APP 005831

ENVIRONMENTAL SCOPING ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN FOR THE TRANSPORT, STORAGE AND HANDLING OF INDUSTRIAL CARGO AND CHEMICALS ON ERVEN 6418, 5163, 5164 AND 5165, EXTENSION 14, WALVIS BAY

ENVIRONMENTAL ASSESSMENT SCOPING REPORT

Assessed by:

Assessed for:

May 2025

Project:	**ENVIRONMENTAL SCOPING ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN FOR THE TRANSPORT, STORAGE AND HANDLING OF INDUSTRIAL CARGO AND CHEMICALS ON ERVEN 6418, 5163, 5164 AND 5165, EXTENSION 14, WALVIS BAY**	
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Report Approval	 **André Faul** Conservation Ecologist	

I Kai Schnaitmann acting as the Proponent's representative (Transworld Cargo (Pty) Ltd), hereby approve this report and confirm that the project description contained in herein is a true reflection of the information which the Proponent has provided to Geo Pollution Technologies. All material information in the possession of the Proponent that reasonably has or may have the potential of influencing any decision or the objectivity of this assessment is fairly represented in this report.

Signed at Walvis Bay on the 23 day of May 2025.

Transworld Cargo (Pty) Ltd Company Registration

EXECUTIVE SUMMARY

Transworld Cargo (Pty) Ltd (the Proponent) plans to construct a storage facility for the storage and handling of industrial cargo, chemicals and products on erven 6418, 5163, 5164 and 5165, Walvis Bay, Erongo Region. The chemicals and products will be exported out- and imported into Namibia and will include marine-grade oils, greases, and lubricants for offshore vessels and rigs, frozen and refrigerated cargo, storage containers, mining metals and ores, and chemicals for various mines and industries in Namibia and southern Africa. The Proponent also plans to link to the national rail network by constructing a dedicated siding at the erven. This will allow rail transport and alleviate additional pressure on the Namibian road network.

The Proponent requested Geo Pollution Technologies (Pty) Ltd to conduct an environmental scoping assessment for the construction of the warehouse and the related cargo transport, storage and handling operations. This assessment examines construction activities, transport, storage and handling processes for the different types of cargo, and the overall day-to-day operational activities. The study aims to identify and assess environmental, safety, health and socio-economic impacts associated with the property and operations of the facility. Relevant environmental data has been collected through secondary sources and a reconnaissance site visit, allowing the identification of potential environmental and social impacts, which are addressed in this report.

Given the nature of the proposed operations, various impacts on the surrounding environment are anticipated. These impacts can be both positive and negative. Consequently, regular environmental performance monitoring is recommended to enhance positive impacts and prevent or mitigate negative ones, ensuring regulatory compliance and implementation of corrective measures as necessary.

The Proponent's planned construction activities and future operations will play a crucial role within Namibia, and the larger Southern African Development Community (SADC), by providing services to, among others, the oil, gas and mining industries. This has the potential to bring significant direct economic benefits to Walvis Bay and Namibia at large. Various permits and levies associated with the transport of industrial cargo will be paid. The trucking industry will support multiple service centres, purchase tyres and fuel, and truck drivers will patronise local businesses for food and goods. Additionally, the facility will create jobs, boosting the local workforce's spending power. The Proponent will generate profits and contribute to economic growth of Namibia through the payment of taxes. The Port of Walvis Bay will benefit from an increased number of vessels calling at the Port, as well as providing stevedore services for unloading of vessels. The proposed warehouse construction and operations will likely attract further investments and business opportunities in the town. Various consultants and subcontractors will be engaged to supply specific services and goods to the facility. Indirectly, the development of the oil, gas and mining industries, can have long term benefits to Namibia.

The primary concerns related to the facility's operations include health impacts from exposure to industrial cargo and chemicals (vapours, dust and dermal contact), increased traffic, noise and fire hazards. However, these issues can be mitigated through preventative measures and adherence to international best practice standards and guidelines relevant to the facility. Storing and handling of all products in enclosed warehouses, prevent potential dust impacts. Additionally, all loads entering and leaving the warehouse should be adequately covered, if not contained in containers or bulk bags. Noise levels should comply with health and safety regulations outlined in the Labour Act and/or World Health Organization standards for community noise. By employing local contractors and workers and implementing educational programs, the positive socio-economic impacts can be maximized, while mitigating negative ones.

The environmental management plan (EMP) included in section 10 of this document should be used as a reference during all phases of the facility's construction and operations. All monitoring and records should be documented in a report to ensure compliance with the EMP. Parties responsible for any transgressions of the EMP should be held accountable for any necessary rehabilitation. A health, safety, environment, and quality policy, or a similar document, should be used alongside the EMP. Contractors, operators and responsible personnel must be trained on the contents of these documents. Municipal or national regulations and guidelines must be adhered to and monitored regularly as outlined in the EMP.

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
DNEL	Derived No-Effect Level
DWA	Department of Water Affairs
EIA	Environmental Impact Assessment
EMA	Environmental Management Act No 7 of 2007
EMP	Environmental Management Plan
EMS	Environmental Management System
GPT	Geo Pollution Technologies
HIV	Human Immunodeficiency Virus
IAPs	Interested and Affected Parties
IBC	Intermediate Bulk Container
IBL	Internal Boundary Layer
IUCN	International Union for Conservation of Nature
m/s	Meter per second
MABL	Marine Atmospheric Boundary Layer
mbs	Meters below surface
MEFT	Ministry of Environment, Forestry and Tourism
mm/a	Millimetres per annum
mm/a	Millimetres per annum
MSDS	Material Safety Data Sheet
NaCl	Sodium chloride
NIOSH	National Institute for Occupational Safety and Health
OEL	Occupational Exposure Limits
OSHA	Occupational Safety and Health Administration
PBL	Planetary Boundary Layer
PEL	Permissible Exposure Level
PM	Particle matter
PPE	Personal Protective Equipment
ppm	Parts per million
REL	Recommended Exposure Level
SADC	Southern African Development Community
SAH	South Atlantic High
SANS	South African National Standards
SO_2	Sulfur dioxide
SOLAS	Safety of Life at Sea
STEL	Short Term Exposure Limits
TIBL	Thermal Internal Boundary Layer
TWA	Time weighted averages
WEL	Workplace Exposure Limits
WHO	World Health Organization

GLOSSARY OF TERMS

Alternatives - A possible course of action, in place of another, that would meet the same purpose and need but which would avoid or minimize negative impacts or enhance project benefits. These can include alternative locations/sites, routes, layouts, processes, designs, schedules and/or inputs. The "no-go" alternative constitutes the 'without project' option and provides a benchmark against which to evaluate changes; development should result in net benefit to society and should avoid undesirable negative impacts.

Assessment - The process of collecting, organising, analysing, interpreting and communicating information relevant to decision making.

Competent Authority - means a body or person empowered under the local authorities act or Environmental Management Act to enforce the rule of law.

Construction - means the building, erection or modification of a facility, structure or infrastructure that is necessary for the undertaking of an activity, including the modification, alteration, upgrading or decommissioning of such facility, structure or infrastructure.

Cumulative Impacts - in relation to an activity, means the impact of an activity that in itself 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.

Environment - As defined in the Environmental Assessment Policy and Environmental Management Act - "land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, palaeontological or social values".

Environmental Impact Assessment (EIA) - process of assessment of the effects of a development on the environment.

Environmental Management Plan (EMP) - A working document on environmental and socio-economic mitigation measures, which must be implemented by several responsible parties during all the phases of the proposed project.

Environmental Management System (EMS) - An Environment Management System, or EMS, is a comprehensive approach to managing environmental issues, integrating environment-oriented thinking into every aspect of business management. An EMS ensures environmental considerations are a priority, along with other concerns such as costs, product quality, investments, PR productivity and strategic planning. An EMS generally makes a positive impact on a company's bottom line. It increases efficiency and focuses on customer needs and marketplace conditions, improving both the company's financial and environmental performance. By using an EMS to convert environmental problems into commercial opportunities, companies usually become more competitive.

Evaluation – means the process of ascertaining the relative importance or significance of information, the light of people's values, preference and judgements in order to make a decision.

Gangue Material – unwanted material that surrounds, or is closely mixed with, a wanted mineral in an ore deposit or minded ore.

Hazard - Anything that has the potential to cause damage to life, property and/or the environment. The hazard of a particular material or installation is constant; that is, it would present the same hazard wherever it was present.

Interested and Affected Party (IAP) - any person, group of persons or organisation interested in, or affected by an activity; and any organ of state that may have jurisdiction over any aspect of the activity.

Metal Ore – For purposes of this document "metal ore" refers to any one or combination of copper, manganese, nickel, lithium, chrome and zinc, as well as cobalt hydroxide. Copper can also include copper concentrates, anodes and cathodes.

Mitigate - The implementation of practical measures to reduce adverse impacts.

Proponent (Applicant) - Any person who has submitted or intends to submit an application for an authorisation, as legislated by the Environmental Management Act no. 7 of 2007, to undertake an activity or activities identified as a listed activity or listed activities; or in any other notice published by the Minister or Ministry of Environment, Forestry & Tourism.

Public - Citizens who have diverse cultural, educational, political and socio-economic characteristics. The public is not a homogeneous and unified group of people with a set of agreed common interests and aims. There is no single public. There are a number of publics, some of whom may emerge at any time during the process depending on their particular concerns and the issues involved.

Scoping Process - process of identifying: issues that will be relevant for consideration of the application; the potential environmental impacts of the proposed activity; and alternatives to the proposed activity that are feasible and reasonable.

Significant Effect/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.

Stakeholder Engagement - The process of engagement between stakeholders (the Proponent, authorities and IAPs) during the planning, assessment, implementation and/or management of proposals or activities. The level of stakeholder engagement varies depending on the nature of the proposal or activity as well as the level of commitment by stakeholders to the process. Stakeholder engagement can therefore be described by a spectrum or continuum of increasing levels of engagement in the decision-making process. The term is considered to be more appropriate than the term "public participation".

Stakeholders - A sub-group of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term therefore includes the Proponent, authorities (both the lead authority and other authorities) and all interested and affected parties (IAPs). The principle that environmental consultants and stakeholder engagement practitioners should be independent and unbiased excludes these groups from being considered stakeholders.

Sustainable Development - "Development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs and aspirations" – the definition of the World Commission on Environment and Development (1987). "Improving the quality of human life while living within the carrying capacity of supporting ecosystems" – the definition given in a publication called "Caring for the Earth: A Strategy for Sustainable Living" by the International Union for Conservation of Nature (IUCN), the United Nations Environment Programme and the World Wide Fund for Nature (1991).

1 INTRODUCTION

Geo Pollution Technologies (Pty) Ltd was appointed by Transworld Cargo (Pty) Ltd, hereafter referred to as the Proponent, to prepare an environmental scoping assessment (EIA) and environmental management plan (EMP) for the construction of a new warehouse and the subsequent transport, storage and handling of industrial chemicals and products on erven 6418, 5163, 5164 and 5165, Resource Street, Walvis Bay, Erongo Region (Figure 1-1). The chemicals and products will be exported out- and imported into Namibia and, among others, include marine grade oils, greases and lubricants for offshore vessels and rigs, metal ores, concentrates, anodes and cathodes, and chemicals for various mines and industries in Namibia and southern Africa.

General project components considered for the EIA comprise of construction, transport, operations and potential decommissioning activities. Typical operational activities will include transport, receipt, storage and distribution of bulk, break bulk and containerised cargo. Cargo will either be imported via the Port, for distribution in southern Africa, or received from clients in southern Africa, for export via the Port. A detailed project description and commodities list are presented in section 9.

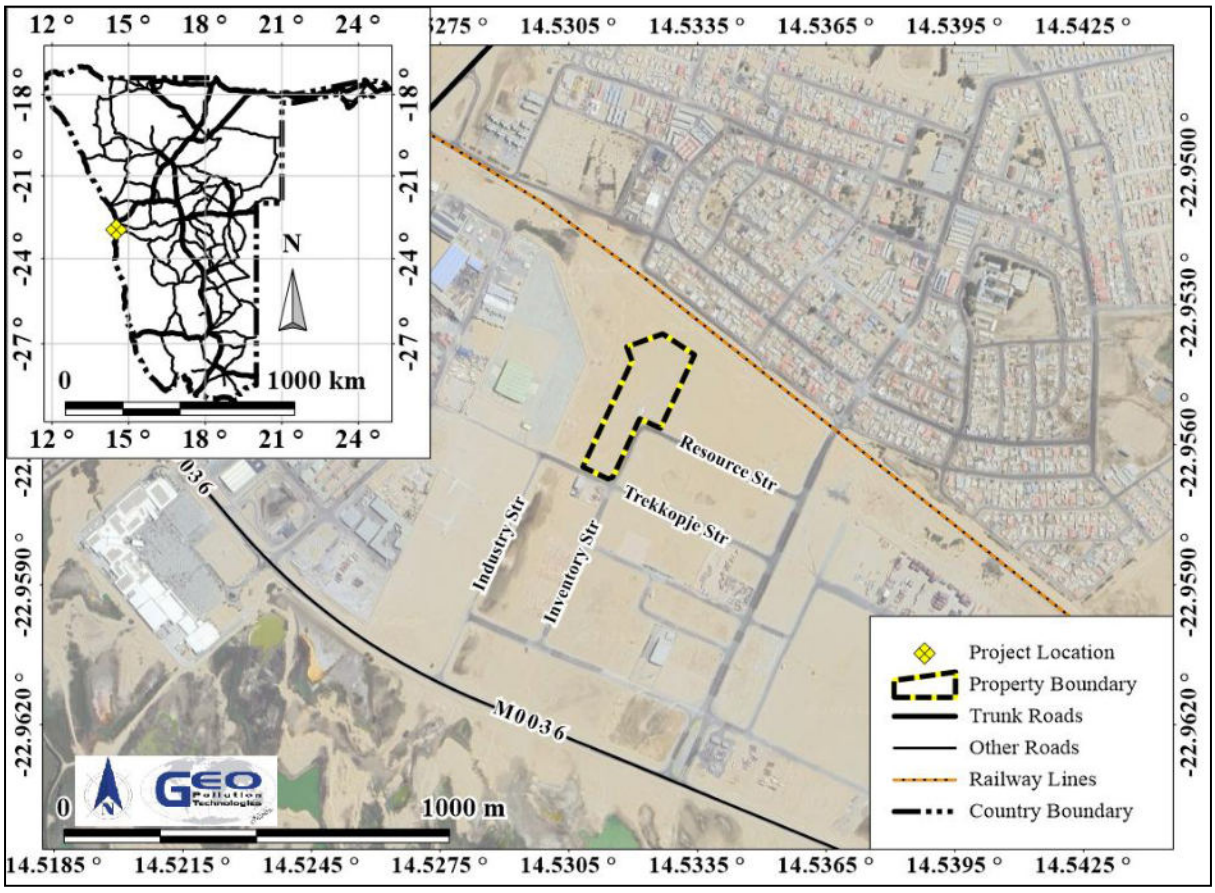

Figure 1-1 Project location

A risk assessment was undertaken to determine the potential impacts of the construction, operational and possible decommissioning phases associated with the project on the environment. The environment being defined in the Environmental Assessment Policy and Environmental Management Act as “land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, paleontological or social values”.

