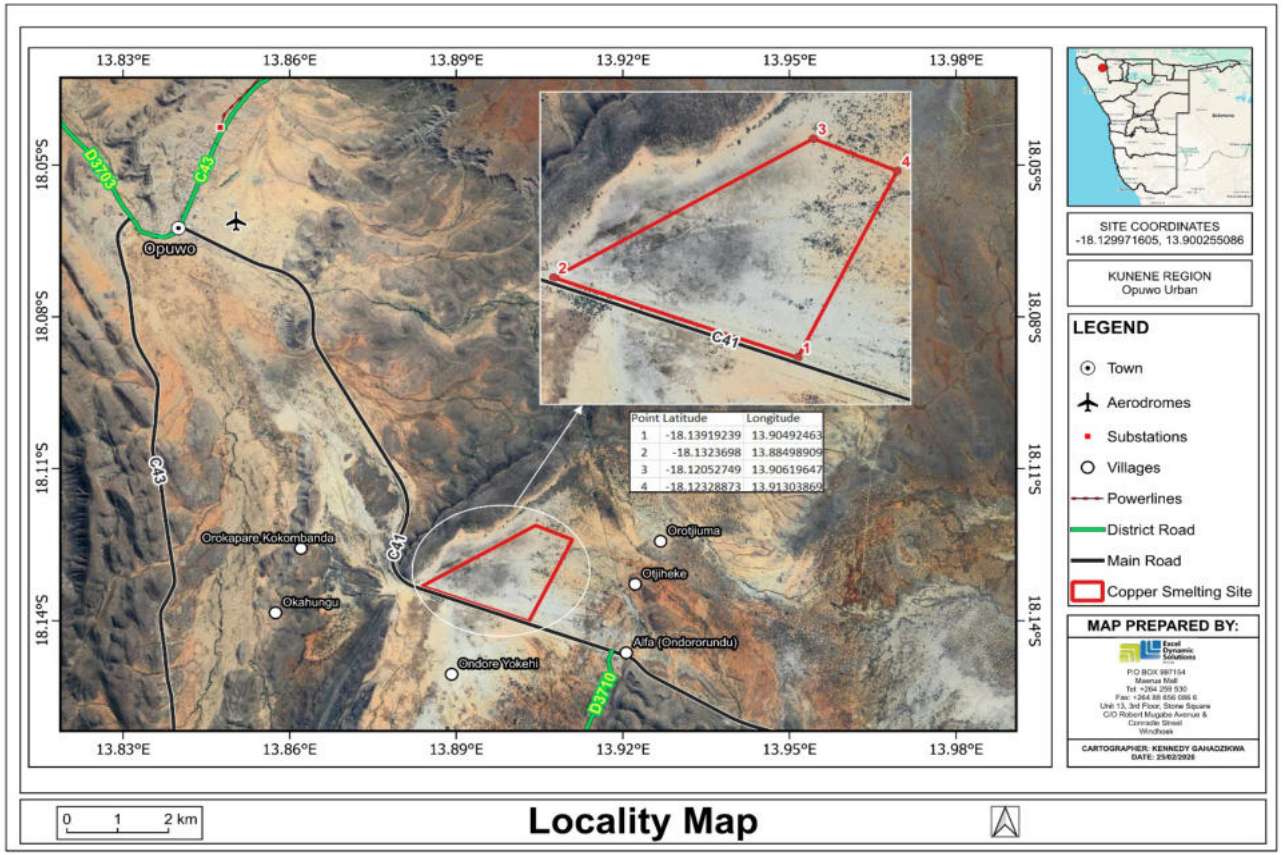

Figure 1: Locality map of the Proposed Copper Processing Facility

2. THE DESCRIPTION OF PROJECT ACTIVITIES

This report was developed based on the site visit and assessment, consulted literature, and information provided by the Proponent.

Alternatives are defined under the EMA (2007) as the different means of meeting the general purpose and requirements of an activity. This section evaluates the alternatives considered for the proposed project in terms of technical feasibility, environmental effects, and rationale for selecting the preferred option.

2.1 No-Go Alternative

Under the no-go scenario, the Otjiheke Copper Processing Facility would not be developed. This would result in: continued export of unprocessed or minimally processed copper ore, foregoing the economic benefits of local beneficiation; lost employment and skills development opportunities for the Kunene Region; failure to contribute to Namibia's mineral value-addition and beneficiation policies; and continued reliance on overseas processing capacity for Namibian copper resources.

Given the compelling economic, strategic, and national development case for the project, and the availability of proven technologies to manage environmental impacts, the no-go alternative is not considered the preferred option.

2.2 Project Location

The Otjiheke site was selected based on the presence of confirmed copper oxide ore bodies within the project area, situated within Namibia's recognized copper mineralization belts. The site is accessible via the C41 district road, is located at a sufficient distance from sensitive receptors, and covers an area of 299.852 hectares, adequate for the full integrated facility. All necessary agreements are being concluded with the landowner and relevant authorities. No alternative site within the Kunene Region was identified as offering comparable resource quality, access, and logistical advantages.

2.3 Processing Technology

Three principal processing technologies were considered for the copper oxide ore:

1. Heap leach – solvent extraction – electro winning (SX-EW): Suitable for lower-grade oxide ores; produces cathode copper; requires large land footprint, extensive reagent infrastructure, and acid management. Less suited to the ore grades and volumes at the Otjiheke site.

2. Conventional reverberatory smelting: Established technology but less energy-efficient and produces higher SO2 emissions relative to modern alternatives.

3. Side-blown smelting **(selected):** A proven, cost-efficient technology well-suited to copper oxide ores. Offers high thermal efficiency, continuous operation, scalability, and effective off-gas capture and treatment, thereby reducing SO2 emissions compared to conventional reverberatory furnaces. Preferred on technical, economic, and environmental grounds.

2.4 Alternative Land Use

Alternative land uses for the site, including conservation, livestock grazing, and small-scale agriculture, were considered. Given the confirmed copper oxide resource endowment, the site's proximity to road infrastructure, and the absence of conflicting high-sensitivity conservation designations, copper processing is considered the optimal and highest-value land use for the Otjiheke site during the operational period. Progressive rehabilitation will restore the land at closure.

3. PROJECT DESCRIPTION

3.1 Proposed Project Phases, Integrated Value Chain

The Otjiheke Copper Processing Facility is designed as a fully metallurgical operation. The production process comprises the following stages:

- **Planning phase**: This is the stage during which the Proponent prepares all the administrative and technical requirements needed for the establishment of the copper processing facility and site development. This planning phase will include securing land access permissions, finalising engineering designs, procuring processing equipment, and appointing construction and installation contractors.

- **Construction phase**: This is the phase during which the processing facility and associated infrastructure are installed, and the site is prepared through appointed contractor(s). This phase will entail limited site clearance, ground preparation, storage areas, upgrading of site access and fencing. The design of the processing units will take into consideration operational efficiency, safety standards, environmental containment, and suitability to local environmental conditions. All process areas will be located on lined and bunded surfaces to prevent soil and groundwater contamination.

- **Operational phase**: This is the stage at which the Proponent will commence with the intended use of the site as a copper processing facility. During this phase the project will utilize the extracted copper oxide ore, followed by crushing, screening, X-ray fluorescence (XRF) sorting, and side-blown smelting to produce copper matte and blister copper

Stage 1: Copper Ore Source

Copper oxide ore bodies received from small-scale miners will be blasted, loaded, and hauled to the on-site processing facility. The ore entering the warehouse will have an average grade of approximately 2% copper and higher.

Stage 2: Crushing and Screening

Raw ore (480 tons/day) will undergo primary and secondary crushing, followed by multi-stage screening to separate material by particle size. Powdered waste will be directed to designated waste dumps. Screened material is classified into blocky and fines fractions for further processing.

Stage 3: XRF Beneficiation

X-ray fluorescence (XRF) sensor-based ore sorting technology will be applied to concentrate ore grade and reduce smelting volumes. XRF sorting separates high-grade material (fed to smelting) from low-grade blocky waste (approximately 280 tons/day at 0.4% grade). This step is critical to improving overall metallurgical efficiency and reducing energy consumption in smelting.

Stage 4: Side-Blown Smelting

Beneficiated ore, together with fluxing agents (fluorite: 80 kg/day; limestone: 800 kg/day; carbon: 80 kg/day; and iron ore as required), will be fed into a side-blown smelting furnace. The side-blown converter is a proven, cost-efficient technology well-suited to copper oxide ores, offering high thermal efficiency, continuous operation, and effective environmental controls for off-gas capture.

The smelting process produces two primary products:

- **Copper matte** (output approximately 2.5 tons/day; 20% of total): intermediate copper product for further refining.
- **Blister copper** (output approximately 7.5 tons/day; 80% of total): high-purity copper product ready for export or downstream processing.

Slag (output approximately 87 tons/day at an average grade of 1.72% copper) will be managed at a designated on-site slag dump in accordance with environmental regulations. The potential for slag reprocessing to recover residual copper values will be evaluated during the detailed design phase.

Table 1: Design Phases

Phase	Duration	Key Activities
Phase 1: Base Construction & Initial Production	10–15 months	Establish operating entity; acquire exploration and mining licenses; construct initial beneficiation plant (crushing, XRF sorting); construct smelting facilities (side-blown furnace); develop access roads, utilities, and staff facilities.
Phase 2: Expansion and Optimization	18–24 months (post Phase I)	Expand processing and smelting capacity; secure additional mineral rights; optimize metallurgical recovery; upgrade tailings management systems and supporting utilities.
Phase 3: Technology Upgrade and Diversification	24–30 months (post Phase II)	Introduce smart factory systems, advanced automation, IoT and big data analytics; diversify into additional strategic minerals (lithium, graphite, rare earths); integrate renewable energy solutions. Capital: USD 150 million.
Decommissioning & Rehabilitation	24 months (end of mine life)	Progressive land rehabilitation; decommissioning of all structures; final closure as per approved Closure Plan.

The total operational life of the facility is expected to be approximately 30 years. The facility will operate strictly as a processing-only plant, and no mining, blasting, or crushing activities will occur onsite.