The environmental assessment was conducted to apply for an environmental clearance certificate in compliance with Namibia’s Environmental Management Act (Act No 7 of 2007) (EMA).

Project Justification – The Port of Walvis Bay has established itself as one of the most reliable and efficient ports of call in southern Africa. It is thus in a favourable position to serve not only Namibia, but also landlocked countries like Botswana, Zimbabwe, Zambia and the Democratic Republic of the Congo. Recent years have seen tremendous growth in the demand for port services for the export and import of, among others, metal ores and industrial cargo, mainly associated with the mining industry. There has lately also been significant growth in the demand for the import of chemicals. The construction and the new warehouse, will increase the Proponents storage capacity to facilitate the import and export of cargo. Through their operations, the Proponent will provide a valuable service to clients, while also aligning themselves with the Walvis Bay Corridor Group's aim of developing and promoting Namibia as the leading trade route for the Southern African Development Community (SADC). This is achieved through the established corridor routes connecting the Port of Walvis Bay with the rest of Namibian and southern Africa. The main benefits of the project include:

- Revenue generation for Walvis Bay and Namibia as a whole;
- Reliable export of mining products from mining sectors of Namibia and SADC countries;
- Reliable import of industrial cargo and chemicals into Namibia and SADC countries for mainly the mining and agricultural sectors;
- Employment, education and skills transfer;
- Diversification of economic activity;
- Potential inducement of additional investments and business opportunities.

2 SCOPE

The scope of the environmental assessment is to:

1. Determine the potential environmental impacts emanating from the activities proposed by the Proponent.
2. Identify a range of management actions which could mitigate the potential adverse impacts to acceptable levels.
3. Comply with Namibia's Environmental Management Act (2007).
4. Provide sufficient information to the Ministry of Environment, Forestry and Tourism (MEFT) and related authorities to make an informed decision regarding the proposed construction, operational activities and possible decommissioning of the facility.

3 METHODOLOGY

The following methods were used to investigate the potential impacts on the social and natural environment due to the construction and operations of the facility:

1. Baseline information about the site and its surroundings was obtained from existing secondary information and a reconnaissance site visit.
2. As part of the scoping process to determine potential environmental impacts, interested and affected parties (IAPs) were consulted about their views, comments and opinions and these are put forward in this report.
3. Based on gathered information and public and stakeholder consultation, an assessment of potential impacts was conducted and a management plan prepared.

4 PROJECT DESCRIPTION

The following sections provide details on the proposed construction and operational activities of the Proponent.

4.1 CONSTRUCTION

The property comprises of four erven namely 6418, 5165, 5164, and 5163 covering a combined area of approximately 40,000 m². The Proponent is currently in the process of consolidating these erven into a single large property. The initial development will take place on Erf 6418, which spans 26,042 m², and will involve the construction of a warehouse facility designed for receiving,

storing, and distributing industrial cargo and related products. The development will include a ground floor warehouse measuring 6,496.60 m², a two-storey office building with a total floor area of 827 m², and two guard houses, each covering 44.60 m². A dedicated railway siding will be constructed to facilitate rail transport and allow direct loading and offloading of cargo to and from rail cars at the erf. Additionally, he site will feature 10 loading bays and 120 parking bays. A detailed site layout plan is provided in Figure 4-1.

Photo 4-1 Site preparation at erf 6418

Photo 4-2 Erf 6418 foundation preparation before construction commences

Photo 4-3 Temporary site office and toilet

Photo 4-4 Erven 5165, 5164 and 5163

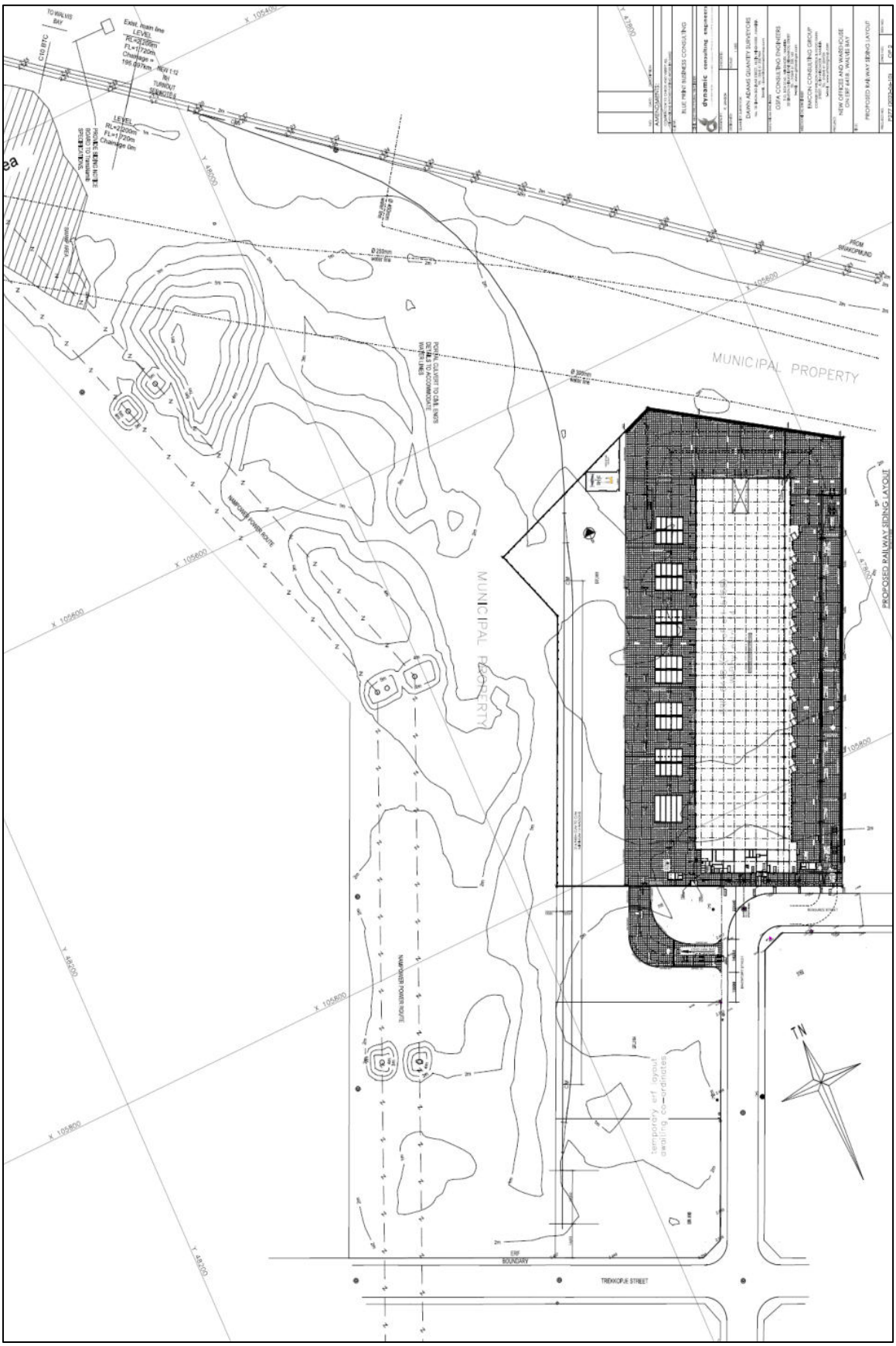

Figure 4-1 Proposed site layout diagram

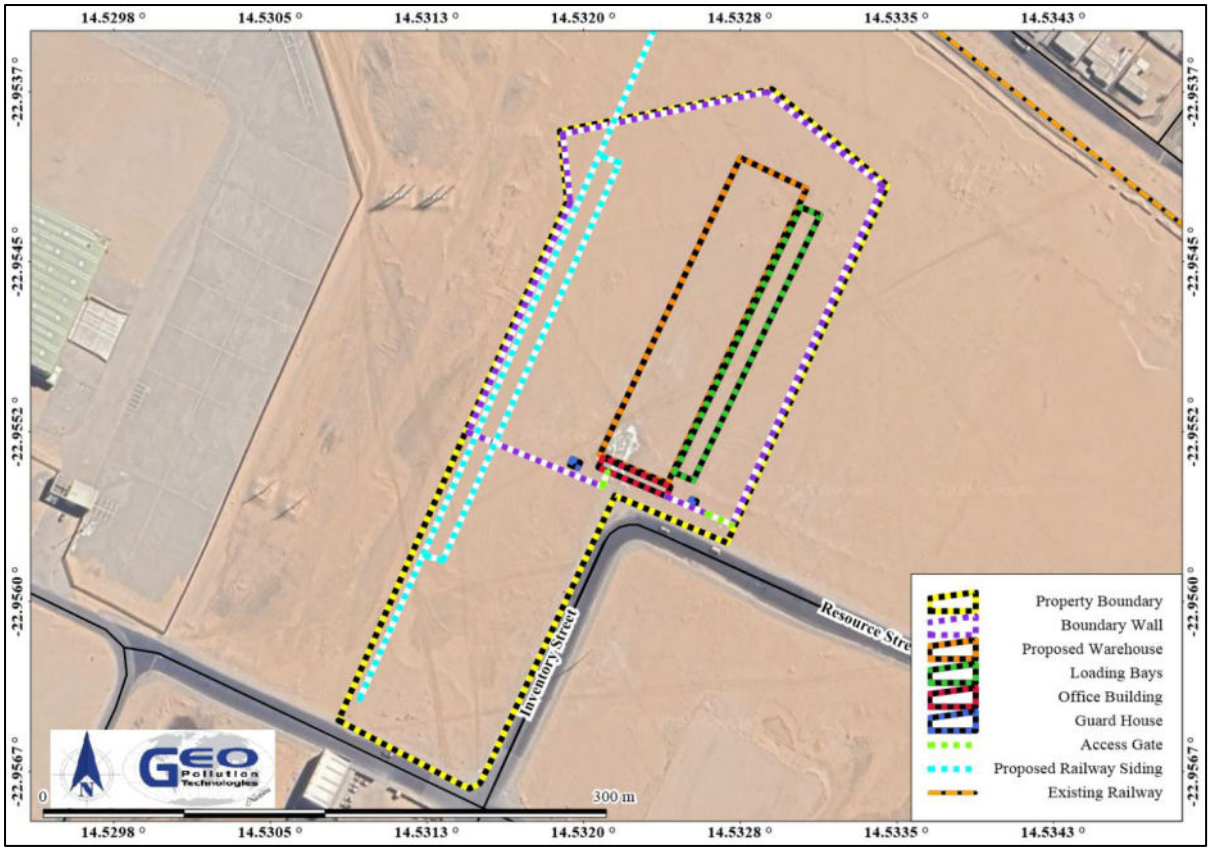

Figure 4-2 Site layout aerial view

4.2 PLANNED OPERATIONAL ACTIVITIES

The facility will function as a receipt, storage, and handling facility for the import and export of cargo. The following will be a brief description of the operations.

4.2.1 Cargo Types

Cargo that will be stored and handled on site may include marine-grade oils, greases, and lubricants for offshore vessels and rigs; metal ores, concentrates, anodes, and cathodes; as well as chemicals for various mines and industries in Namibia and southern Africa. An inventory of products are listed in Table 9-1. The inventory of cargo handled and stored at any given time will vary depending on customer demands. It is therefore possible that only some of the products will be stored and handled at certain times, but provision will be made in this assessment for all products mentioned. It is also possible that a demand for additional products will arise in the future, in which case such products will be added to the list of products the Proponent will handle.

4.2.1 Cargo Handling and Storage

Industrial cargo and products will be transported to the facility as bulk, break-bulk, or containerised cargo using trucks. Upon arrival, trucks will be offloaded in designated areas based on the type of cargo.

Bulk cargo, such as metal ores which are not contained, will typically be transported in skips or tipper trucks. It will be stored as “loose” product in the warehouse in dedicated areas and will therefore typically require front-end loaders for stockpiling and reloading of skips or tipper trucks.

Break-bulk cargo, which is unitised and “packaged,” will include bulk bags, smaller bags, drums, and containers. For the Proponent’s operations, break-bulk cargo will mainly consist of 50 kg bags, bulk bags (flexible intermediate bulk containers), drums, and 1,000-litre intermediate bulk containers (IBCs). Bulk bags, also known as flexible intermediate bulk

containers (FIBCs), will be used for storing and transporting large quantities of dry bulk materials, typically ranging from 500 to 2,000 kg. These will be available in various designs, including duffle top, spout top, and open top. The 50 kg bags will typically be stacked on pallets and wrapped with plastic.

Drums, also referred to as barrels, will be cylindrical containers made of metal, plastic, or fibre, commonly used for chemical storage. They will generally be kept upright and can be palletised for ease of handling. Forklifts will be used to transport and stack drums, with a maximum stacking height of four drums per pallet.

Intermediate bulk containers will be cube-shaped containers with a storage capacity of up to 1,000 litres, commonly used for both hazardous and non-hazardous liquid storage. They will be mounted on metal or wooden pallets for easy transport using forklifts. A surrounding metal frame will enhance stacking capability and stability.

For containerised cargo, shipping containers will typically be stuffed (filled) with bagged or packaged products. This will allow for easier transport of products while also protecting the cargo from environmental elements such as moisture and sunlight. Specialised tank containers conforming to International Organization for Standardization (ISO) specifications (generally referred to as “ISO Tank Containers” or “tanktainers”) will be used for bulk transportation of hazardous and non-hazardous liquids such as edible oils and lubrication fluids. An ISO tank container will have a stainless steel tank enclosed in a protective steel frame and will be 6 m in length.

The Proponent will decant liquid cargo into different containers as per customers’ demands. This will involve decanting from small containers into ISO tank containers as well as from ISO tank containers into smaller containers such as drums. Simultaneously with decanting, mixing of selected chemicals will also be conducted according to clients’ requirements. All decanting operations will take place on impermeable and bunded surfaces to ensure that any spills that may occur are contained. The Proponent will store bulk powders in silos before transferring them into bulk bags for distribution. This will include facilitating efficient handling by minimising contamination and ensuring controlled discharge into the bulk bags. Overhead dispensers will be used for filling, equipped with appropriate discharge mechanisms to ensure proper segregation and handling. Should a spill occur, it will be cleaned immediately and disposed of as contaminated hazardous waste at the Municipal hazardous waste disposal facility. All decanting and mixing operations will be conducted in accordance with their respective MSDS requirements.

Cement products will be received at the facility in bulk bags and smaller bags stacked on pallets. Upon arrival, bulk bags will be offloaded using forklifts and placed at the de-bagging station, where the contents will be discharged into a hopper. The hopper will be fitted with a screw conveyor system that transfers the cement into vertical silos for bulk storage. From the silos, cement will be loaded into tanker trucks using a gravity-fed or pneumatic conveying system, depending on the specifications of the receiving tanker.

Forklifts will be used for offloading and moving break-bulk cargo to their respective storage areas. Standard shipping containers and ISO tank containers will be offloaded and handled using reach stackers.

Depending on client requirements, cargo will be transported in its original packaging (e.g., as bulk cargo, in bulk bags, or in IBCs), or it will be repackaged into smaller containers. Storage methods will vary depending on the type of cargo and its hazard classification. All facility operations will adhere to the standard operational procedures of the Proponent and comply with the required industry standards.

4.2.2 Transport of Cargo

The Proponent will transport products via road and/or rail, in compliance with all relevant Namibian and international laws and best practices. Cargo movement will occur locally,

nationally, and across borders to neighbouring southern African countries, supporting regional trade and distribution. Break bulk and bulk cargo will be handled either directly by the Proponent or through appointed contractors, depending on logistical requirements and the nature of the cargo. Transport operations will strictly adhere to hazard classifications outlined in each product's material safety data sheet (MSDS), with safety measures embedded throughout the logistics chain. The Proponent has established emergency response plans for the transport of cargo which outlines preparedness, response, and recovery procedures in the event of an incident during transit. This includes clear roles and responsibilities for emergency response teams, coordination with local authorities, and mitigation actions aligned with the severity of the event, ensuring that transport activities are safely and effectively managed under all operating conditions.

4.2.3 Destruction of Obsolete Chemicals

As an additional service to clients, the Proponent will receive obsolete or contaminated chemicals from clients for safe disposal. Such products will be received and temporarily stored on site. Once sufficient volumes are accumulated, an authorised contractor will collect the products and dispose of them at the hazardous waste disposal site of the Municipality. Disposal will adhere to the Municipality's requirements, and safe disposal certificates will be issued.

4.2.4 Maintenance and Upgrades

Throughout operations, regular inspections and maintenance of the on-site infrastructure will be carried out. This will include activities such as routine cleaning and painting of structures. Certain infrastructure may be replaced or upgraded as needed. During these maintenance and upgrade activities, some waste may be generated that will require appropriate disposal

4.2.5 General

The workforce present on site will consist of approximately 30 workers to cover all shifts. Employees will include managers, supervisors, administrative staff, equipment operators (forklift, reach stacker), security personnel, and general workers.

Potable water will be supplied by NamWater via the Municipality of Walvis Bay. Electricity will be supplied by NamPower through Erongo RED. Domestic and general waste will be disposed of at the waste disposal site of the Municipality of Walvis Bay. Authorised and experienced third-party contractors will be used to safely dispose of hazardous waste or contaminated products, where such wastes are present on site. This will include torn bulk bags or bulk bags that have reached the end of their usable life, as well as obsolete chemicals and products.

5 ALTERNATIVES

The EMA and its regulations require any proposed development to consider various alternatives proposed within a project framework, to ensure, as far as is practically achievable, the most suited and environmentally sustainable options are chosen. Various alternatives related to the project have been considered and each of these alternatives is discussed. The alternatives can roughly be grouped into two main groups, namely:

- Utility alternative
- Building materials alternatives;
- No go alternative.

5.1 UTILITY ALTERNATIVES

In planning the electrical supply for the new warehouse, the integration of solar power alongside the planned supply sourced directly from NamPower through ErongoRED presents a viable alternative. This approach will involve a comprehensive site assessment to gauge solar generation capacity, installation of essential infrastructure such as solar panels and batteries, and adherence to local regulatory standards. From an economic standpoint, it will necessitate an analysis of the

upfront costs against anticipated long-term savings, with the exploration of government incentives to potentially mitigate the initial financial outlay. The utilisation of solar power will not only aid in decreasing carbon emissions, but also bolster energy independence, which is particularly advantageous during instances of power supply disruptions from NamPower. Furthermore, the implementation of energy-conserving measures such as LED lighting, high-efficiency appliances, and intelligent sensors can significantly reduce overall electricity usage.

5.2 BUILDING MATERIAL ALTERNATIVES

For the construction of the new warehouse and offices in an environment characterised by high corrosion and significant temperature variations, the selection of building materials that provide effective insulation and corrosion resistance is important. Stainless steel or galvanized steel may be utilised for structural components, offering superior corrosion resistance. Closed-cell spray foam, known for its high thermal resistance and moisture barrier properties, stands as a viable option for insulation, especially beneficial in mitigating the impacts of cold climates. The incorporation of fibre cement siding for external cladding can extend durability and further resist corrosion when compared to conventional materials. The adoption of these materials will not only safeguard the building and stored products from environmental challenges, but also improve the overall energy efficiency and extend the lifespan of the infrastructure.

5.3 THE NO-GO ALTERNATIVE

The "No-Go" alternative is the option of not proceeding with the project and it typically means the current status quo of the site and surrounds will remain. Should the proposed development not commence, none of the potential impacts (positive and negative) identified would occur. Importantly, the benefits of revenue generation and employment, as well as support for the exploration and mining industries would not occur.

6 ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS

To protect the environment and achieve sustainable development, all projects, plans, programmes and policies deemed to have adverse impacts on the environment require an environmental assessment, as per the Namibian legislation. The legislation and standards provided Table 6-1 to Table 6-4 govern the environmental assessment process in Namibia and/or are relevant to the facility.

Table 6-1 Namibian law applicable to the facility and related operations

Law	Key Aspects
The Namibian Constitution	♦ Promotes the welfare of people ♦ Incorporates a high level of environmental protection ♦ Incorporates international agreements as part of Namibian law
Environmental Management Act Act No. 7 of 2007, Government Notice No. 232 of 2007	♦ Defines the environment ♦ Promotes sustainable management of the environment and the use of natural resources ♦ Provides a process of assessment and control of activities with possible significant effects on the environment
Environmental Management Act Regulations Government Notice No. 28-30 of 2012	♦ Commencement of the Environmental Management Act ♦ List activities that requires an environmental clearance certificate ♦ Provides Environmental Impact Assessment Regulations
Road Traffic and Transport Act Act No. 52 of 1999 Government Notice No. 282 of 1999	♦ Provides for the control of traffic on public roads and the regulations pertaining to road transport

Law	Key Aspects
Road Traffic and Transport Regulations Government Notice No 53 of 2001	♦ Prohibits the transport of goods which are not safely contained within the body of the vehicle; or securely fastened to that vehicle, and which are not properly protected from being dislodged or spilled from that vehicle
Marine Resources Act Act No. 27 of 2000; Government Notice No. 292 of 2000	♦ Provides for the conservation of the marine ecosystem and the responsible administration, conservation, protection and promotion of marine resources on a sustainable basis
Water Resources Management Act Act No. 11 of 2013; Government Notice No. 332 of 2013	♦ Provides for management, protection, development, use and conservation of water resources ♦ Prevention of water pollution and assignment of liability
Local Authorities Act Act No. 23 of 1992, Government Notice No. 116 of 1992	♦ Defines the powers, duties and functions of local authority councils ♦ Regulates discharges into sewers
Public and Environmental Health Act Act No. 1 of 2015, Government Notice No. 86 of 2015	♦ Provides a framework for a structured more uniform public and environmental health system, and for incidental matters ♦ Deals with Integrated Waste Management including waste collection disposal and recycling; waste generation and storage; and sanitation
Labour Act Act No 11 of 2007, Government Notice No. 236 of 2007	♦ Provides for Labour Law and the protection and safety of employees ♦ Labour Act, 1992: Regulations relating to the health and safety of employees at work (Government Notice No. 156 of 1997)
Atmospheric Pollution Prevention Ordinance Ordinance No. 11 of 1976	♦ Governs the control of noxious or offensive gases ♦ Prohibits scheduled process without a registration certificate in a controlled area ♦ Requires best practical means for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled process
Hazardous Substances Ordinance Ordinance No. 14 of 1974	♦ Applies to the manufacture, sale, use, disposal and dumping of hazardous substances as well as their import and export ♦ Aims to prevent hazardous substances from causing injury, ill-health or the death of human beings
Pollution Control and Waste Management Bill (draft document)	♦ Not in force yet ♦ Provides for prevention and control of pollution and waste ♦ Provides for procedures to be followed for licence applications
Foreign Investment Act 27 of 1990 (as amended by Foreign Investment Amendment Act 24 of 1993)	♦ Provides for the promotion of foreign investment in Namibia ♦ Considers environmental impacts associated with foreign investments.
Draft Wetland Policy of 2003	♦ Considering the proximity of the Walvis Bay Lagoon, a RAMSAR site, the Wetland Policy of 2003 is of importance and includes protection and conservation of wetlands and ecosystems.
National Marine Pollution Contingency Plan of 2017	♦ Coordinated and integrated national system for dealing with oil and other spills in Namibian waters.

Table 6-2 Municipal by-laws, guidelines and regulations

Municipal By-laws, Guidelines or Regulations	Key Aspects
Integrated Urban Spatial Development Framework for Walvis Bay	♦ Overall vision to transform Walvis Bay to being the primary industrial city in Namibia ♦ Aims to ensure that appropriate levels of environmental management is enforced for all developments in Walvis Bay
Integrated Environmental Policy of Walvis Bay (Agenda 21 Project)	♦ Indicates the directions that the Municipality of Walvis Bay will move towards in the forthcoming years to fulfil its responsibilities to manage the environment of Walvis Bay together with the town's residents and institutions ♦ Strong focus on conservation and protection of environment
Municipal By-law 19 and 20 on Effluents Entering Sewers	♦ Regulates the discharge of effluent into sewers and prohibits the introduction of certain wastes or products including steam into the sewers system.
Town Planning Scheme No. 35	♦ Manages and regulates development related to land use ♦ Proposes and identifies areas for specific future land use

Table 6-3 Relevant multilateral environmental agreements

Agreement	Key Aspects
Benguela Current Convention of 2013	♦ The Convention is a formal treaty between the governments of Angola, Namibia and South Africa that sets out the countries' intention "to promote a coordinated regional approach to the long-term conservation, protection, rehabilitation, enhancement and sustainable use of the Benguela Current Large Marine Ecosystem, to provide economic, environmental and social benefits."
Convention on Biological Diversity (CBD)	♦ Primary goal is the conservation of biodiversity ♦ Prescribes the precautionary principle ♦ Parties to the convention are obliged to: ♦ Establish a network of protected areas; o Create buffer areas adjacent to these protected areas using environmentally sound and o sustainable development practices; and ♦ Rehabilitate degraded habitats and populations of species.
The Convention on Wetlands of International Importance especially as Waterfowl Habitat (referred as the RAMSAR Convention)	♦ It is a framework for international cooperation in the conservation and wise use of wetlands and their resources. ♦ Recognizes the Walvis Bay Nature Reserve – a tidal lagoon consisting of Pelican Point, adjacent intertidal areas, sandbars serving as roosting sites and mudflats exposed during low tide (12,600 ha) as a Wetland of International Importance.