- **Closure (Decommissioning):** This phase refers to the cessation of processing activities at the site and the eventual decommissioning of plant infrastructure, removal of equipment, safe disposal or rehabilitation of contaminated materials, and restoration of disturbed areas, should this occur in the future. Although closure is not anticipated in the foreseeable future due to the expected continued demand for mineral processing and beneficiation, provisions for responsible decommissioning and site rehabilitation are included in this EMP.

3.2 Human Resources and Accommodation

Construction will be undertaken by appointed qualified contractors, who will provide skilled and semi-skilled labour for civil works, mechanical installation, and electrical setup. The Proponent will, where feasible, prioritise the employment of local labour to ensure socio-economic benefits for surrounding communities. During operations, the facility will be managed by trained plant operators, maintenance personnel, safety officers.

- **Construction Phase:** 15–40 workers
- **Operation Phase:** 100-500 personnel at full capacity; local employment prioritised in compliance with Namibian labour laws.
- **Management:** Board of Directors, General Manager and three Deputy General Managers (Safety & BD; Finance & Admin; Mining & Engineering).

The working crew will be accommodated in the nearest town (Opuwo), or a campsite will be set up for the crew near the site. If the accommodation camp is to be set up on the site, necessary arrangements will be made with the landowner. Activities will take place during daytime only and staff will commute to the site from their place of accommodation if they are not accommodated on site.

3.3 Site Resources and Infrastructure

- **Water Supply:** ~4,500 litres/month (construction); significantly higher during operations. Sourced from local groundwater via existing permitted boreholes. Used for process cooling, washing, drilling, ablution, and potable supply.
- **Energy:** Solar energy supplemented by diesel generators during construction; dedicated substation and grid connection during operations.
- **Road Access:** Existing C41 district road and site track roads. Access road upgrades required to accommodate heavy vehicles during construction.
- **Offices:** Movable shade facilities and prefabricated temporary offices during construction; permanent administration buildings during operations.
- **Sewage:** Mobile chemical ablution facilities during construction; wastewater transported off-site to Opuwo treatment facility or by designated contractor.

- **Solid Waste:** Waste containers at site and campsite; emptied to main on-site container; disposed of at nearest approved landfill (Opuwo).
- **Hazardous Waste:** Drip trays under all vehicles and machinery; waste oils/fuel stored in approved containers; disposal agreement with Opuwo Town Council.
- **Health & Safety:** PPE provided to all personnel; minimum two first aid kits on-site; serious injuries transported to nearest healthcare facility.
- **Fire Safety:** Minimum two fire extinguishers per vehicle, at working sites and at campsites.

3.4 Equipment and Machinery

- **Construction:** 4x4 vehicles, trucks, excavators, front-end loaders, dozers, drilling equipment, air compressors.
- **Processing:** Primary and secondary crushers, screening equipment, XRF beneficiation sorters, conveyor systems.
- **Smelting:** Side-blown smelting furnace, electrolytic cells, gas capture and treatment systems, slag handling equipment.
- **Power & Utilities:** Diesel generator, dedicated substation (operations phase), water storage tanks.
- **Safety:** Fire extinguishers, first aid kits, PPE stocks.

2.5 Opportunities for the Proposed Development

Key opportunities include the following:

1. Domestic Beneficiation and Value Addition

- **Reduced export of raw materials:** The facility supports the Namibian Government's 2023 policy aimed at stopping the export of raw, unprocessed ore and promoting sustainable mineral beneficiation.
- **Higher-value products:** By processing mineralization on-site (including the possibility of producing high-purity copper products), the project enables the production of higher-value outputs rather than exporting low-grade concentrates. This has the potential to improve profitability and competitiveness.

- **Potential for premium-grade output:** With proper process design and control, on-site refining may support the production of copper products targeting high purity levels (e.g., ~99.99% cathode quality), subject to feasibility and commissioning results.

2. Economic and Industrial Development

- **Job creation:** The project is expected to generate employment for local communities, including technical roles (e.g., machine operators and engineers) as well as administrative and support positions. Similar small-scale mining and processing initiatives in the region have the potential to create up to 200 jobs, depending on scale and operating model.
- **Infrastructure improvement:** Project development may include installing or upgrading power lines, substations, water supply boreholes, and access roads benefiting the facility and improving access for surrounding rural areas.
- **Increased government revenue:** Ongoing operations are expected to contribute to national revenue through taxes, royalties, and improved foreign currency earnings from exports of processed products.

3. Local Community Development and Support to Small-Scale Mining

- **SME development and market access:** The processing facility can provide a consistent local market for copper ore sourced from nearby small-scale miners in areas such as Opuwo, Otuani, Sesfontein, but not excluding other areas in Kunene region. This supports efforts to formalize and strengthen the small-scale mining sector.
- **Skills transfer and capacity building:** The project intends to prioritize on-site training and skills development for workers, strengthening local capabilities in mining support services, mineral processing, and related technical operations.

4. Technical and Project Development Opportunities

- **Phased implementation potential:** Development will begin with processing mineralization through steps such as crushing, screening, and mineral separation to confirm technical and economic viability before scaling up.
- **Improved environmental performance through modern methods:** New processing projects can incorporate measures to reduce environmental impact, including water recirculation and reuse, which is particularly important for arid conditions in the region

3. LEGAL OBLIGATIONS GOVERNING THE PROPOSED ACTIVITIES

Industrial and mineral processing developments in Namibia are required to operate within a defined legal and policy framework that regulates environmental protection, land use planning, public and environmental health, occupational health and safety, hazardous substance management, and waste management. Compliance with these laws and policies is a prerequisite for project approval, implementation, and long-term operation. The following subsections outline the principal national legislation, policies, and guidelines applicable to the proposed establishment of the proposed facility in the Kunene Region.

3.1 The Environmental Management Act (No. 7 of 2007)

The Environmental Management Act (EMA) provides the overarching legal framework for environmental protection and sustainable development in Namibia. The Act establishes the requirement for Environmental Impact Assessments (EIAs) and Environmental Management Plans (EMPS) for listed activities and mandates the issuance of an Environmental Clearance Certificate (ECC) prior to the commencement of such activities (Republic of Namibia, 2007). Mineral processing, reduction, refining, beneficiation activities, and the storage and handling of hazardous substances are listed under the Environmental Impact Assessment Regulations of 2012 as activities requiring prior environmental authorisation (Republic of Namibia, 2007).

For the proposed copper processing project, compliance with the EMA ensures that potential environmental and social risks associated with site preparation, chemical handling, plant operations, and long-term activities are systematically identified, assessed, mitigated, and monitored (Brownlie & Treweek, 2018). The Act further promotes the principles of sustainable development, the precautionary approach, and public participation, all of which guide the Proponent’s planning and implementation of the proposed development (Republic of Namibia, 2007).

3.2 Land Use Planning and Development Legislation

Land use and development in Namibia are regulated through various legislative instruments aimed at ensuring orderly development and the sustainable use of land resources. The establishment of the copper processing facility on community-managed land requires adherence to applicable land access agreements, surface rights approvals, and land use planning procedures, including consultation with relevant traditional authorities and local or regional governance structures.

Compliance with land use planning requirements will ensure that the proposed development is compatible with existing land uses, including grazing and community activities, and that potential land use conflicts are identified and addressed during the planning and implementation phases of the project (Brownlie & Treweek, 2018).

3.3 Public and Environmental Health Act (No. 1 of 2015)

The Public and Environmental Health Act provides the legal basis for safeguarding public and environmental health in Namibia. The Act regulates sanitation, waste management, pollution prevention, and the control of conditions that may be injurious or dangerous to human health (Republic of Namibia, 2015).

For the proposed copper processing facility, compliance with this Act is essential to ensure that sanitation facilities, waste handling practices, and the storage and use of chemicals are managed in a manner that protects workers, nearby communities, and the surrounding environment. Proper implementation of health and environmental management measures under this Act will contribute to improved public health outcomes and reduced health risks associated with industrial activities and waste generation (Republic of Namibia, 2015).

3.4 Pollution Control and Waste Management Bill

Although still in draft form, the Pollution Control and Waste Management Bill seeks to regulate the prevention, reduction, and control of pollution in Namibia. The Bill outlines responsibilities for waste generators, establishes measures for the management of hazardous and non-hazardous waste, and provides penalties for illegal dumping and pollution (MET, 2020).

For the proposed processing project, adherence to the principles of this Bill will guide the safe storage, handling, treatment, and disposal of solid, liquid, and hazardous wastes, including process residues, neutralised sludges, waste oils, contaminated materials, and chemical containers. The project will adopt Integrated Solid Waste Management principles to minimise waste generation and ensure environmentally sound disposal practices (Brownlie & Treweek, 2018).

3.5 Occupational Health and Safety and Labour Legislation

Occupational health and safety in Namibia are governed by various legislative instruments, including the Labour Act and associated health and safety regulations. These instruments aim to protect workers from occupational hazards and to promote safe working conditions.

Compliance with occupational health and safety requirements will ensure that construction workers and operational staff are protected from workplace hazards associated with construction activities, machinery operation, chemical handling, and processing operations. The provision of Personal Protective Equipment (PPE), safety training, emergency response procedures, and safe work practices will form an integral part of compliance with this legislative framework.

3.6 Environmental Assessment Policy (1995)

Namibia's Environmental Assessment Policy, although predating the Environmental Management Act, remains relevant in guiding environmental assessment processes. The policy emphasises principles of public participation, accountability, transparency, and precaution in decision-making (MET, 1995).

For the proposed copper processing facility, the policy underscores the importance of involving Interested and Affected Parties, including local communities, traditional authorities, regulators, and other stakeholders, throughout the environmental assessment process (MAWLR, 2013). This approach ensures that stakeholder concerns are identified early and incorporated into project planning and mitigation measures.

3.7 National Development and Sectoral Policies

The proposed copper processing facility aligns with national development objectives aimed at promoting mineral beneficiation, local value addition, employment creation, and sustainable resource development. Through the processing of copper ore within Namibia and the creation of local employment opportunities, the project supports broader national goals related to industrialisation, economic diversification, and socio-economic development (Brownlie & Treweek, 2018).

3.8 International Guidelines and Standards

While national legislation provides the primary regulatory framework, relevant international guidelines and best practice standards also inform the planning and implementation of mineral processing and industrial developments. These guidelines emphasise sustainable land use, pollution prevention, environmental protection, occupational health and safety, and community well-being.

The Proponent is therefore responsible for ensuring that the proposed activities, as well as the Environmental Assessment process, conform to the principles of the Environmental Management Act and other applicable legislation. The Proponent must further ensure that employees and

contractors act in accordance with these legal and policy requirements throughout the project lifecycle.

Table 2: Applicable legal requirements and permits to the activities of the Proposed Copper Processing Facility.

Legislation/Policy/Guideline	Relevant Provisions	Implications for this project
Environmental Management Act EMA (No 7 of 2007). Regulated under the Ministry of Environment, Forestry and Tourism (MEFT)	The Act and its 2012 EIA Regulations aim to ensure that the potential impacts of development on the environment are carefully considered. The Act aims at promoting sustainable management of the environment and use of natural resources. The Environmental Management Act (EMA) is broad; it regulates land use development through environmental clearance certification and/or Environmental Impact Assessments. For new projects, the Act requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27). Regardless of the site, mitigation measures should be developed for implementation during operations. Details requirements for public consultation within a given environmental assessment process (Government Notice No. 30 Section 21). The details	The EMA should inform and guide this EMP development and its implementation for: • ECC application prior to commencement of construction and processing activities. • ECC Amendment/Transfer and Renewal should the Proponent consider amending or transferring project activities. • The ECC needs to be renewed every 3 years (at least 3 months prior to its expiry date). Applications as deemed necessary should be made with the Department of Environmental Affairs and Forestry (DEAF). Office of the Environmental Commissioner: Tel: **061 284 2701**.

Legislation/Policy/Guideline	Relevant Provisions	Implications for this project
	the requirements for what should be included in an Environmental Scoping Report (Government Notice No. 30 S8) and an EIA Report (Government Notice No. 30 Section 15).	
Environmental Impact Assessment (EIA) Regulations Government Notice 28–30 (Government Gazette 4878) of February 2012: Regulated under the MEFT	Provides procedural requirements for environmental assessment, public participation, scoping, reporting, and decision-making for listed activities including mineral processing, chemical storage, and industrial infrastructure.	The proposed project listed activities relating to mineral processing and hazardous substance storage and therefore requires an Environmental Scoping Assessment, EMP, and ECC prior to implementation.
Local Authorities Act No. 23 of 1992: Regulated under the Ministry of Urban and Rural Development	Provides for the determination, establishment, powers, duties and functions of local authority councils and includes provisions for waste management, sanitation, and infrastructure services.	Although the site is located on community-managed land, the Proponent must ensure that site activities follow the Act and its Regulations as relevant to waste handling, sanitation, and service provision.
Water Act 54 of 1956: Regulated under the Ministry of Agriculture, Water and Land Reform	The Water Resources Management Act 11 of 2013 is presently without regulations; therefore, the Water Act No 54 of 1956 is still in force. Prohibits the pollution of water and implements the principle that a person disposing of effluent or waste has a duty of care to prevent pollution (S3(k)). Provides for control and protection of groundwater (S66	The protection (both quality and quantity/abstraction) of water resources should be a priority. The Proponent should obtain the relevant permits for borehole drilling, groundwater abstraction and use, and when required, wastewater/effluent discharge permits. Division: Water Policy and Water Law Administration Division Tel: (**061) 208 715.**

Legislation/Policy/Guideline	Relevant Provisions	Implications for this project
	(1), (d (ii))). Liability of clean-up costs after closure/abandonment of an activity (S3(l)).	
Water Resources Management Act (No 11 of 2013): Ministry of Agriculture, Water and Land Reform (MAWLR)	Ensures that the water resources of Namibia are managed, developed, used, conserved and protected in a manner consistent with fundamental principles including aquifer protection. Subsection 1(d)(iii) provides for prevention of aquifer contamination and water pollution control (Section 68).	The Proponent will be required to apply for and renew relevant groundwater abstraction and water use permits. Process water recycling and containment measures must be implemented to avoid contamination of groundwater from leach solutions or residues.
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 certificate, excluding quantities less than 600 litres outside a local authority area.	The Proponent should obtain the necessary authorisation from the Ministry of Mines and Energy for the storage of diesel fuel onsite for generators and vehicles. Ministry of Mines and Energy: Director – Petroleum Affairs.
Pollution Control and Waste Management Bill: Regulated under the MEFT	The Bill aims to prevent and regulate the discharge of pollutants to the air, water and land. Section 21(1) prohibits discharge of pollutants or waste into any water or watercourse. Section 55(1) regulates production, collection, transport, storage, treatment and disposal of waste in a manner that	The Proponent and all contractors should ensure proper management of solid and hazardous waste generated during construction and operation of the copper processing facility, including process residues, neutralised sludge, waste oils, contaminated materials, and chemical containers, to prevent

Legislation/Policy/Guideline	Relevant Provisions	Implications for this project
	prevents harm to human health and the environment.	environmental degradation. No permit or license required.
Soil Conservation Act (No 76 of 1969): Regulated under MAWLR	Makes provision for prevention and control of soil erosion and the protection, improvement and conservation of soil, vegetation and water resources.	Duty of care must be applied to soil conservation. Management measures must be included in the EMP to prevent unnecessary disturbance, erosion, and pollution from project-related activities.
Public Health Act (No. 36 of 1919): Regulated under the Ministry of Health and Social Services	Section 119 states that no person shall cause a nuisance or allow any condition liable to be injurious or dangerous to health.	The Proponent and employees should ensure compliance with health and safety measures including sanitation, safe waste handling, and dust and noise control to protect the surrounding community. No permit or license required.
Health and Safety Regulations GN 156/1997 (Government Gazette 1617): Regulated under the Ministry of Health and Social Services	Details various requirements regarding the health and safety of labourers.	All personnel must comply with occupational health and safety standards including PPE usage, safety training, and emergency preparedness.
Public and Environmental Health Act No. 1 of 2015: Regulated under the Ministry of Health and Social Services	Provides a framework for a structured uniform public and environmental health system in Namibia.	Chemical storage, sanitation, and waste management practices must protect workers and the surrounding environment.
Road Traffic and Transport Act, No. 22 of 1999: Regulated under the Ministry of Works and Transport (Roads Authority of Namibia)	Provides for control of traffic on public roads, licensing of drivers and vehicles, and regulation of road transport.	The Proponent should consider applying for a formal access road permit to the site and ensure safe transport of ore, reagents, fuel, and equipment. Tel: **061 284 7027.**

Legislation/Policy/Guideline	Relevant Provisions	Implications for this project
Atmospheric Pollution Prevention Ordinance (1976): Regulated under the Ministry of Health and Social Services	Provides for prevention of air pollution.	Project activities should be undertaken in such a way that they do not pollute or compromise surrounding air quality, including control of dust and emissions from generators.
Hazardous Substance Ordinance No. 14 of 1974: Regulated under the Ministry of Health and Social Services	Provides for control of toxic substances including manufacture, sale, use, disposal, import and export.	The Proponent should handle and manage storage and use of sulphuric acid and other hazardous substances onsite so that they do not harm or compromise the environment.
Labour Act (No. 6 of 1992): Regulated under the Ministry of Labour, Industrial Relations and Employment Creation (MLIREC)	Ensures harmonious labour relations and promotes occupational health and safety and labour welfare.	The Proponent should ensure that construction, operation and maintenance works do not compromise the safety and welfare of workers. No permit or license required.
Forestry Act 12 of 2001, Amended Act 13 of 2005	Prohibits removal of vegetation within 100 m from a watercourse and protects certain plant species.	Should protected plant species occur within the project site, permits must be obtained from the nearest Forestry Office prior to removal. Director of Forestry Division.
National Heritage Act (No. 27 of 2004) and National Monuments Act (No. 28 of 1969)	Provides for protection and conservation of places and objects of heritage significance. Extends protection to communal land and defines permit procedures.	Should heritage resources (artefacts, graves, bones, etc.) be discovered during site preparation or construction, activities must cease and the National Heritage Council of Namibia must be notified. Tel: **061 301 903.**

4. ENVIRONMENTAL BASELINE: BIOPHYSICAL AND SOCIAL

4.1 Climate

Temperatures are high year-round, particularly in the interior. Summer daytime maxima (October–February) frequently exceed 38–42°C in sheltered valley positions such as Opuwo, making it one of the hottest towns in Namibia. Winter nights (June–July) can drop to near-freezing, with ground frost occasionally recorded on the elevated plateau above 1,500 m. The mean annual temperature in Opuwo is approximately 24–26°C, with diurnal temperature ranges often exceeding 20°C, a characteristic of continental semi-arid climates where cloud cover and humidity are low for most of the year.

Rainfall is strictly seasonal, highly variable, and strongly controlled by topography. The rainy season runs from November to April, driven by the southward penetration of the Inter-Tropical Convergence Zone (ITCZ) and associated tropical moisture from Angola. The Kunene Region displays one of the steepest rainfall gradients in Africa: the coastal strip at the Skeleton Coast receives fewer than 25 mm per year, making it one of the driest places on Earth, while the interior highlands around Opuwo receive between 250 and 400 mm annually, and the escarpment and Baynes Mountains can receive up to 500 mm or more in good rainfall years due to orographic enhancement.

Kunene Region's climate is defined by extreme heat, low and unreliable rainfall, hyper-aridity at the coast transitioning to semi-aridity inland, a pronounced seasonal rainfall pattern, strong drying winds, and a massive evapotranspiration deficit, all of which are critical design and management parameters for the proposed Otjiheke Copper Processing Facility

4.2 Topography

The Kunene Region is generally characterised by gently undulating terrain interspersed with rocky outcrops, low hills, and broad plains. The topography of the proposed project site typically refers to karst-influenced relief landscapes where the underlying geology is soluble (commonly carbonates), producing distinctive surface forms. Site elevation in the broader area averages approximately 1299 metres above sea level.