Stockholm Declaration on the Human Environment, Stockholm 1972	♦ Recognizes the need for a common outlook and common principles to inspire and guide the people of the world in the preservation and enhancement of the human environment
1985 Vienna Convention for the Protection of the Ozone Layer	♦ Aims to protect human health and the environment against adverse effects from modification of the Ozone Layer are considered ♦ Adopted to regulate levels of greenhouse gas concentration in the atmosphere
United Nations Framework Convention on Climate Change (UNFCCC)	♦ The Convention recognises that developing countries should be accorded appropriate assistance to enable them to fulfil the terms of the Convention

Table 6-4 Standards or codes of practise

Standard or Code of Practise	Key Aspects
International Dangerous Goods Code (IMDG Version 10 of 2010)	♦ For handling and storage of dangerous cargo
Various Seafaring Codes and Standards	♦ The transport of cargo at sea is regulated by numerous codes and standards. Key to the Proponent are those pertaining to the loading and transport of cargo like the International Convention for the Safety of Life at Sea (SOLAS), 1974 which has the regulations: o Chapter VI - Carriage of cargoes o Chapter VII - Carriage of dangerous goods

The project is listed as an activity requiring an environmental clearance certificate as per the following points from:

Section 9 of Government Notice No. 29 of 2012: Hazardous Substance Treatment, Handling and Storage

- 9.1 "The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974."
- 9.4 "The storage and handling of a dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters at any one location."
- 9.5 "Construction of filling stations or any other facility for the underground and aboveground storage of dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin."

7 ENVIRONMENTAL CHARACTERISTICS

This section lists pertinent environmental characteristics of the study area and provides a statement on the potential environmental impacts on each.

7.1 LOCALITY AND SURROUNDING LAND USE

The facility is located within the industrial area of Walvis Bay (22.955063 °S and 14.532191 °E). The erven is zoned for light industrial use with the primary use including "warehouse" and "storage premises". The property is located in a new development area in Walvis Bay, with no direct neighbours at the moment of writing this report. The entrance to the commercial harbour of the Port of Walvis Bay is 3 km west of the erven. Walvis Bay itself is surrounded by the Dorob National Park, with the Namib Naukluft Park further to the east. See Figure 7-2 for features of interest in the larger area around Walvis Bay.

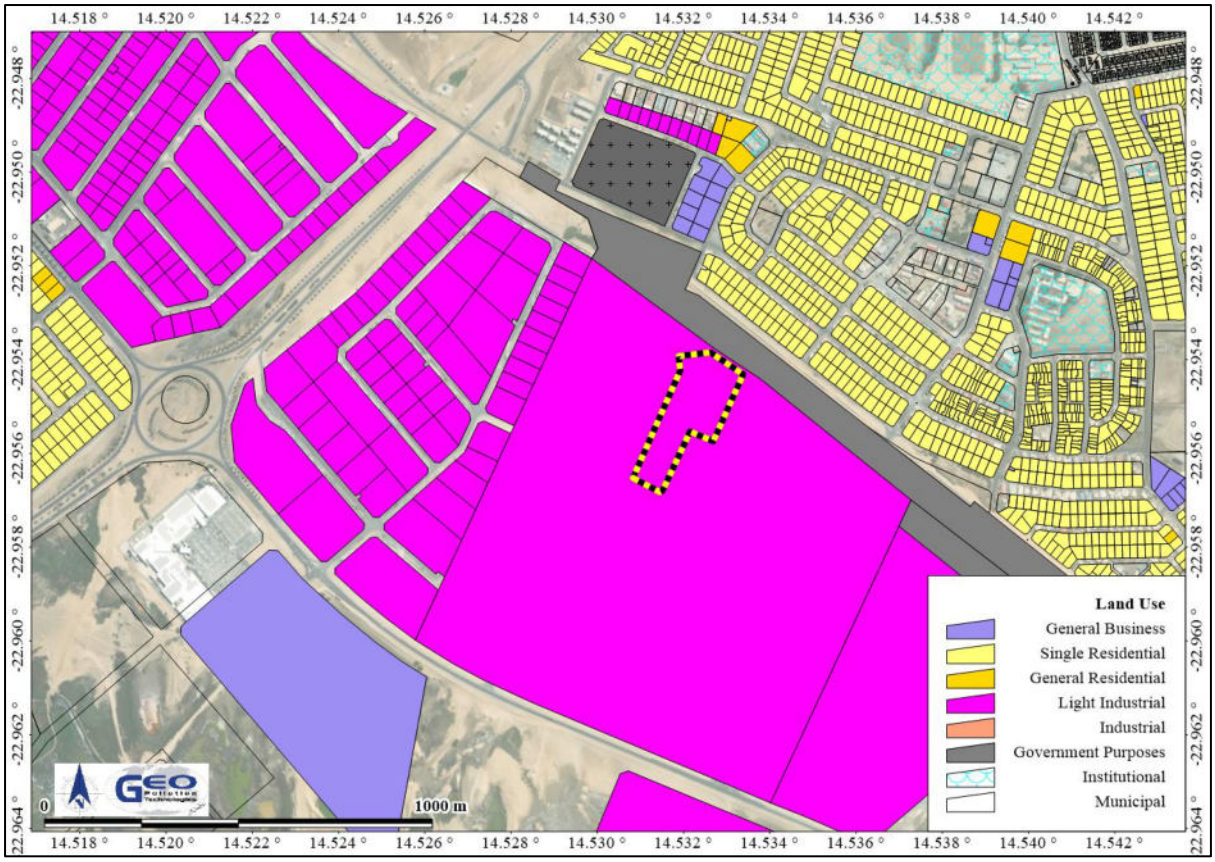

Figure 7-1 Site and surrounding property zoning

Figure 7-2 Project location in relation to the larger setting

Implications and Impacts

The site itself is situated in an area intended for industrial use. All storage and handling activities will take place within the property boundary, and mostly inside warehouses, to ensure impacts on neighbours are minimised. Construction and operations will contribute to an increase in traffic within the area.

7.2 CLIMATE

Namibia's climate is dominated by dry conditions for most of the year and particularly so in the west. The location of Namibia with respect to the Intertropical Convergence Zone, Subtropical High Pressure Zone and Temperate Zone is what determines the climate, with the Subtropical High Pressure Zone being the major contributor to the dry conditions (Atlas of Namibia Project, 2002; Bryant, 2010), see Figure 7-3.

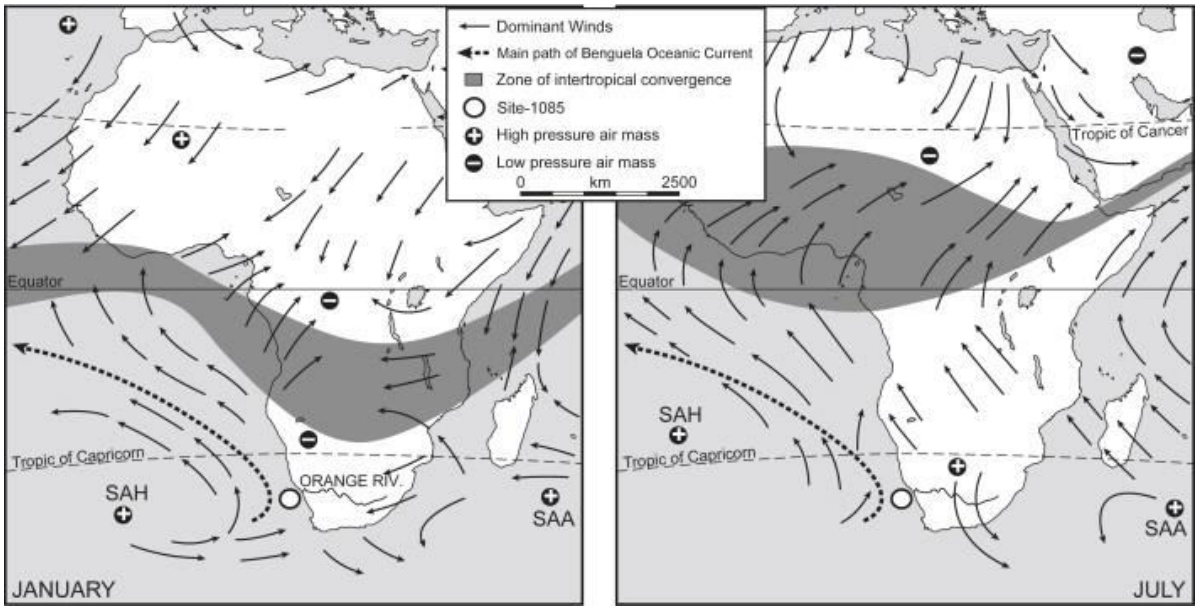

Figure 7-3 Map indicating the Intertropical Convergence Zone, Subtropical High Pressure Zone (SAH+), Benguela Current and Temperate Zone south of Tropic of Capricorn (not indicated) (from: http://www.meteoweb.eu)

Precipitation over Namibia is mainly controlled by the South Atlantic High (SAH), a high pressure cell (anticyclone) situated west of Namibia in the Subtropical High Pressure Zone. The SAH shifts during the year and is at higher latitudes in winter and lower latitudes in summer. In winter, as a result of being situated more north, the high pressure cell pushes any moisture originating from the Intertropical Convergence Zone northwards, preventing rain over Namibia. In summer, because the high pressure cell moves further south, and has less of an effect on the Intertropical Convergence Zone, moist air reaches Namibia, resulting in summer rains.

Studies indicate the presence of a thermal inversion layer at Walvis Bay. Originally this was thought to be at approximately 500 mamsl (Taljaard and Schumann 1940), but recent studies indicate it as low as 200 mamsl (Patricola and Chang, 2017; Corbett, 2018). A marine atmospheric boundary layer (MBL) exists offshore of the coastline that thins from more than 500 mamsl to 200 mamsl as it nears the coast (Figure 7-4). The MBL is a layer of cool, well-mixed, stable air that is capped by a thermal inversion (Patricola and Chang, 2016; Corbett 2018). This thermal layer or inversion layer will prevent the escape of pollutants such as smoke higher into the atmosphere. The MBL however contribute to high velocity wind speeds by funnelling the winds created by the SAH, resulting in what is referred to as the Benguela Low-Level Coastal Jet (Figure 7-4). Since the MBL overlap partially with the coastal plain, the wind generated by the Benguela Low-Level Coastal Jet also reaches inland, but diminishes relatively quickly further inland.

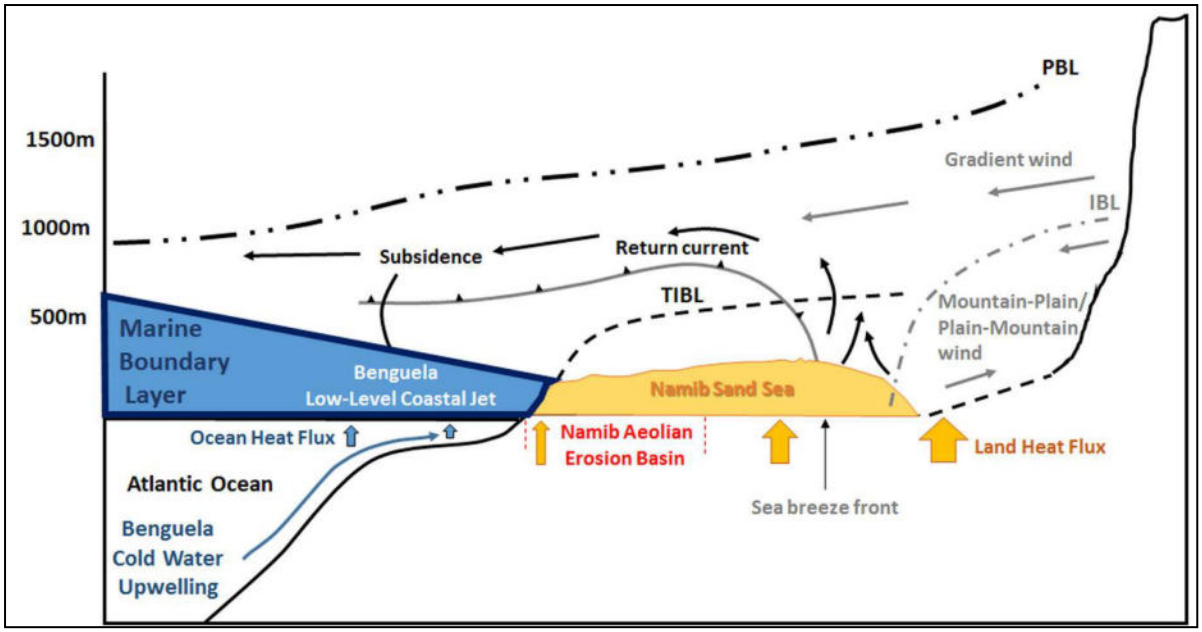

Figure 7-4 Marine atmospheric boundary layer (from: Corbett, 2018)

On a more localised scale, the climatic conditions on the central Namibian coast, and inland thereof (coastal plains), are strongly influenced by the cold Benguela Current, the SAH and the relatively flat coastal plains that are separated from the central highlands by a steep escarpment.

The anticlockwise circulation of the high pressure SAH and the action of the earth's Coriolis force results in strong southerly (longshore) winds blowing northwards up the coastline of Namibia (Bryant, 2010; Corbett, 2018). This longshore wind is responsible for upwelling of the cold, deep waters of the Benguela Current. As a result of the temperature difference between the cold surface water of the Benguela Current and the warm coastal plains, the southerly wind is diverted to a south south-westerly to south-westerly wind along the coast. At Walvis Bay the temperature gradient that forms over the warmer darker sands south of the Kuiseb River, compared with the cooler, lighter coloured gravel plain to the north of the river, leads to the formation of cyclonic circulation (localised low-pressure systems) centred over the dune area, due to warm air that rises over the dune area. This, together with topographical changes and land-use, causes a local deflection of wind flow over the Walvis Bay area, from south to southwest in Walvis Bay (Figure 7-5), to more southwest to westerly further inland, as well as reduced wind speeds. The more low speed, westerly winds are for example experienced at the Walvis Bay Airport (Rooikop).