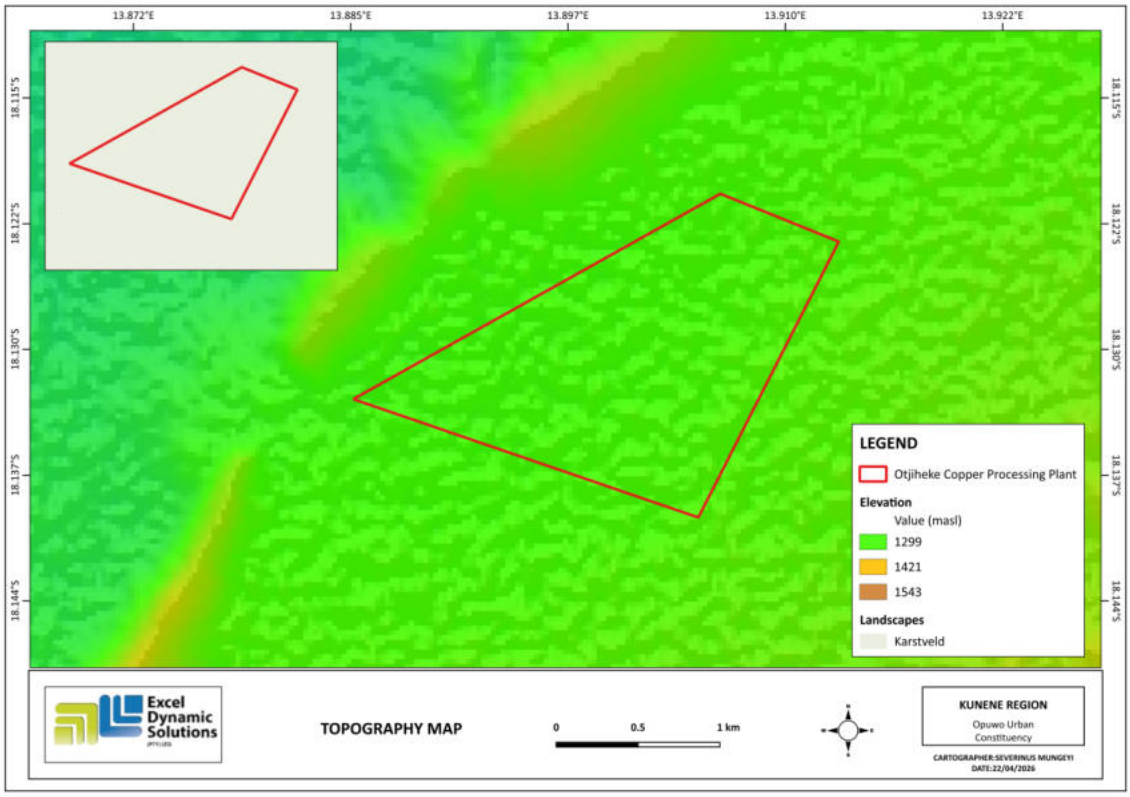

Figure 2: Topography Map of the proposed copper processing facility site.

4.3 Geology

Geologically, the project area is underlain predominantly by Surficial deposits. Surficial materials are those at or near the Earth's surface. They constitute, by far, the largest and most used part of the ground around us. Areas not covered by surficial deposits, such as bare bedrock form probably less than 5 percent of our land surface. Most surficial deposits are composed of poorly consolidated clay, silt, sand, or gravel-sized particles that are produced chiefly by erosion and are transported by and finally deposited by water, wind, or ice, but are also partly produced by the in-situ weathering of bedrock (Hunt, 1984).

Given these geological and hydrogeological conditions, careful management of chemical storage, leach solutions, and wastewater handling at the copper processing facility is essential to minimise the risk of contamination entering fractured bedrock aquifers. The proposed development will therefore require lined processing areas, bunded chemical storage, and controlled drainage systems to safeguard subsurface geological and hydrogeological conditions (Miller, 2008).

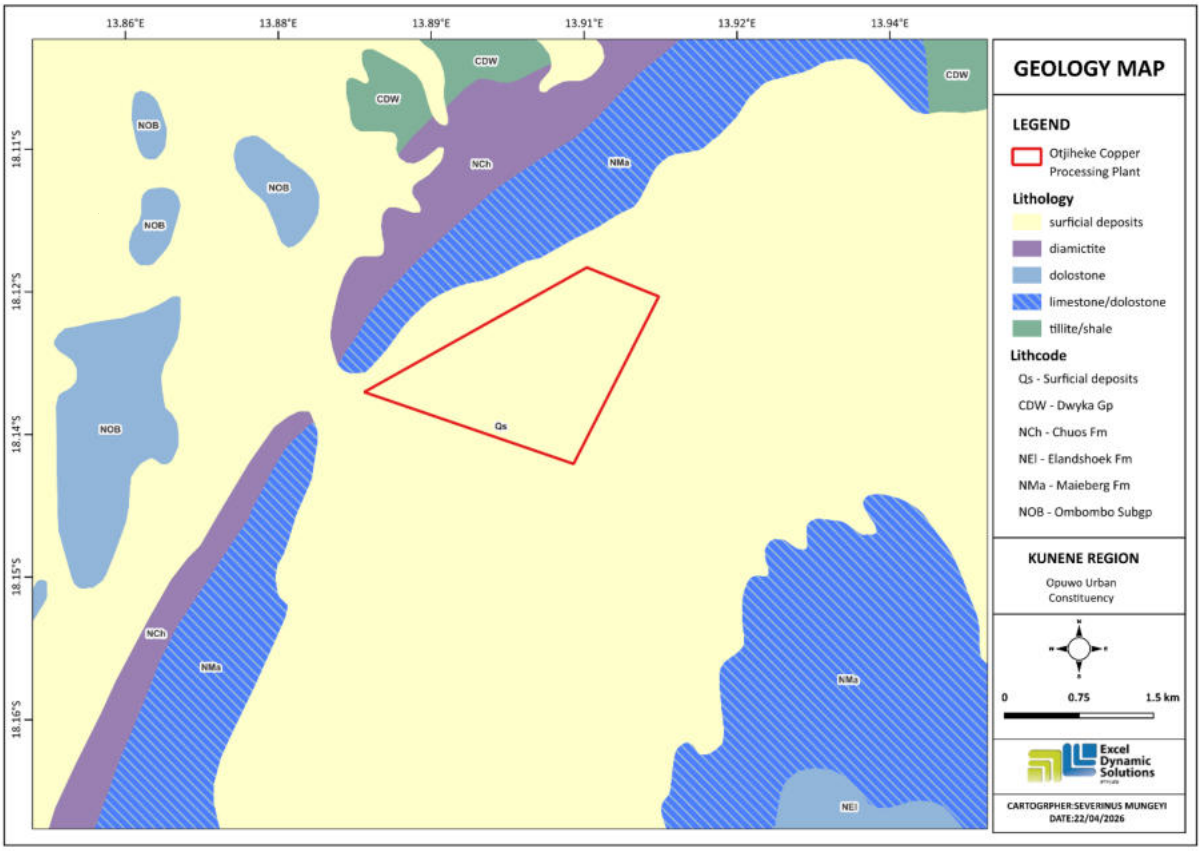

Figure 3: Geology of the proposed copper processing facility site.

4.4 Soils

The project area is dominated by Eutric regosols, which are weakly developed, shallow to moderately deep mineral soils commonly found in semi-arid environments of Namibia (Mendelsohn et al., 2002). These soils typically consist of sandy to sandy-loam textures with limited horizon development, low organic matter content, and moderate fertility. Regosols are generally well-drained but structurally unstable and highly susceptible to surface disturbance and erosion when vegetation cover is removed. Given the permeability of these soils, appropriate lining of processing pads and chemical storage areas will be required to prevent seepage and protect underlying soil and groundwater resources (Mendelsohn et al., 2002).

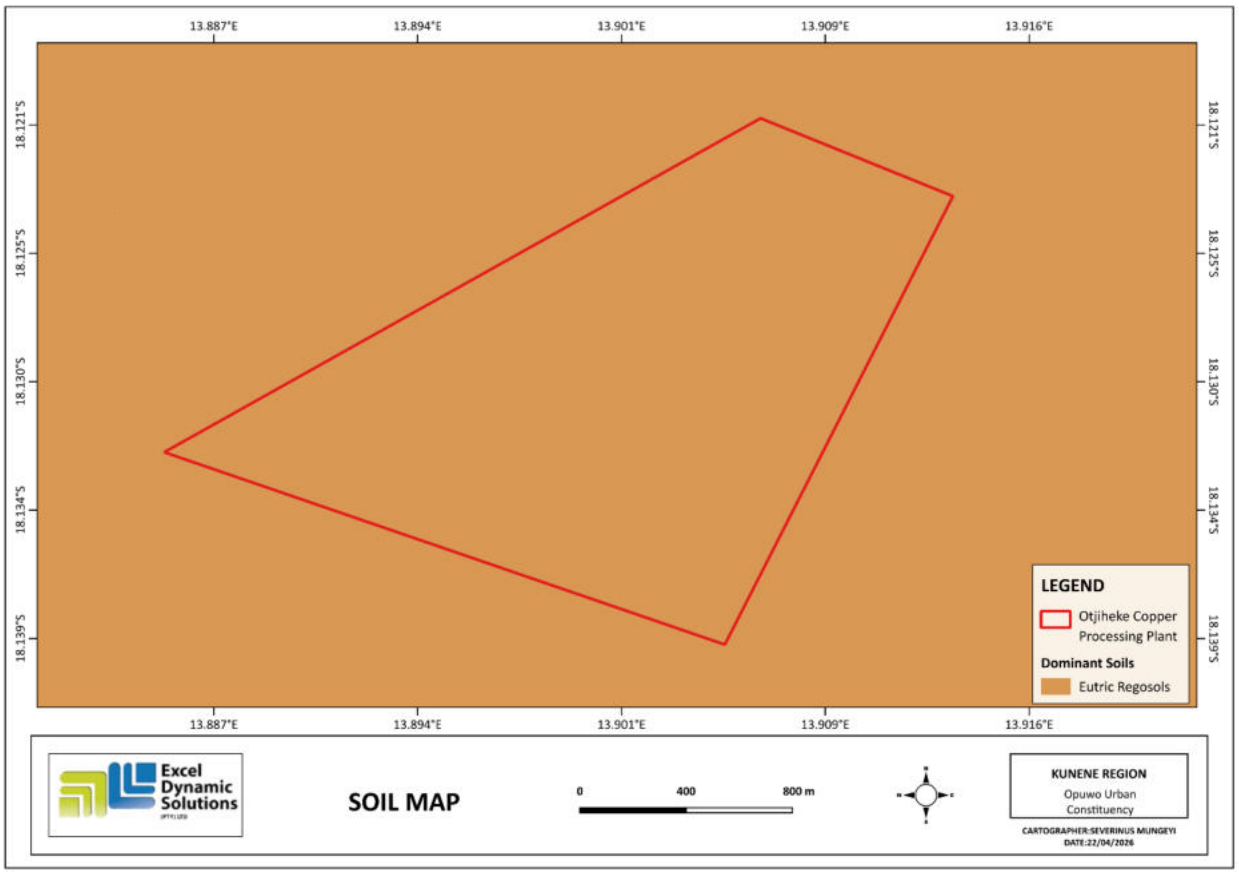

Figure 4: Soil Map of the proposed copper processing facility site.

4.5 Hydrology

Groundwater

Groundwater potential within the proposed site terrain is generally associated with fractured. fissured or karstified bedrock aquifers, and has some boreholes towards the south western part of the site rather than unconsolidated alluvial systems. As a result, groundwater storage and flow are often localized and structurally controlled, with moderate to low yields depending on fracture density (BGR, 2012).

Groundwater is the primary source of water within the Kunene Region. Boreholes tapping shallow and deeper aquifers supply water for domestic, agricultural, and small-scale industrial uses. Groundwater potential in the project area is considered moderate, and aquifers may be vulnerable to pollution due to shallow depth and fractured geology.

Compliance with applicable water legislation and best practice guidelines will be essential to ensure sustainable groundwater use.

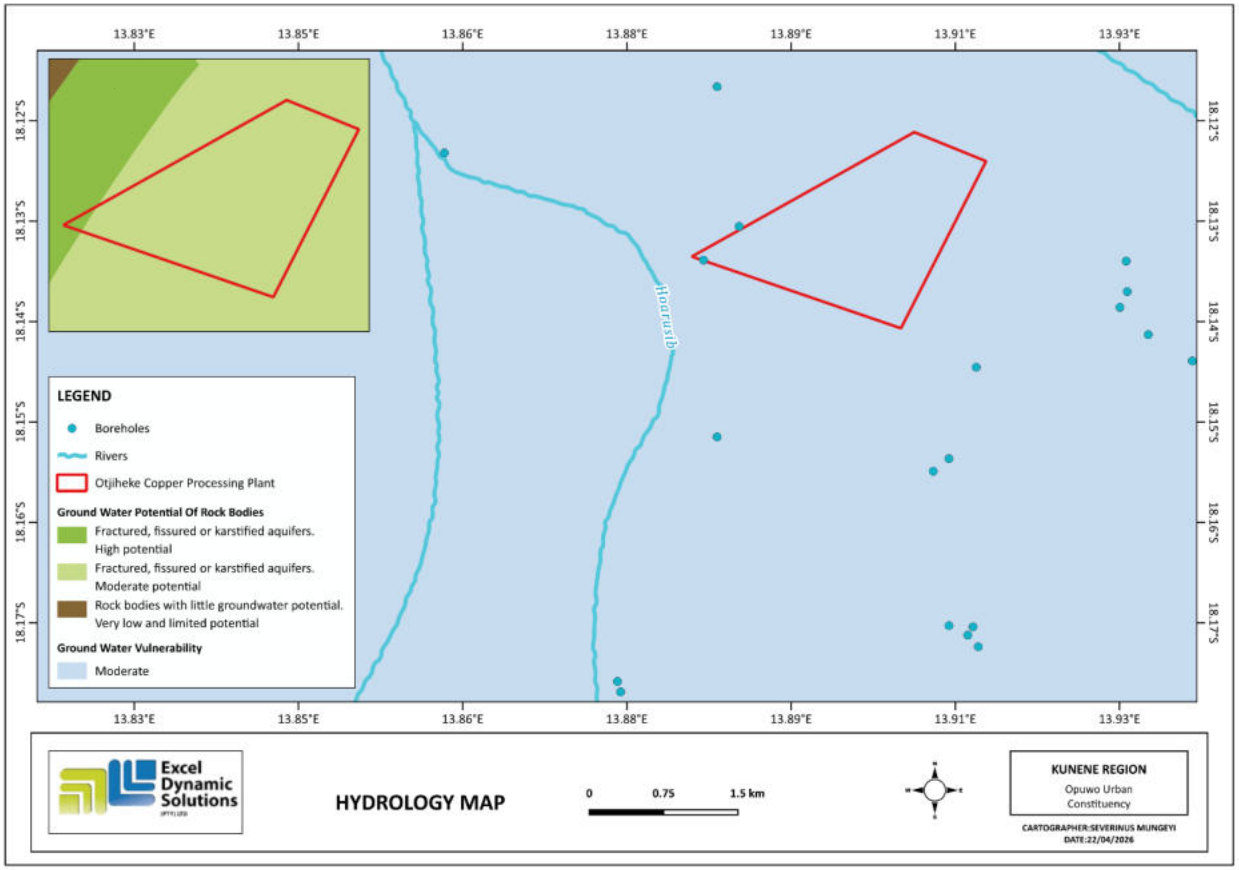

Figure 5: Hydrology Map of the proposed copper processing facility site.

4.6 Flora

The project area falls within the Western Highlands vegetation, a semi-arid upland savannah type. This vegetation unit is typically composed of drought-tolerant grasses, low shrubs, scattered woody species, and hardy perennial plants adapted to shallow soils, rocky substrates, and limited rainfall (Mendelsohn et al., 2002; MEFT, 2018). Dominant species found in the area are the *acacia reficians*. Vegetation cover is generally sparse to moderately dense, reflecting the arid climate.

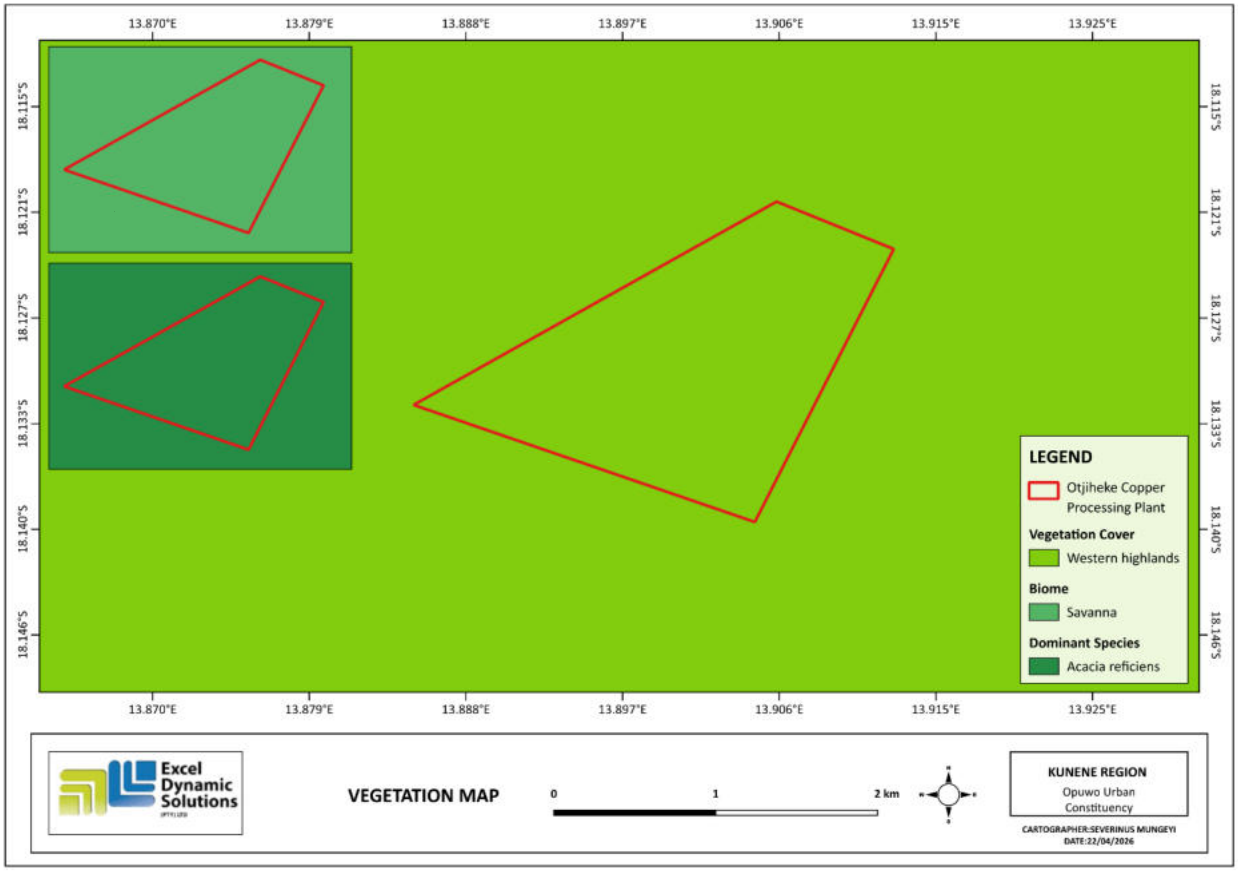

Figure 6: Vegetation Map of the proposed copper processing facility site.

Figure 7: General view of the vegetation observed on site

4.7 Fauna

Faunal presence in the project area is typical of semi-arid communal rangelands. Wildlife is generally limited to small mammals, reptiles, birds, and insects that are adapted to arid environments and human-modified landscapes (Mendelsohn et al., 2002). Larger wildlife species are more commonly found within conservancies or protected areas located further away from settlements and industrial activities.

4.8 Land Use

Land use in the project area is predominantly communal and characterised by livestock grazing, subsistence agriculture, and dispersed rural settlements (Mendelsohn et al., 2002). The proposed processing site is located near but not within the Otjinderese conservancy and is not currently used for intensive agriculture.