The winds are strongest in early to mid-summer (September to January) when the SAH is at its strongest and most persistent, and the temperature difference between the sea and the desert plains are at its greatest. Wind speeds then occasionally exceed 32 km/hr and usually peaks late morning to early afternoon. In winter, the SAH loses strength and the southerly to south-westerly winds are at their weakest. Winter winds do not have enough strength to reach far inland. Autumn to winter conditions do however promote the formation of east wind conditions (berg winds) that can reach speeds of more than 50 km/hr and transport a lot of sand. East winds occur when the inland plateau is cold with a localised high pressure cell, while a low pressure system is present at the coast. The high pressure cell forces air off the escarpment and as the air descents, it warms adiabatically as well as create a low pressure system due to the vertical expansion of the air column. The warm air flows toward the coastal low and as it passes over the Namib plains, it heats up even further. The wind manifests itself as very strong, warm and dry wind during the mornings to early afternoon, but dissipate in the late afternoon.

Throughout the year the prevailing night time regional wind is a weak easterly wind. This results when the mainland cools to below the temperature of the coastal water. This results in a coastal low versus an onshore high pressure system with first no wind in the early evening, when

temperatures between water and land is similar, and then weak easterly winds as the temperature difference increase. Wind within the MBL remains dominated by the Benguela Low-Level Coastal Jet, causing a localised southerly wind over Walvis Bay, see Figure 7-5.

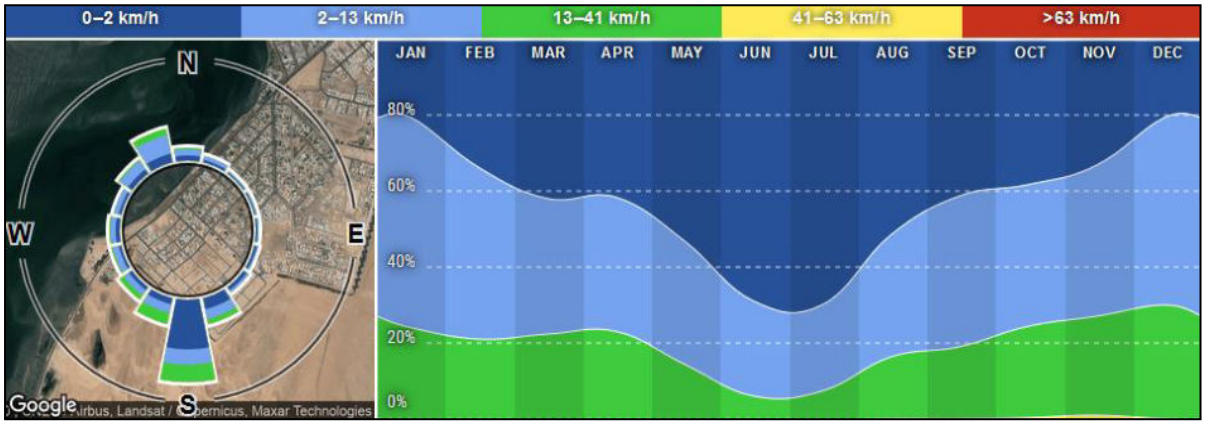

Figure 7-5 Wind direction and strength at the Walvis Bay Lagoon as measured between 2013 and 2020 (from: www.windfinder.com/windstatistics/walvis_bay_airport)

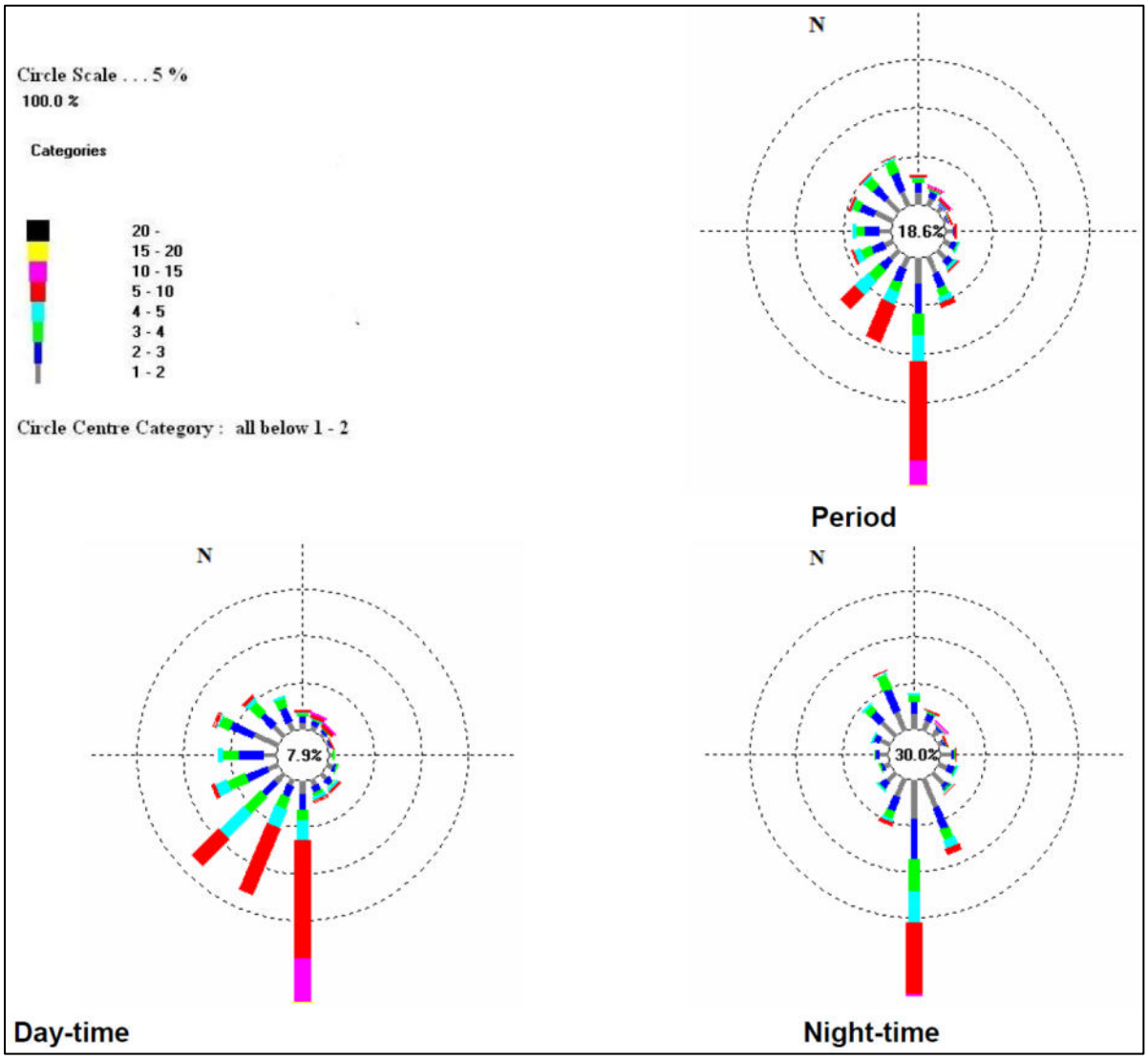

Figure 7-6 Period, daytime and night-time wind roses for Walvis Bay town for the period 2006 (Petzer, G. & von Gruenewaldt, R., 2008)

Temperature at Walvis Bay is strongly regulated by the cold Benguela current. As a result, there is typically limited variation between diurnal and seasonal temperatures. Average annual temperatures are approximately 18 °C to 19 °C with the maximum temperature seldom above 30 °C and minimums rarely below 5 °C (Figure 7-7). The only real temperature extremes are experienced during east wind conditions in the autumn to early winter months when temperatures can reach the upper thirties or even low forties. This results in these months having an average maximum temperature ranging from 30 °C to 35 °C. As one moves inland from Walvis Bay, daytime temperatures increases rather quickly while night time temperatures can get significantly colder in the desert environment.

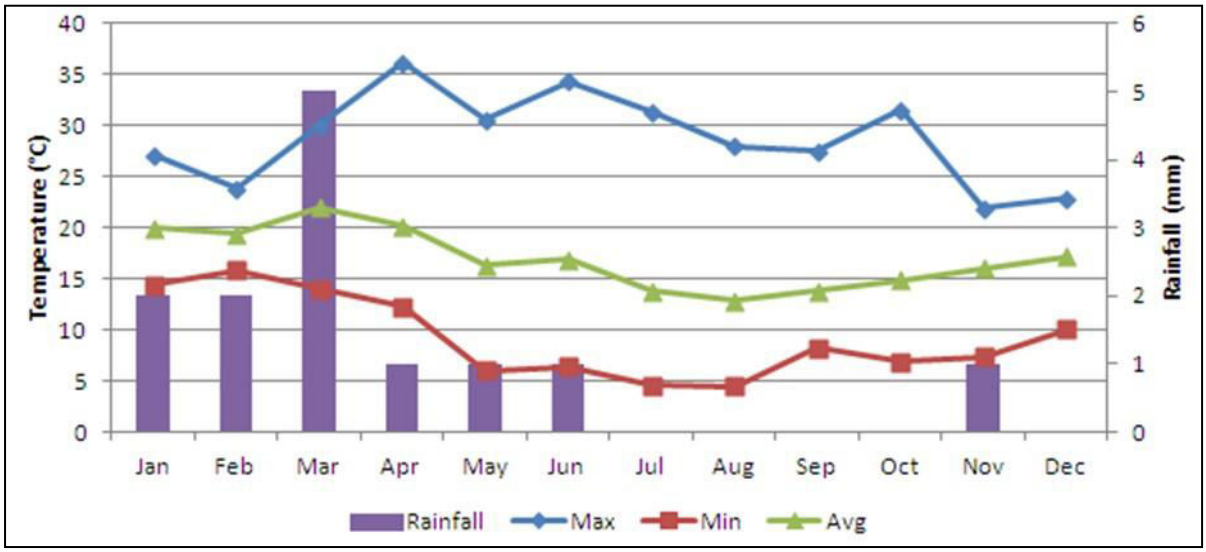

Figure 7-7 Temperature and rainfall at Walvis Bay (from: uMoya-NILU, 2020)

As explained above, the SAH severely limits the amount of rainfall over Namibia and especially at the coast and over the Namib Desert. As such, the average annual rainfall in Walvis Bay is below 50 mm (Figure 7-7), with 100% variation in annual rainfall. Infrequent, heavy rainfall does occur and typically results in rather chaotic conditions as Walvis Bay, and other coastal towns, has not been developed to cater for large volumes of storm water. Fog plays a very significant role as source of water for many plants and animals along Namibia's coast and the Namib Desert. Walvis Bay has up to 900 hours of fog per year and it results from the cold Benguela water cooling the humid air above it to such a temperature that the water vapour condenses to form fog and low level clouds (Mendelsohn et al., 2002).

Implications and Impacts

Heavy rainfall does not occur frequently but in such an event potential pollutants from torn bags or broken containers, may be washed off site and enter the environment. Infrastructure damage can also occur.

Strong winds on site can cause damage to infrastructure not constructed or anchored to withstand them.

7.3 CORROSIVE ENVIRONMENT

Walvis Bay is located in a very corrosive environment, which may be attributed to the frequent salt-laden fog, periodic winds and abundance of aggressive salts (dominantly NaCl and sulphates) in the soil. The periodic release of hydrogen sulphide (H_2S) from the ocean is expected to contribute to corrosion. See Figure 7-8 for corrosion comparison data with other centres.

The combination of high moisture and salt content of the surface soil can lead to rapid deterioration of subsurface metal (e.g. pipelines) and concrete structures. Chemical weathering of concrete structures due to the abundant salts in the soil is a concern.

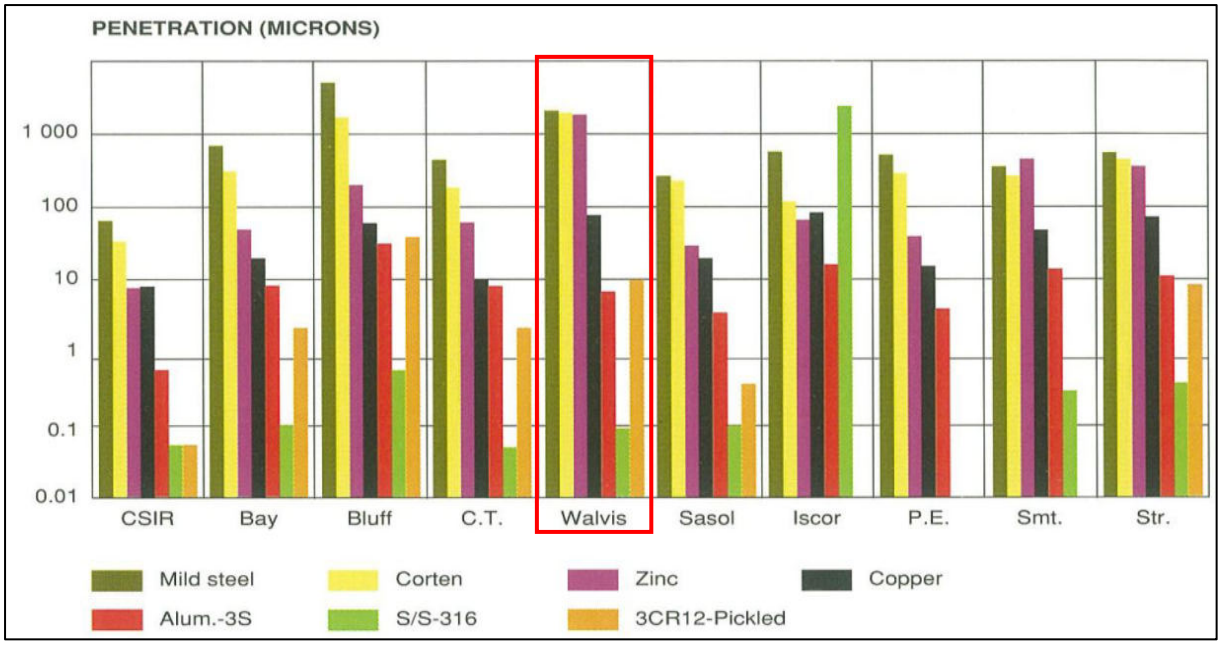

Figure 7-8 Twenty year corrosion exposure results in southern African towns (Callaghan 1991)

Implications and Impacts

Corrosion levels may be high and must be kept in mind when planning building materials of the facility and related infrastructure. During operations goods will not remain on site for prolonged periods of time, thereby reducing their risk to corrode on site.

7.4 TOPOGRAPHY AND DRAINAGE

Walvis Bay is located in the Central Western Plain of Namibia. The Kuiseb River forms the southern boundary of this landscape group, with the Namib Dune Field being present south of the Kuiseb River. A bay is formed by a peninsula commonly known as Pelican Point. On the southern part of the bay is a lagoon which used to be the mouth of the Kuiseb River. Dune migration however forced the flow of the Kuiseb River to the north. This flow was stopped through the construction of a flood control wall to prevent flooding of the town of Walvis Bay, thus forcing the flood waters to move through the dune area to the lagoon. The Kuiseb River now rarely reaches the lagoon.

The topography on site and surroundings have been levelled in order to support development. Surface flow is thus highly influenced by anthropogenic activity. In general, drainage in the Walvis Bay area is poorly developed due to the lack of rainfall <50 mm/annum received. A dune field is present southeast of Walvis Bay and also further to the northeast. These dunes generally migrate in a northerly direction. Further inland is the gravel plains of the central areas of the Namib Naukluft Park. Surface water around Walvis Bay is limited to the marine salt pans, lagoon and ocean as well as a man-made wetland formed as a result of the sewage treatment works.

Implications and Impacts

Any pollutants that are not contained and are transported via surface water flow may be transported out of the site to the surrounding environment. Therefore, the storage of hazardous substances must be strictly controlled according to industry best practise requirements.

7.5 GEOLOGY AND HYDROGEOLOGY

Walvis Bay is located in the Central Western Plain of Namibia. The Kuiseb River forms the southern boundary of this landscape group, with the Namib Dune Field being present south of the Kuiseb River. Northerly dune migration is forcing the Kuiseb River in a northerly direction, with Kuiseb River paleochannels being present as far south as Sandwich Harbour.

Following the breakup of West-Gondwana during the early Cretaceous (130 – 135 Ma ago), continental uplift took place, enhancing erosional cutback and the formation of the Namibian Escarpment. A narrow pediplain formed, mainly over Damara Age rocks. The South Central started filling in over the pediplain, with marine conditions established around 80 Ma ago. Towards the end of the Cretaceous (70 – 65 Ma ago) a relative level surface was created, on which later deposition of sediments took place. Marine deposition took place in the parts covered by the newly formed South Central Ocean, while terrestrial deposits took place on land. Further continental uplift moved the shoreline to its present position.

Northwards migration of sand covered parts of the exposed marine deposits, with Kuiseb floods also depositing material over the marine sediments. Depth to bedrock in Walvis Bay is expected to be deeper than 40 m below surface. Based on previous work conducted in the area, it is expected that the sediments under the project area would consist of medium to coarse grain sand with thin lenses of more clayey material and layers of shell material.

Shallow freshwater lenses might be present. The origin of these freshwater lenses would mostly be freshwater leakages from the water supply reticulation as well as from the semi purified ponds present near the effluent treatment works.

Implications and Impacts

Groundwater is not utilised in the area. Pollution of the groundwater is however still prohibited. Adherence to Namibian law or better in relation to correct handling and storage of hazardous substances, and spill control structures installed and maintained where hazardous substances are stored and handled will successfully prevent pollution of groundwater, surface water or soil. Shallow groundwater may lead to rapid lateral spreading of contaminants. This may further have potential impact on underground utilities and may cause impacts on neighbouring properties.

7.6 PUBLIC WATER SUPPLY

Public water supply to Walvis Bay and the surrounding developments is provided by NamWater from the NamWater Kuiseb Water Supply Scheme.

Implications and Impacts

Groundwater is saline and not used as potable water source. No potential contamination impact on water supply is thus expected. Water usage by the facility will be mainly for domestic use an possibly for dust suppression, but is not expected to have a negative impact on public water supply.

7.7 FAUNA AND FLORA

The site is located within an industrial area which has no vegetation. Of note nearby (4.7 km southwest) is the Walvis Bay Lagoon, the salt works and the southern part of the bay west of the lagoon, which are the key components of the 12,600 ha Ramsar site (Wetland of International Importance). It is important both as an over-wintering area for Palaearctic migrant wader species as well as for African species such as Greater and Lesser Flamingos, Great White Pelican and Chestnut-Banded Plovers.

The sewerage ponds, situated about 1.3 km south of the property, are regarded as sensitive manmade wetlands. Although a manmade fresh water source, they are an attraction for pelicans and flamingos. These wetlands also support 53% of the duck and geese population in the area. The wetland is formed by the constant inflow of semi-purified water and supports extensive stands of reeds. There is also a flight path for birds between the sewerage ponds, the lagoon and the offshore bird breeding platform (Ghwano Island) 8.5 km north of the site. The site is near the flight paths for the three major habitats (lagoon, sewage ponds and Ghwano Island).

Implications and Impacts

The facility is located within an undeveloped industrial area. No immediate threat to biodiversity in the area is expected, however, uncontrolled pollution may and can cause damage to any biodiversity surrounding the site. Bright lighting may also negatively affects birds flying at night and may cause disorientation and collisions.

7.8 DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS

At local level Walvis Bay has an urban population size of 51,618 (Namibia Statistics Agency, 2023). Walvis Bay is the principal port of Namibia, and is an import/export facility for processed fish, mining products and beef. The area is linked to Namibia's air, rail and road network, making its port well situated to service Zambia, Zimbabwe, Botswana, Southern Angola and South Africa.

Table 7-1 Demographic characteristics of Walvis Bay, the Erongo Region and Nationally (Namibia Statistics Agency, 2023)

	Walvis Bay Urban	Walvis Bay Rural	Erongo Region	Namibia
Population (Males)	26,212	25,828	122,322	1,474,224
Population (Females)	25,406	25,669	117,884	1,548,177
Population (Total)	51,618	51,497	240,206	3,022,401
Population Density (persons/km^2)	2,730.8		3.8	3.7

Implications and Impacts

The facility provides employment to people from the area. Some skills development and training benefit employees during the operational phase. Operations stimulate economic growth of the area and region which may result in more job opportunities.

7.9 HERITAGE, CULTURAL AND ARCHAEOLOGICAL ASPECTS

There are no church, mosques or related buildings in close proximity to the site. No known archaeological resources have been noted in the vicinity since the urbanisation of the area. No other structures, sites or spheres of heritage of cultural significance were determined to be in close proximity to the site.

8 PUBLIC CONSULTATION

Consultation with the public forms an integral component of an environmental assessment investigation and enables interested and affected parties (IAPs) e.g. neighbouring landowners, local authorities, environmental groups, civic associations and communities, to comment on the potential environmental impacts associated with projects and to identify additional issues which they feel should be addressed in the environmental assessment.

Public participation notices were advertised twice for two weeks in the national papers: Republikein and Namibian Sun on 29 January and 5 February 2025. A site notice was placed at the property boundary. Interested and affected parties were identified and notified of the project. Notification letters were hand delivered to available neighbours as well as the Municipality of Walvis Bay and Namport. See Appendix A for proof of the public participation processes. No one registered as IAP for the project and no concerns regarding the project were raised during the public consultation phase.

9 MAJOR IDENTIFIED IMPACTS

During the scoping exercise a number of potential environmental impacts have been identified. The following section provides a brief description of the most important of these impacts.

9.1 SOCIO-ECONOMIC IMPACTS

The construction and operations of the Proponent will provide employment opportunities to residents of Walvis Bay. Possible future expansion of the operations will create additional

permanent employment opportunities and some training and skills development will take place. Successful implementation of the project is hinged on continued employment of labourers. Continued employment of individuals increases their economic stability which in turn increases their economic resilience.

Revenue will be generated by the construction and operations, and contributions are made to the local, regional and national economy. The optimisation in the use of the land has changed how revenue is produced and paid to the national treasury. Additional revenue is generated though employment, exporting of goods and use of services.

9.2 ENVIRONMENTAL CONTAMINATION

The construction process itself also presents potential environmental risks, including contamination from construction waste, disturbance to the local ecosystem through soil displacement, and air pollution from machinery emissions. These risks are compounded during the operational phase, where the storage and handling of cargo, as well as transportation, may lead to environmental contamination if product containment fails. Major spills or long-term contamination from windblown dust can negatively impact the environment, causing discolouration of soil and infrastructure where cargo is not adequately contained. Risks such as bulk bag failure, damage during handling by forklifts, or trucks overturning are associated with these impacts. However, these risks can be mitigated and prevented by strict adherence to international best practice standards and guidelines. By implementing robust environmental management strategies during both construction and operational phases, the new facility can minimise its ecological footprint while enhancing its efficiency and extending the lifespan of the infrastructure.

9.3 NOISE IMPACTS

Noise pollution exist due to heavy vehicles accessing the site to deliver and collect products, as well as the use of forklifts, frontend loaders and related machinery that may make use of audible warning sounds. The facility is situated in the industrial area which, within reasonable limits, allows for noisy activities.

9.4 FIRE

Some products stored on site are flammable, while others are only flammable when mixed with other chemicals or when in the presence of high concentrations of oxygen, as can be produced by oxidisers. Some liquids can be static accumulators which can result in fires or explosions if containers are not adequately grounded during decanting and filling of containers.

9.5 AIR QUALITY RELATED HEALTH IMPACTS

Hazard and health impact information of pure or near pure elements and compounds are relatively freely available. On the other hand, determining the potential dangers of metal ores to health and the environment is difficult as the ore is a mixture of the main metal of interest and a variety of gangue material. Ultimately, there will be a number of factors that will determine the level of exposure of people to hazardous chemicals and materials. These include:

- Workers vs. neighbours/passers-by: Workers within the warehouse may potentially be exposed to dust at all times of offloading and loading. Neighbours and passers-by will only be exposed to dust should accidental product loss occur outside the warehouse (e.g. torn bag during lifting with forklift).
- The volume and particle size of the wind dispersible dust present in the product.
- The concentration of actual hazardous/dangerous material in the dust.
- The strength and direction of the wind.

Table 9-1 provides an overview of the key characteristics of the different cargo types handled or planned to be handled on site. It should be noted that the tables are not meant to be an exhaustive list of all the potential cargo types, or their hazards, incompatibilities, etc., but only to act as a rough guide. Some major hazards or incompatibilities are however highlighted. For all products,

their respective MSDS documentation should at minimum be adhered to. Where a MSDS is not available for specifically the metal ores, the mine from where the ore originates should be able to provide guidance on handling and storage of the ore according to their standard operating procedures and EMP. Although the Health and Safety Regulations of the Namibia Labour Act provides exposure limits based on the Occupational Safety and Health Administration (OSHA) permissible exposure limits (PEL), for some of the chemicals/elements, they are likely outdated and above accepted or recommended international levels. Therefore, the National Institute for Occupational Safety & Health (NIOSH) recommended exposure limits (REL) are instead provided. When new cargo types are added to the inventory, their MSDS should be added to the MSDS file and their specific hazards and exposure limits noted. Dust itself in respirable size (PM10) and thoracic size (PM2.5), can also impact on the health of workers and residents, should it not be successfully contained.

Table 9-1 Cargo to be stored and handled at the facility

Cargo Type (As bulk or break bulk cargo)	Description	Health Impacts	Environmental Hazard	Incompatibility	Flammability*	Exposure Limits**
ACORGA® CR60 LT Reagent	Used in mining industry	Causes severe skin burns and eye damage.	May be corrosive to metals	Recommended storage temperature: > 0 °C	Not flammable	TWA: 0.2 mg/m^3
ACORGA® M5640 Solvent extraction reagent	Salicylaldoxime derivative in solvent mixture	Causes eye and skin irritation.	Very toxic to aquatic life	Strong oxidizing agents	Combustible	OSHA (PEL): 500 ppm; 1,200 mg/m^3
ACORGA® M5774	Mining chemical	Causes skin irritation, causes serious eye damage, reproductive toxicity	Very toxic to aquatic life	Oxygen, strong oxidizing agents	Flammable when heated	TWA: 200 mg/m^3
ACORGA® NR10	Mixture	Skin Corrosion / Irritant, Serious Eye Damage	Very toxic to aquatic life	Store at 0 - 37.8 °C Strong oxidizers/ oxygen	Flammable	TWA: 19 mg/m^3
ACORGA® OPT® 5510	Extraction reagent	Causes skin irritation, serious eye irritation.	Very toxic to aquatic life	Acids, strong oxidizing agents. oxygen	Contains flammable active ingredients	DNEL: Dermal: 26 mg/kg/day Inhalation: 71 mg/m^3 Oral: 26 mg/kg/day
Activated Carbon	Coal	No effects	No information found	Strong oxidizers such as ozone, liquid oxygen	Not flammable, but combustible when heated and in the presence of high oxygen concentrations	Not established
AERO® MX-5115 Promoter	Mineral processing reagent	Causes severe skin burns and eye damage	Very toxic to aquatic life, corrosive to metals	Strong acid or base and also oxidizing agents	Not flammable	No OEL values have been established. Refer to MSDS for DNEL