The establishment of the copper processing facility represents a change in land use from predominantly pastoral activities to small-scale industrial development. This change is considered appropriate, provided that engagement with local communities, traditional authorities, and land users is maintained.

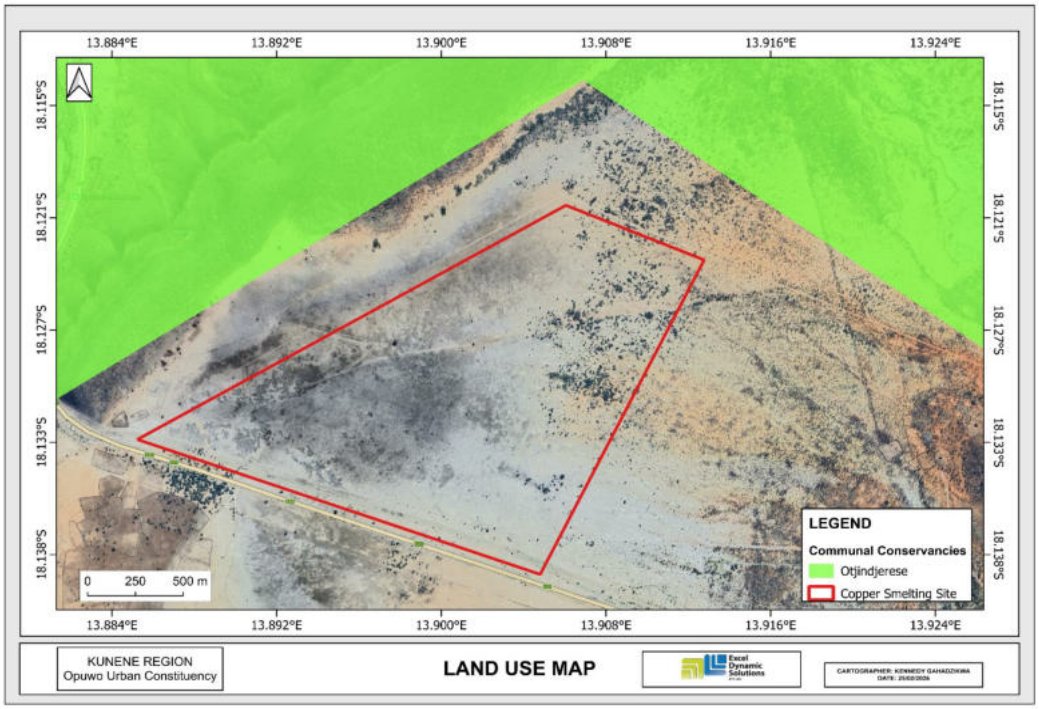

Figure 8: Figure 8: Land Use Map for the proposed copper processing facility site.

4.9 Socio-Economic Environment

Farming

In Kunene Region, livestock production is one of the key sources of livelihood to many rural households. The trading of animals during formal auctions especially in Outjo, Kamanjab, Khorixas and informal sales in Opuwo, creates a source of income for farmers residing in these constituencies. (Kunene Regional Development Profile, 2015).

Tourism

Kunene region is classified as a prime tourist destination due to its rugged landscapes and ancient traditional diversity and practices. Tourism has been identified as a key economic sector for the region, predominated by wild animals in national parks and conservancies. The most popular tourism hot spots are located in Opuwo town (i.e., Ovahimba and Ovazemba traditional attires), Kunene River (Epupa Falls), Khorixas (Twyfelfontein, the Burned Mountain, Organ Pipes, and the Petrified Forest), Kamanjab-VingerKlip, Sesfontein-Ugab River Mouth, Warmquelle (hot springs), Skeleton Coast, and Epupa Swartbooi Drift, Dorsland Trekkers, 46% of the nation's conservancies are in Kunene Region, hosting wildlife such as desert elephants, rhinos, lions and giraffes. (Kunene Regional Development Profile, 2015).

Mining

Kunene Region offers great opportunities for mineral exploration due to its rock and mountainous formations, which are pivotal for regional economic growth and development. Exploration and discovery of mineral resources is at an advanced stage and if found economically viable, could contribute significantly to the economic growth of the region. The region is a host to large reserves of mineral deposits and resources due to ancient geological formations. Extensive mineral exploration activities are underway in and around mountainous areas in the region. (Kunene Regional Development Profile, 2015).

Transportation

Road networks play a major role in the transportation of goods and services between centres and rural areas of the region. Kunene Region has coverage of 545 kilometres of tarred road connecting all major towns such as Outjo, Khorixas, Kamanjab and Opuwo. The landscape of the region is mountainous making it difficult to reach communities living in up-hill and valley areas. As a result, these challenges hamper the delivery of services in remote areas of the region. (Kunene Regional Development Profile, 2015).

The proposed copper processing facility is therefore expected to contribute positively to the socio-economic environment by providing employment opportunities during construction and operation, as well as technical skills development in plant operations, maintenance, and mineral processing.

These socio-economic benefits align with national development objectives related to local beneficiation, industrialisation, employment creation, and regional economic development.

4.10 Heritage and Archaeology

There are no formally recorded archaeological or heritage sites within the proposed project footprint. However, as with any development on communal land, there is potential for chance finds such as artefacts, stone tools, or unmarked graves during site preparation and construction activities.

In accordance with the National Heritage Act (No. 27 of 2004), all construction activities must adhere to heritage protection requirements. Section 55(4) of the Act requires that any archaeological, palaeontological, or cultural resources discovered during construction be reported to the National Heritage Council of Namibia as soon as practicable (National Heritage Council of Namibia [NHC], 2019). Construction activities should cease in the immediate area of discovery until appropriate guidance is provided.

5. PUBLIC CONSULTATION PROCESS

Public consultation is an important component of the Environmental Assessment (EA) process. It provides potential Interested and Affected Parties (I&APs) with an opportunity to comment on and raise any issues relevant to the proposed project for consideration as part of the assessment process. Public input assists the Environmental Assessment Practitioner (EAP) in identifying potential environmental and social impacts and determining whether further investigations are required (Republic of Namibia, 2007; MET, 2012). Public consultation can also aid in the identification of appropriate mitigation measures. Public consultation for this Environmental Scoping Assessment (ESA) study has been conducted in accordance with the Environmental Management Act (EMA) (No. 7 of 2007) and its Environmental Impact Assessment (EIA) Regulations of 2012 (Republic of Namibia, 2007; MET, 2012).

5.1 Pre-identified and Registered Interested and Affected Parties (I&APs)

Relevant and applicable national, regional, and local authorities, as well as other interested members of the public, were identified as part of the public consultation process. Pre-identified I&APs were contacted directly, while other parties who contacted the Consultant following the placement of project advertisement notices in the newspapers were registered as I&APs upon request.

Newspaper advertisements of the proposed activities were placed in two widely read national newspapers, namely the *New Era Newspaper* and *The Namibian Newspaper*. The project advertisement and announcement ran for two consecutive weeks, inviting members of the public to register as I&APs and submit comments or concerns regarding the proposed project.

The public consultation process further included direct engagement with relevant government ministries, regional and traditional authorities, and land users within the vicinity of the proposed project site to ensure that potentially affected stakeholders were informed of the project and provided with an opportunity to participate in the assessment process. A summary of the pre-identified and registered I&APs is presented below, while the complete list of I&APs is provided in Appendix D.

Appendix D.

Table 3: Summary of Interested and Affected Parties (I&APs)

Category	Interested and Affected Parties
National (Ministries and State-Owned Enterprises)	Ministry of Environment, Forestry and Tourism (MEFT) Ministry of Industries, Mines and Energy (MIME)
Regional, Local and Traditional Authorities	Kunene Regional Council Opuwo Town Council Relevant Traditional Authority / Community Leaders
General Public	Nearby land users, small-scale miners, and interested members of the public

5.2 Communication with I&Aps

Regulation 21 of the EIA Regulations outlines the steps to be followed during the public consultation process, and these provisions were used to guide consultation for the proposed project. Communication with I&APs concerning the proposed project was facilitated through the following means and in the order outlined below:

- A Background Information Document (BID) containing information about the proposed project activities was compiled and made available to registered Interested and Affected Parties (I&APs) upon request.
- Project Environmental Assessment notices were published in the ***New Era Newspaper*** (12 March 2026 and 19 March 2026) and ***The Namibian Newspaper*** (12 March 2026 and 19 March 2026), briefly explaining the proposed activity, its location in the Kunene Region, and inviting members of the public to register as I&APs and submit comments or concerns.
- Public notices were placed at the Kunene Regional Council, Opuwo Town Council and on site to inform local communities of the Environmental Assessment process as shown in **figure 9.**
- Public consultation meeting was conducted with affected community members, traditional authorities and other stakeholders at Ondole village church on 27 March 2026 at 11h00 am as shown in **figure 10.**
- Issues and concerns raised during the consultation process were documented and used to inform the ESA Report and the Draft EMP.

Figure 9: : Site Notices placed at the Kunene Regional Council (a), Opuwo Town Council (b) and on site(c).

Figure 10: Public consultation meeting at Ondole Church, Kunene region.

Issues raised by I&APs during the public consultation process were recorded and incorporated into this Environmental Scoping Assessment (ESA) Report and the Environmental Management Plan (EMP). A summary of the main issues raised during public engagement sessions is presented in Table 4 below. Detailed records of issues raised, and responses provided by Excel Dynamic Solutions (Pty) Ltd are attached in **Appendix G.**

Table 4: Summary of main issues raised, and comments received during public consultation engagements.