Cargo Type (As bulk or break bulk cargo)	Description	Health Impacts	Environmental Hazard	Incompatibility	Flammability*	Exposure Limits**
AERO® MX-5149	Mineral flotation collector	Irritating, may cause cancer	Toxic to aquatic life with long lasting effects	Strong acids, bases, oxidizing agents	Flammable	**Allyl alcohol***:** TWA: 2 ppm STEL: 4 ppm **Butanol:** STEL: 50 ppm
AERO® MX-5159 and MX-5160	Mining chemical	Causes serious eye damage	Toxic to aquatic life with long lasting effects	Strong acids, bases, oxidizing agents	Flammable	**Allyl alcohol** (OSHA PEL): TWA: 1 ppm STEL: 2 ppm **Butanol** (OSHA PEL): TWA: 100 ppm
AERO® NP8 Promoter	Mining chemicals	May be harmful if swallowed or in contact with skin	Toxic to aquatic life with long lasting effects	Acids, strong oxidizing agents	Not flammable	**Sodium hydroxide** (USA. ACGIH Threshold Limit Values (TLV)): 2 mg/m^3
AERO® OX 100 Promoter	Mining chemicals	Causes skin irritation, serious eye irritation.	Very toxic to aquatic life with long lasting effects.	Strong acids and strong bases, oxidizing agents	Not flammable	**propane-1,2-diol** (UK. EH40 WEL): TWA: 150 ppm **toluene** (UK. EH40 WEL): TWA: 50 ppm
AERODRI®100 Dewatering aid	Surfactant	Skin corrosion, serious eye damage	Flammable liquid and vapour	Strong acids and alkalis cause hydrolysis	Flammable	**Ethanol** (OSHA PEL): TWA: 1,000 ppm
AEROFROTH® 76A Frother	Mineral processing reagent	Respiratory irritation, causes skin irritation	Toxic to aquatic life with long lasting effects	Strong acids, bases, oxidizing agents	Flammable	**2-Ethylhexanol** (OSHA PEL): TWA: 50 ppm STEL: 150 ppm
Cement	Bonding material	Respiratory irritation, causes skin irritation	Not classified	Metal salts, oxidizing agents, strong acids,	Not applicable	TWA: 1 mg/m^3; Crystalline silica: TWA: 0.05 mg/m^3 (respirable dust)

Cargo Type (As bulk or break bulk cargo)	Description	Health Impacts	Environmental Hazard	Incompatibility	Flammability*	Exposure Limits**
				hydrofluoric acid, aluminium powder		
Copper metals (ore, concentrates, cathodes, blisters, anodes)	Mined and refined copper	Toxic if ingested or inhaled, causes skin and eye irritation.	Toxic to aquatic life with long-lasting effects.	Strong oxidizing agents, acids.	Not flammable	NIOSH REL 1 mg/m³ (as copper)
CURIL K2	Mixture	Serious eye damage	Highly flammable liquid and vapour	No further relevant information available	Highly flammable	**Ethanol** (OSHA PEL): TWA: 1,000 ppm
CYFLOC™ N-100 Flocculent	Flocculent	Eyes, skin irritant	This material is not classified as dangerous for the environment	Strong oxidizing agents.	Not flammable	Not established
CYQUEST 3223 Antiprecipitant	Mining chemical	Irritant	This material is not classified as dangerous for the environment	Strong oxidizing agents	Not flammable	Not Established
FENTAMINE TA0810	Metal working fluids, surfactants	Causes skin irritation, serious eye irritation.	Very toxic to aquatic life with long lasting effects.	Strong acids and strong bases	Flammable	Not Available
Flottec F179 Frother	Flotation chemical used in mining industry	Causes skin and eye irritation	Harmful to aquatic life with long lasting effects	Strong oxidizing agents	Combustible liquid	**N-Butyl Alcohol** (OEL): TWA: 15 ppm
GulfSea Compressor oil	Compressor oil	No information found	No information found. Suspected to be hazardous to aquatic environments.	Oxidising agents	Flammable	OEL: TWA: 5 mg/m³ STEL: 10 mg/m³
GulfSea Cylcare	Marine Cylinder oil	Serious Eye damage/irritation	No information found. Suspected to be hazardous to aquatic environments.	Oxidising agents	Flammable	**Zinc dialkyl dithiophosphate** (OEL): TWA: 10 mg/m³

Cargo Type (As bulk or break bulk cargo)	Description	Health Impacts	Environmental Hazard	Incompatibility	Flammability*	Exposure Limits**
GulfSea DE Compressor oil	Compressor oil	No information found	No information found. Suspected to be hazardous to aquatic environments.	Oxidising agents	Flammable	Not Available
GulfSea Gear oil	Gear oil	May cause an allergic skin reaction	No information found. Suspected to be hazardous to aquatic environments.	Oxidising agents	Flammable	Not Available
GulfSea Hydraulic HVI Plus	Hydraulic oil		No information found. Suspected to be hazardous to aquatic environments.	Oxidising agents	Combustible	**2,6-di-tert-butylphenol** (OEL): TWA: 10 mg/m^3
GulfSea Hyperbar	Grease	Not available	No information found. Suspected to be hazardous to aquatic environments.	Oxidising agents	Combustible.	Not Available
GulfSea PE Cool oil	Refrigeration oil	Not available	No information found. Suspected to be hazardous to aquatic environments.	Oxidising agents	Combustible	Not Available
GulfSea Power MX	Engine oil	Serious Eye Damage/Eye Irritation	No information found. Suspected to be hazardous to aquatic environments.	Oxidising agents	Combustible	**zinc O,O-bis(sec-butyl & isooctyl)dithiophosphate** (OEL): TWA: 10 mg/m^3
GulfSea Power Series	Marine trunk piston engine oil	Not available	No information found. Suspected to be hazardous to	Oxidising agents	Combustible	Not Available

Cargo Type (As bulk or break bulk cargo)	Description	Health Impacts	Environmental Hazard	Incompatibility	Flammability*	Exposure Limits**
			aquatic environments.			
GulfSea SuperBear	Marine system oil	Not available	No information found. Suspected to be hazardous to aquatic environments.	Oxidising agents	Combustible	Not Available
GulfSea Synth compressor oil	Compressor oil	Not available	No information found. Suspected to be hazardous to aquatic environments.	Oxidising agents	Combustible	Not Available
GulfSea Turbine oil	Turbine oil	Not available	No information found. Suspected to be hazardous to aquatic environments.	Oxidising agents	Combustible	**Paraffinic distillate** (OEL): TWA: 5 mg/m³ STEL: 10 mg/m³
Hylomar Ltd.	Non-Setting and non-hardening gasketing compound.	Serious eye damage/eye irritation/drowsiness	Not classified for hazards to the environment.	Avoid open flames, sparks	Highly flammable.	**Acetone** (EH40 Workplace Exposure Limits): TWA: 1210 ppm STEL: 1500 ppm
KemDrill A	Drilling mud additive	No hazards which require special first aid measures.	This material is not classified as dangerous for the environment.	Oxidizing agents	Not Available	Not Available
KemFoamX	For industrial use only	Causes serious eye damage, causes skin irritation	Not regulated as a dangerous good	Strong oxidizing agents	No data available	no substances with occupational exposure limit values
KEMIRA FERIX	Water treatment chemical, odour control	Harmful if swallowed/Causes skin irritation/Causes serious eye damage.	May lower the pH of water and thus be harmful to aquatic organisms	Avoid high temperatures, unalloyed steel or galvanized surfaces.	Not combustible.	**Iron (II) sulphate** (OEL): TWA: 1 mg/m³ STEL: 2 mg/m³ **Sulphuric acid** (OEL):

Cargo Type (As bulk or break bulk cargo)	Description	Health Impacts	Environmental Hazard	Incompatibility	Flammability*	Exposure Limits**
						TWA: 1 mg/m³ **Manganese sulphate** (OEL): TWA: 0.2 mg/m³
LIX® 984N-C	Ion exchangers	Causes serious eye damage/Causes skin irritation	Dangerous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.	Avoid all sources of ignition: heat, sparks, open flame. Avoid electro-static discharge & oxidizing agents	Not flammable	Not provided
Magnafloc®	Flocculation agent	None	Harmful to aquatic life with long lasting effects.	Avoid wet, damp or humid conditions, temperature extremes and ignition sources.	Not flammable	Not provided
Magnafloc® LT31	Coagulant	May cause eye irritation. May cause irritation to the respiratory system, if mists or sprays maybe inhaled. Spilled product is slippery underfoot.	Harmful to aquatic life with long lasting effects.	Avoid extremes of temperature, especially frost and freezing conditions. Avoid substances that reactive chemicals, strong oxidizing agents.	Not flammable	No occupational exposure limits known.

Cargo Type (As bulk or break bulk cargo)	**Description**	**Health Impacts**	**Environmental Hazard**	**Incompatibility**	**Flammability***	**Exposure Limits****
OREPREP® F	Use in mining industry	Causes skin irritation.	Harmful to aquatic life with long lasting effects.	Strong oxidizing agents. Store away from heat. Keep away from sources of ignition. Keep containers tightly closed in a dry, cool and well-ventilated place.	No data available	Contains no substances with occupational exposure limit values.
OREPREP® OTX	Frother	Skin corrosion or irritation	Harmful to aquatic life with long lasting effects.	Store away from heat. Keep away from sources of ignition. oxidizing agents; aluminium; copper; strong acids and strong bases; epoxy liners, rubber/bronze gaskets or hoses	Combustible liquid	**Poly[oxy(methyl-1,2-ethanediyl)]**: Workplace Environmental Exposure Levels: 10 mg/m^3
OREPREP® TFB	Frother	May be harmful if swallowed, in contact with skin or if inhaled. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Suspected of damaging fertility or the unborn child.	Toxic to aquatic life with long lasting effects.	Store away from heat. Keep away from sources of ignition. oxidizing agents; strong acids; strong bases	Combustible	**1-Butanol** (USA. Threshold Limit Values): TWA: 20 ppm
OREPREP® X-133-EU Frother	Mineral processing reagent	Harmful if swallowed, Causes serious eye irritation	None known	Strong oxidizers, alkalis	Flammable liquid	**2-Ethylhexanol** (WEL): TWA: 50 ppm

Cargo Type (As bulk or break bulk cargo)	Description	Health Impacts	Environmental Hazard	Incompatibility	Flammability*	Exposure Limits**
						STEL: 150 ppm
REAGENT S-11464	Use in mining industry	Causes mild skin irritation	Marine pollutant, toxic to aquatic life with long lasting effects.	Keep containers tightly closed in a cool, well-ventilated place. Ensure all equipment is electrically grounded before beginning transfer operations	Flammable	Contains no substances with occupational exposure limit values
Sodium Ethyl Xanthate	Floatation agent for froth separation of metal	Will cause irritation and may cause more serious damage	Reacts readily with water liberating toxic and flammable gases. In waterways may persist for several days.	Ignition sources (including static discharges) and moisture	Flammable	**Carbon Disulphid**e (NOHSC) TWA: 31 mg/m^3
Sodium Hydrosulfide	Industrial and mining chemical	If inhaled, may be harmful	Toxic for animal life	High temperatures; exposure to sun, rain, water (even moist air); acids; Concentrating solutions, which could cause. Avoid contact with zinc, copper, aluminium and their alloys which could cause acid oxidizing materials	Spontaneous ignition	**Hydrogen Sulfide**: STEL: 15 ppm **Sulfur Dioxide**: STEL: 5 ppm

Cargo Type (As bulk or break bulk cargo)	Description	Health Impacts	Environmental Hazard	Incompatibility	Flammability*	Exposure Limits**
SUPERFLOC A	For use in industrial installations	None	No hazards	Strong oxidizing agents	Not flammable	Contains no substances with occupational exposure limit values
SUPERFLOC N	Flocculating agent	Product is not hazardous under CA Hazardous Products Regulations	None known	Materials to avoid: Strong oxidizing agents. Avoid dust formation during handling.	Not flammable	Contains no substances with occupational exposure limit values
UPC 500, B-Side	Mild chemical	Causes skin irritation, causes serious eye damage	Prevent spilled material from entering sewers	Strong mineral acids and strong alkalis will seriously degrade material	No data available	No data available.
UPC Polymeric MDI, A-Side	Spray foam insulation applications	May cause respiratory irritation	Not available	This product will react with any material containing active hydrogens	No data available	**4,4'-Ethylenediphenyl Diisocyanate** (OSHA PEL): TWA: 0.2 mg/m^3
Solid Caustic Soda	Industrial chemical	Severe skin burns and eye damage	Low toxicity in invertebrates, but high concentrations in water can affect aquatic life	Water, strong oxidising agents; strong acids; metals; organic materials.	Not flammable	OSHA PEL: 2 mg/m^3
Hydrochloric Acid	Industrial chemical	Servers skin burns and eye damage	High concentrations decrease pH which can be detrimental to living organisms	Metals; cyanides; strong bases	Not flammable	OSHA PEL: 5 mg/m^3
Hydrogen Peroxide	Industrial chemical	Servers skin burns and eye damage, respiratory irritation	Harmful to aquatic organisms	Strong oxidizer and contact with combustible materials may cause fire	Not flammable	OSHA PEL: 1.4 mg/m^3

Cargo Type (As bulk or break bulk cargo)	Description	Health Impacts	Environmental Hazard	Incompatibility	Flammability*	Exposure Limits**
Sodium metabisulphite	Wastewater treatment	Causes serious eye damage, skin corrosion, harmful if swallowed	harmful to aquatic organisms and can alter soil chemistry	Oxidizers; acids; heavy-metal compounds	Not flammable	NIOSH REL: 5 mg/m^3 (over 10 hours)
Methylisobutylcarbinol	Industrial and mining chemical, lubricant and grease additive	Dizziness, drowsiness, headache, and respiratory irritation; Longer exposure cause skin irritation and central nervous system effects	Slightly harmful to aquatic organisms	Strong oxidizing agents; strong acids	Combustible	NIOSH REL: 100 mg/m^3
LeachWELL 60X	Mining chemical	Harmful if swallowed; may cause an allergic skin reaction; causes serious eye irritation; harmful if inhaled; may damage fertility or the unborn child; may cause damage to organs through prolonged or repeated exposure		Oxidising agents; acids; prolonged exposure to air, sunlight, heat and ignition sources; brass; copper; nickel	Combustible	Safe Work Australia exposure limit: 0.15 mg/m^3 TWA

*Although some products are listed as not flammable, it is not flammable under normal conditions. Almost any fine dust, suspended in air in high concentrations, are flammable or even explosive. Many products when heated or coming into contact with incompatible materials release flammable or explosive vapours or form flammable mixtures.