Issue	Concern
Social corporate responsibility	School and clinic support

Issue	Concern
Collaboration opportunities	Small-scale miners
Employment opportunities for local community members	Socio-economic expectations

6. IMPACT IDENTIFICATION, ASSESSMENT AND MITIGATION MEASURES

6.1 Impact Identification

Proposed developments and activities are usually associated with different potential positive and/or negative impacts. For an environmental assessment, the focus is placed mainly on the negative impacts (Republic of Namibia, 2007; IFC, 2013). This is done to ensure that these impacts are addressed by providing adequate mitigation measures such that an impact's significance is brought under control while maximising the positive impacts of the development (Glasson et al., 2012). The potential positive and negative impacts that have been identified from the proposed project activities are listed as follows:

Positive impacts:

- Creation of jobs for the local communities (primary, secondary, and tertiary employment).
- Development of technical skills and knowledge transfer in mineral processing, plant operations, and maintenance.
- Promotion of local beneficiation and value addition of copper resources within Namibia.
- Boosting local and regional economic growth through procurement of goods and services.
- Opening up other investment opportunities and infrastructure-related development benefits in the Kunene Region.
- Support to small-scale miners through provision of accessible processing facilities and formalised ore off-take arrangements.

Negative impacts:

- Disturbance to communal grazing areas and existing land uses during site preparation.
- Land degradation and vegetation loss within the project footprint.
- Generation of dust during construction, vehicle movement, and handling of materials.

- Water resource use and increased demand on limited groundwater supplies.
- Soil and water resource pollution from accidental spills or leakages of sulphuric acid, diesel, or process solutions.
- Generation of solid, liquid, and hazardous waste, including process residues and contaminated materials.
- Occupational health and safety risks associated with chemical handling, machinery, and plant operations.
- Vehicular traffic use and road safety concerns due to transport of ore, reagents, and equipment.
- Noise and vibrations associated with generators, machinery, and construction activities.
- Disturbance to archaeological and heritage resources during site clearing and earthworks.
- Impacts on local road infrastructure due to increased heavy vehicle usage.
- Social nuisance: local disturbance from dust, noise, and operational activities.
- Social nuisance: job seeking and differing norms, culture, and values associated with incoming workers.
- Impacts associated with closure, decommissioning, and rehabilitation of the processing facility.

6.2 Impact Assessment Methodology

The Environmental Assessment process primarily ensures that potential impacts that may occur from project activities are identified and addressed through environmentally cautious approaches and legal compliance. The impact assessment method used for this project follows Namibia's Environmental Management Act (No. 7 of 2007) and its Environmental Impact Assessment Regulations of 2012, as well as the International Finance Corporation (IFC) Performance Standards (Republic of Namibia, 2007; IFC, 2013).

The identified impacts were assessed in terms of extent (spatial scale), duration (temporal scale), magnitude (severity), and probability (likelihood of occurrence), as presented in Table 4, Table 5, Table 6, and Table 7, respectively.

To enable a scientific approach to determining environmental significance, a numerical value is assigned to each rating scale (Glasson et al., 2012). This methodology ensures uniformity and allows potential impacts to be assessed in a standardised manner so that a wide range of impacts can be compared. It is assumed that the significance of a potential impact is a good indicator of the level of risk associated with that impact.

The following process is applied to each potential impact:

- Provision of a brief explanation of the impact.
- Assessment of the pre-mitigation significance of the impact.
- Description of recommended mitigation measures.

The recommended mitigation measures prescribed for each potential impact contribute towards achieving environmentally sustainable operational conditions for the facility and associated infrastructure across various components of the biophysical and social environment. These measures aim to minimise risks related to land disturbance, chemical handling, water resource protection, waste generation, occupational health and safety, and community well-being throughout the construction, operational, and decommissioning phases of the project.

The following criteria were applied in this impact assessment:

6.2.1 Extent (Spatial Scale)

Extent refers to the physical and spatial scale over which an impact may be experienced. Table 5 presents the rating of impacts in terms of spatial extent.

Table 5: Extent or spatial impact rating

Low (1)	Low/Medium (2)	Medium (3)	Medium/High (4)	High (5)
The impact is localised within the site boundary: site only	The impact extends beyond the site boundary: local	Impacts felt within adjacent biophysical and social environments: regional	Impact widespread far beyond site boundary: regional	Impact extends to national or international boundaries

6.2.2 Duration

Duration refers to the timeframe over which the impact is expected to occur, measured relative to the lifetime of the project. Table 6 presents the rating of impacts in terms of duration.

Table 6: Duration impact rating

Low (1)	Low/Medium (2)	Medium (3)	Medium/High (4)	High (5)
Immediate mitigation possible, immediate recovery	Short-term impacts (0–5 years), quickly reversible	Medium-term impacts (5–15 years), reversible over time	Long-term impacts	Permanent impacts extending beyond closure; irreplaceable or irreversible commitment of resources

6.2.3 Intensity, Magnitude or Severity

Intensity refers to the degree or magnitude to which an impact alters the functioning of an environmental or social component. The magnitude of alteration can be either positive or negative. These ratings were also considered during the assessment of severity. Table 7 presents the rating of impacts in terms of intensity, magnitude, or severity.

Table 7: Intensity, magnitude or severity impact rating

Type of Criteria	Negative
H- (10)	Very high deterioration; high levels of injury or illness; total loss of habitat; total alteration of ecological processes; extensive contamination of soil or water resources; extinction of rare species
M/H- (8)	Substantial deterioration; serious injury or illness; significant loss of habitat or biodiversity; severe alteration of ecological or social processes
M- (6)	Moderate deterioration; discomfort; partial loss of habitat or biodiversity; moderate alteration

Type of Criteria	Negative
M/L- (4)	Low deterioration; slight but noticeable alteration in habitat or biodiversity
L- (2)	Minor deterioration; nuisance or irritation; negligible change in habitat, biodiversity, or environmental quality

6.2.4 Probability of Occurrence

Probability describes the likelihood of an impact occurring. This determination is based on experience from similar projects and professional judgement. Table 8 presents the rating of impacts in terms of probability of occurrence.

Table 8: Probability of occurrence impact rating

Low (1)	Medium/Low (2)	Medium (3)	Medium/High (4)	High (5)
Improbable; seldom occurs; no known vulnerability	Likely to occur occasionally; low vulnerability	Possible and frequent; low to medium vulnerability	Probable if mitigation is not implemented; medium vulnerability	Definite and continuous regardless of preventative measures; high vulnerability

6.2.5 Significance

Impact significance is determined through a synthesis of the impact characteristics described above. The significance of an impact “without mitigation” is the primary determinant of the nature and degree of mitigation required. As stated in the introduction to this section, for this assessment, the significance of impacts without prescribed mitigation actions is measured.

Once the relevant factors (Table 5, Table 6, Table 7, and Table 8) have been ranked for each potential impact, the impact significance is assessed using the following formula:

SIGNIFICANCE POINTS (SP) = (MAGNITUDE + DURATION + SCALE) × PROBABILITY

The maximum value per potential impact is 100 significance points (SP). Potential impacts were rated as high, moderate, or low significance based on the significance rating scale presented in Table 9.

Table 9: Significance rating scale

Significance	Environmental Significance Points	Colour Code
High (positive)	>60	H
Medium (positive)	30–60	M
Low (positive)	1–30	L
Neutral	0	N
Low (negative)	-1 to -30	L
Medium (negative)	-30 to -60	M
High (negative)	<-60	H

Positive (+) – Beneficial impact

Negative (-) – Deleterious/adverse impact

Neutral – Impacts are neither beneficial nor adverse.

For impacts with a high negative significance rating, mitigation measures are recommended to reduce the impact to medium or low negative significance, provided the impact can be sufficiently controlled. To maintain a low or medium significance rating, monitoring is recommended to confirm that impacts remain under control.

The assessment of project phases is conducted for both pre-mitigation and post-mitigation scenarios.

The risk/impact assessment is driven by three factors:

- **Source:** the cause or origin of the impact.
- **Pathway:** the route taken by the source to reach a receptor; and
- **Receptor:** a person, animal, plant, ecosystem, property, or water resource.

A pollutant linkage occurs when a source, pathway, and receptor exist together. Mitigation measures aim first to avoid risk, and where this is not possible, to minimise the impact. Once mitigation measures are applied, the identified risk is reduced to a lower significance level (Booth, 2011).

This assessment focuses on the three project phases, namely planning, construction, operation, and additional decommissioning. The potential negative impacts arising from the proposed facility activities are described, assessed, and mitigation measures are provided accordingly (Booth, 2011). Additional mitigation measures in the form of management action plans are included in the Draft Environmental Management Plan (EMP).

6.3 Assessment of Potential Negative Impacts

The main potential negative impacts associated with the construction, operation, and decommissioning phases of the proposed project are identified and assessed below.

6.3.1 Disturbance to Grazing Areas

The proposed processing facility site is located on community-managed land that supports livestock grazing and other communal land uses. Construction activities such as site clearing, installation of lined pads, excavation may result in temporary disturbance of grazing land. This may reduce the availability of land for livestock and wildlife that depend on existing vegetation.

The effect of construction activities on communal land use, particularly if conducted over a wider spatial extent and without mitigation, may hinder grazing availability and access (Booth, 2011). Under baseline conditions, the impact is considered to be of medium significance. With the implementation of appropriate mitigation measures, the significance of the impact will be reduced to low. The impact is assessed in Table 9 below.

Table 10: Assessment of impacts on grazing areas

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M: -4	M: -3	M: -4	M/H: 5	M: -55
Post-mitigation	L/M: -2	L/M: -2	L/M: -4	L/M: 3	L: -24

6.3.2 Land Degradation and Loss of Biodiversity

Fauna:

Construction and operational activities may result in habitat disturbance affecting small mammals, reptiles, birds, and invertebrates. Movement of machinery, vehicles, and personnel may disturb wildlife and livestock.

Flora:

Direct impacts on flora will occur through vegetation clearing for processing infrastructure and access routes. Dust deposition and soil disturbance may further affect surrounding vegetation. While vegetation loss is unavoidable within the footprint, the impact is expected to remain localised. Without mitigation, the impact is rated as medium significance. With effective mitigation measures, the impact significance will be reduced to low. The assessment is presented in Table 10 below.

Table 11: Assessment of impacts of construction works on biodiversity.

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M: -4	M: -4	M: -6	M/H: 4	M: -56
Post-mitigation	L/M: -3	L/M: -3	L/M: -4	L/M: 3	L: -30

6.3.3 Generation of Dust (Air Quality)

Dust may be generated from access roads, vehicle movements, loading and unloading of ore, and construction activities. Heavy vehicles transporting ore, reagents, and equipment may contribute to increased dust levels, potentially affecting workers and nearby receptors.

Without mitigation, the impact is of medium significance. With appropriate mitigation measures, including dust suppression and traffic management, the impact significance will be reduced to low. The impact is assessed in Table 12 below.

Table 12: Assessment of impacts of construction works on air quality.

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M: -3	M: -3	M/L: -4	M/H: 4	M: -40
Post-mitigation	L: -2	L: -2	L: -2	L: -1	L: -6

6.3.4 Water Resources Use

Processing activities will require water for operations, cleaning, and domestic use. Excessive abstraction may affect local groundwater resources relied upon by communities and livestock.

The impact is temporary and manageable. Without mitigation, the impact is rated as medium. With effective mitigation and recycling systems, the impact significance is reduced to low, as presented in Table 13 below.

Table 13: Assessment of project impacts on water resource use

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M: -3	M/H: -3	L/M: -4	M/H: -4	M: -40
Post-mitigation	L/M: -1	L/M: -1	L: -2	L/M: -3	L: -12

6.3.5 Soil and Water Resources Pollution (Chemical and Fuel Spills)

Potential pollution sources include sulphuric acid, process solutions, diesel fuel, lubricants, and residues generated during processing. Spills or leakages may infiltrate soils and contaminate groundwater if not properly contained. Prior to mitigation, the impact significance is medium to high. With implementation of containment and spill control measures, the impact is reduced to moderate. The assessment is shown in Table 14 below.

Table 14: Assessment of impacts on soils and water resources (pollution)

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M: -5	M/L: -3	M/L: -3	M: -4	M: -44
Post-mitigation	L: -3	M: -3	L: -3	L/M: -3	L: -27

6.3.6 Waste Generation

Construction and operation will generate domestic, general, and hazardous waste including residues, scrap metal, contaminated materials, and chemical containers. Improper handling may result in soil or groundwater pollution. Without mitigation, the impact is of medium significance. With effective waste management, the impact significance will be reduced to low (Table 15).

Table 15: Assessment of waste generation impact

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	L/M: -2	L/M: -2	M: -6	M: -5	M: -50
Post-mitigation	L: -1	L: -1	L: -2	L/M: -2	L: -8

6.3.7 Occupational Health and Safety Risks

Workers may be exposed to risks from machinery, chemical handling, acid exposure, and fire hazards. Without mitigation, the impact is of medium significance. With mitigation, the impact will be reduced to low (Table 16).

Table 16: Assessment of health and safety impacts

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M: -3	M/L: -2	M: -6	M/H: -4	M: -44
Post-mitigation	L/M: -2	L/M: -2	L: -2	L/M: -2	L: -12

6.3.8 Vehicular Traffic Use and Safety

Increased vehicle movement for transport of ore, reagents, and personnel may affect road safety and infrastructure. Without mitigation, the impact is medium; with mitigation, it is reduced to low (Table 17).

Table 17: Assessment of construction-related traffic impacts

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M: -4	M/H: -3	L/M: -4	M/H: -5	M: -55
Post-mitigation	L/M: -2	L/M: -2	L: -2	L/M: -2	L: -12

6.3.9 Noise and Vibrations

Noise from generators, pumps, and vehicles may disturb workers and nearby receptors. Without mitigation, the impact is medium; with mitigation, it is reduced to low (Table 18).

Table 18: Assessment of noise and vibration impacts

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	L/M: -2	L/M: -2	M: -6	M/H: -3	M: -30
Post-mitigation	L: -1	L/M: -2	L: -2	L/M: -2	L: -10

6.3.10 Disturbance to Archaeological and Heritage Resources

Unrecorded heritage resources may be uncovered during site preparation. Without mitigation, the impact is medium. With mitigation, it is reduced to low (Table 19).

Table 19: Assessment of impacts on archaeological and heritage resources

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M: -3	M/H: -4	M: -6	M/H: -4	M: -52
Post-mitigation	L/M: -2	L/M: -2	L: -2	L/M: -2	L: -12

6.3.11 Impact on Local Roads/Routes

Heavy vehicles may affect road conditions during construction. Without mitigation, the impact is medium; with mitigation, it is reduced to low (Table 19).

Table 20: Assessment of impacts on local roads

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M/H: -4	M: -3	M: -6	M: -3	M: -39
Post-mitigation	L: -1	L: -1	M/L: -4	M/L: -2	L: -12

6.3.12 Social Nuisance: LLocal Disturbance and Influx of Job Seekers

Non-resident workers and project-related activities may cause disturbance or social pressure. Without mitigation, the impact is medium; with mitigation, it is reduced to low (Table 20).

Table 21: Assessment of social nuisance impacts

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M: -2	M: -3	M: -4	M/H: -3	M: -27
Post-mitigation	L: -1	L: -1	M/L: -4	M/L: -2	L: -12

6.4 Cumulative Impacts Associated with the Proposed Activity

Cumulative impacts are defined as impacts resulting from successive, incremental, or combined effects of a project when added to other existing or planned developments within the same area (IFC, 2013). These impacts may not be significant when considered individually but may become more pronounced when considered collectively over time and space. The assessment of cumulative impacts therefore considers the interaction between the proposed facility and other land uses, infrastructure, and activities within the broader project area. The main cumulative impacts associated with the proposed processing facility include:

Road infrastructure

The project will require transportation of ore, reagents, equipment, and personnel to and from the site. When combined with existing local traffic, particularly heavy vehicles associated with agricultural, mining, or community activities, the increased traffic may contribute cumulatively to road wear, congestion, and safety risks.

Water resource use

Groundwater is the primary water source in the region and is already used for domestic, agricultural, and livestock purposes. Additional abstraction for processing activities may contribute cumulatively to pressure on limited groundwater resources, particularly during dry seasons or drought periods. Although the project's water demand is moderate, inefficient use or leakage could exacerbate regional water stress. Implementation of water conservation measures, recycling of process water, and responsible abstraction practices will reduce cumulative impacts to acceptable levels.

Air quality (dust and emissions)

Dust generated from vehicle movement, material handling, and site operations may combine with dust from existing roads, settlements, and nearby activities. This may contribute cumulatively to reduced local air quality and nuisance conditions. Due to the small footprint of the facility and the implementation of dust suppression measures, the cumulative effect on regional air quality is expected to remain low and localised.

Land disturbance and habitat loss.

Vegetation clearing and soil disturbance associated with the facility may add to other existing disturbances in the area, such as grazing, tracks, or small-scale development. Collectively, these disturbances may contribute to gradual habitat modification and soil erosion if not effectively managed. However, as the proposed footprint is limited and rehabilitation measures will be implemented, cumulative impacts on biodiversity and land condition are expected to remain minimal.

Waste generation

Waste streams from the facility, including domestic waste, scrap materials, and hazardous waste, may add cumulatively to regional waste management pressures if not properly disposed of. Improper disposal could increase risks of pollution or illegal dumping. Adherence to integrated waste management practices and use of licensed disposal facilities will ensure that cumulative waste-related impacts are effectively controlled.

Socio-economic effects

The project may contribute cumulatively to positive socio-economic impacts when considered alongside other developments. These include local employment creation, skills transfer, procurement of local services, and stimulation of small business activities. Such benefits may enhance livelihoods and contribute to regional economic growth.

7 RECOMMENDATIONS AND CONCLUSION

7.1 Recommendations

The potential positive and negative impacts of the proposed activities were identified and assessed, and appropriate management and mitigation measures (to negative impacts) were made thereof for implementation by the Proponent, their contractors, and project-related employees.

Mitigation measures for identified issues have been provided in the Environmental Management Plan (EMP), for the Proponent to avoid and/or minimise significant impacts on the environmental and social components. Most of the potential impacts were found to be of medium-rating significance. With effective implementation of the recommended management and mitigation measures, a reduced rating in the significance of adverse impacts is expected from Medium to Low (MET, 2012). To maintain the desirable rating, the implementation of management and mitigation measures should be monitored by the Proponent directly, or their appointed Environmental Control Officer (ECO). The monitoring of implementation will not only be undertaken to maintain a low rating but also to ensure that all potential impacts identified in this study, as well as any other impacts that might arise during construction, operation, and decommissioning, are properly identified in time and addressed accordingly (MET, 2012).

The Environmental Consultant is confident that the potential negative impacts associated with the proposed project can be managed and mitigated through the effective implementation of the recommended management and mitigation measures, together with consistent effort and commitment to monitoring the implementation of these measures (MET, 2012).

It is, therefore, recommended that in the case of granting an Environmental Clearance Certificate (ECC) for this project, the proposed establishment and operation of the copper processing facility may be granted an ECC, provided that:

- All the management and mitigation measures provided in the EMP are effectively and progressively implemented.
- All required permits, licences, and approvals for the proposed activities are obtained as required. These include approvals relating to land access agreements, water abstraction permits, chemical storage authorisations, waste management compliance, and other statutory requirements applicable to construction and operation of the processing facility and associated infrastructure.
- The Proponent and all project workers and contractors must comply with the legal requirements governing the project and ensure that all required permits and/or approvals are obtained and renewed as stipulated by the issuing authorities.
- Hazardous substances, including sulphuric acid, fuels, and process chemicals, are stored, managed, and transported in accordance with applicable safety and environmental standards to prevent contamination or accidents.
- Site areas where activities have ceased are rehabilitated, as far as practicable, to their pre-state, including removal of temporary infrastructure, regrading of disturbed areas, and re-vegetation where appropriate.

7.2 Conclusion

It is crucial for the Proponent and their contractors to effectively implement the recommended management and mitigation measures to protect the biophysical and social environment throughout the project duration. This will be undertaken to promote environmental sustainability while ensuring a safe and responsible operation of the copper processing facility within the surrounding community and environment at large. It is also to ensure that all potential impacts identified in this study and other impacts that might arise during implementation are properly identified in time and addressed accordingly. The project is therefore considered environmentally acceptable, provided that all recommended management actions and regulatory requirements are strictly adhered to. Lastly, should the ECC be issued, the Proponent will be expected to comply with the ECC conditions as well as all legal requirements governing the construction, operation, and related activities of the proposed project.

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