**For the products listed, many are proprietary chemical blends. The exposure limits specified in the table are derived from known ingredients within these blends, which may be present only in low concentrations. It is essential to consult the specific product's MSDS before use to determine the exposure risks and the required personal protective equipment (PPE) required.

***Chemicals in bold are the active ingredient of the product.

In addition to possible dust impacts, exhaust gases of trucks may also deteriorate air quality in town. Exhaust gases typically contain nitrogen (67%), carbon dioxide (12%), water (11%), oxygen (9%) and pollutant emissions (1%) that include carbon monoxide, hydrocarbons, nitrogen oxides, sulphur dioxide and particulate matter (Resitoglu and Altinisik 2015). While carbon dioxide contributes to the greenhouse effect and climate change, it is the 1% pollutant emissions that are typically a health concern. Due to the frequent winds of Walvis Bay, these gases and particulate matter are expected to disperse quickly, but may accumulate during periods of no or very calm winds.

9.6 TRAFFIC IMPACTS

The site is located within the light industrial area of Walvis Bay. Construction and future operations are expected to result in increased traffic to the area. Impacts relate to increased accidents, damaged road surfaces and pavements, congestion and obstruction of entrances and exits of nearby properties. The transport of goods throughout the country leads to additional traffic impacts in the town, the region and nationally.

10 ASSESSMENT AND MANAGEMENT OF IMPACTS

The purpose of this section is to assess and identify the most pertinent environmental impacts that are expected from the operational, construction (also upgrades, maintenance, etc. – see glossary for "construction") and potential decommissioning activities of the facility. An EMP based on these identified impacts are also incorporated into this section.

For each impact an Environmental Classification was determined based on an adapted version of the Rapid Impact Assessment Method (Pastakia, 1998). Impacts are assessed according to the following categories: Importance of condition (A1); Magnitude of Change (A2); Permanence (B1); Reversibility (B2); and Cumulative Nature (B3) (see Table 10-1).

Ranking formulas are then calculated as follow:

Environmental Classification = A1 x A2 x (B1 + B2 + B3).

The environmental classification of impacts is provided in Table 10-2.

The probability ranking refers to the probability that a specific impact will happen following a risk event. These can be improbable (low likelihood); probable (distinct possibility); highly probable (most likely); and definite (impact will occur regardless of prevention measures).

Table 10-1 Assessment criteria

Criteria	Score
Importance of condition (A1) – assessed against the spatial boundaries of human interest it will affect	
Importance to national/international interest	4
Important to regional/national interest	3
Important to areas immediately outside the local condition	2
Important only to the local condition	1
No importance	0
Magnitude of change/effect (A2) – measure of scale in terms of benefit / disbenefit of an impact or condition	
Major positive benefit	3
Significant improvement in status quo	2
Improvement in status quo	1
No change in status quo	0
Negative change in status quo	-1
Significant negative disbenefit or change	-2

Major disbenefit or change	-3
Permanence (B1) – defines whether the condition is permanent or temporary	
No change/Not applicable	1
Temporary	2
Permanent	3
Reversibility (B2) – defines whether the condition can be changed and is a measure of the control over the condition	
No change/Not applicable	1
Reversible	2
Irreversible	3
Cumulative (B3) – reflects whether the effect will be a single direct impact or will include cumulative impacts over time, or synergistic effect with other conditions. It is a means of judging the sustainability of the condition – not to be confused with the permanence criterion.	
Light or No Cumulative Character/Not applicable	1
Moderate Cumulative Character	2
Strong Cumulative Character	3

Table 10-2 Environmental classification (Pastakia 1998)

Environmental Classification	Class Value	Description of Class
72 to 108	5	Extremely positive impact
36 to 71	4	Significantly positive impact
19 to 35	3	Moderately positive impact
10 to 18	2	Less positive impact
1 to 9	1	Reduced positive impact
0	-0	No alteration
-1 to -9	-1	Reduced negative impact
-10 to -18	-2	Less negative impact
-19 to -35	-3	Moderately negative impact
-36 to -71	-4	Significantly negative impact
-72 to -108	-5	Extremely Negative Impact

10.1 RISK ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN

The EMP provides management options to ensure impacts of the facility is minimised. An EMP is a tool used to take pro-active action by addressing potential problems before they occur. This should limit the corrective measures needed, although additional mitigation measures might be included if necessary. The environmental management measures are provided in the tables and descriptions below. These management measures should be adhered to during the various phases of the construction and operation of the facility. This section of the report can act as a stand-alone document. All personnel taking part in the construction and operations of the facility should be made aware of the contents in this section, so as to plan the operations accordingly and in an environmentally sound manner.

The objectives of the EMP are:

- to include all components of construction activities (upgrades, maintenance, etc.) and operations of the facility;
- to prescribe the best practicable control methods to lessen the environmental impacts associated with the project;
- to monitor and audit the performance of operational personnel in applying such controls; and
- to ensure that appropriate environmental training is provided to responsible operational personnel.

Various potential and definite impacts will emanate from the operations, construction and decommissioning phases. The majority of these impacts can be mitigated or prevented. The impacts, risk rating of impacts as well as prevention and mitigation measures are listed below.

As depicted in the tables below, impacts related to the construction and operational phase are expected to mostly be of low to medium significance and can mostly be mitigated to have a low significance. The extent of impacts are mostly site specific to local and are not of a permanent nature. Due to the nature of the surrounding areas, cumulative impacts are possible and include noise pollution and traffic impacts.

10.1.1 Planning

During the phases of planning for construction, transport, operations and decommissioning of the facility, it is the responsibility of Proponent to ensure they are and remain compliant with all legal requirements. The Proponent must also ensure that all required management measures are in place prior to and during all phases, to ensure potential impacts and risks are minimised. The following actions are recommended for the planning phase and should continue during various other phases of the project:

- Ensure that all necessary permits from the various ministries, local authorities and any other bodies that governs the construction (maintenance) and operations of the facility are in place and valid.
- Ensure all appointed contractors and employees enter into an agreement which includes the EMP. Ensure that the contents of the EMP are understood by the contractors, sub-contractors, employees and all personnel present or who will be present on site.
- Make provisions to have a Health, Safety and Environmental Coordinator to implement the EMP and oversee occupational health and safety as well as general environmental related compliance at the site.
- Make provisions to have a community liaison officer on site who will handle complaints and community input, and through whom, where reasonable, monitoring data can be requested. Communicate the contact details of the community liaison officer to interested and affected parties when the project is initiated.
- Have the following on site, where reasonable, to deal with all potential emergencies:
    - EMP, MSDS, emergency response plans and health safety and environmental manuals;
    - Safety standards;
    - Spill containment, clean up and firefighting equipment and materials required for emergencies;
    - Adequate protection and indemnity insurance cover for incidents.
- Establish and maintain a fund for future ecological restoration of the project site should project activities cease and the site is decommissioned and environmental restoration or pollution remediation is required.
- Establish and / or maintain a reporting system to report on aspects of construction activities, operations and decommissioning as outlined in the EMP.
- Prepare and submit environmental monitoring reports as per the conditions of the environmental clearance certificate.
- Appoint a specialist environmental consultant to update the EIA and EMP and apply for renewal of the environmental clearance certificate prior to expiry.

10.1.2 Employment

An increase in skilled and professional labour will result from the construction operational activities related to the project. Contractors and employees are and will be sourced locally as far as practically possible, while transport companies / drivers may be contracted from other regions. The facility and its operations decrease unemployment in Namibia.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Employment and contribution to local economy	2	1	2	2	2	12	2	Definite
Daily Operations	Employment contribution to local economy; project revenue generation	3	1	3	2	2	21	3	Definite
Indirect Impacts	Decrease in overall unemployment in Namibia mainly as a result of the transport of cargo and the provision of various services to the Proponent	3	2	3	2	2	42	4	Definite

Desired Outcome: Provision of contracts and employment to local Namibians.

Actions

Mitigation:

- The Proponent must contract and employ local Namibians where possible. If the skills exist locally, employees must first be sourced from the town, then the region and then nationally.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Bi-annual summary report based on contractor and employee records.

10.1.3 Skills, Technology and Development

During various phases of construction and operations, training will be provided to a portion of the workforce. Skills are transferred to an unskilled workforce for general tasks. The technology required for the development of the facility is often new to the local industry, aiding in operational efficiency. Development of people and technology are key to economic development.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Technological development and transfer of skills	2	1	2	3	1	12	2	Probable
Daily Operations	Technological development and transfer of skills among employees	3	2	3	2	2	42	4	Definite
Indirect Impacts	Economic development of the town and Namibia in general	3	1	3	2	2	21	3	Definite

Desired Outcome: To see an increase in skills of local Namibians, as well as development and technology advancements in associated industries.

Actions

Enhancement:

- If the skills exist locally, contractors and employees must first be sourced from the town, then the region and then nationally. Deviations from this practise must be justified.
- Skills development and improvement programs to be made available as identified during performance assessments of employees.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Record should be kept of training provided.
- Ensure that all training is certified or managerial reference provided (proof provided to the employees) inclusive of training attendance, completion and implementation.
- Bi-annual summary report based on records kept.

10.1.4 Revenue Generation

The project will change the way revenue is generated and paid to the national treasury. An increase of skilled and professional labour will result from the operations of the project and related wages and salaries will be paid. Employment at the warehouse will be sourced locally as far as practically possible while transport companies / drivers may be contracted from other regions in order to transport cargo to and from Walvis Bay. Revenue will be generated through the provision of port and related services such as stevedore operations.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Contribution to local economy	2	1	2	2	2	12	2	Probable
Daily Operations	Contribution to local and national economy through operations and payment of salaries	3	2	3	2	2	42	4	Definite
Indirect Impacts	Increase in revenue generated in Namibia	3	1	3	2	2	21	3	Definite

Desired Outcome: Contribution to the local and national economy. Contribution to national treasury.

Actions

Enhancement:

- The Proponent must employ local Namibians and source Namibian contractors, goods and services as far as is practically possible. Deviations from this practise must be justified.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Bi-annual summary report based on employee records.

10.1.5 Demographic Profile and Community Health

The project will be reliant on labour during the construction and operational phases. Local construction teams in Walvis Bay will be used for all construction, general maintenance and upgrade activities. The scale of the construction portion of the project is limited and it is not expected to create a change in the demographic profile of the local community. Where possible, existing labour, already employed by the Proponent will be used or new labourers will be sourced from the town. Community health may be exposed to factors such as communicable disease like HIV/AIDS and alcoholism/drug abuse, associated with the trucking industry (transport of goods to and from Walvis Bay) and increased spending power of the labour force. Trucks delivering products to the warehouse will not stay for extended periods of time at the site, however, may reside over-night in Walvis Bay. Foreign persons in the area may increase the cumulative risk of communicable disease (such as HIV/ AIDS) in Walvis Bay.

Positive impacts will related to employees and contractors' increased economic resilience and improved livelihoods.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Social ills related to increased spending power of employees of contractors	2	-2	2	2	2	-24	-3	Probable
Construction	Increased economic resilience and improved livelihoods of employees of contractors	2	-2	2	2	2	-24	-3	Definite
Daily Operations	Social ills related to increased spending power of employees and cross country transport	2	-2	3	2	2	-28	-3	Probable
Daily Operations	Increased economic resilience and improved livelihoods	2	2	3	2	2	28	3	Definite
Indirect Impacts	The spread of diseases	3	-1	3	2	2	-21	-3	Probable

Desired Outcome: To prevent the in-migration and growth in informal settlements, prevent the spread of communicable disease and prevent / discourage socially deviant behaviour.

Actions:

Prevention:

- Employ local people from the area where possible, deviations from this practise should be justified appropriately.
- Adhere to all municipal by-laws relating to environmental health which includes, but is not limited to, sanitation requirements for workers on site.
- Appointment of reputable contractors.

Mitigation:

- Educational programmes for employees (especially truck drivers) on HIV/AIDs and general upliftment of employees' social status.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Facility inspection sheet for all areas which may present environmental health risks, kept on file.
- Bi-annual summary report based on educational programmes and training conducted.
- Bi-annual report and review of employee demographics.

10.1.6 Health, Safety and Security

Some chemicals that will be handled and stored on site are hazardous with inherent health risks to personnel on site when inhalation, accidental ingestion, eye or skin contact occurs. Some chemicals may in itself not be particularly dangerous, but may become dangerous when in contact or mixed with incompatible materials. This may happen when for example incompatible materials are stored with each other, during containment failure (e.g. ruptured bags), or when different spilled products are cleaned and stored in the same container. If not contained, a further health risk is posed to nearby receptors.

Injuries can occur due to incorrect lifting of heavy equipment and materials, failing from heights, stacked chemicals tipping over, and accidents involving forklifts and vehicles.

Security risks are related to unauthorized entry, theft and sabotage. Security risks are increased as a result of high value commodities, e.g. copper cathodes, stored and handled at the site.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Physical injuries, exposure to chemicals and criminal activities	1	-2	2	2	1	-10	-2	Improbable
Daily Operations	Physical injuries, exposure to chemicals and criminal activities	2	-2	3	2	2	-28	-3	Probable

Desired Outcome: To prevent injury, health impacts and theft.

Actions

Prevention:

- Implement and maintain an integrated health and safety management system, to act as a monitoring and mitigating tool, which includes: operational, safe work and medical procedures, permits to work, emergency response plans, housekeeping rules, MSDS's and signage requirements (personal protective equipment (PPE), flammable etc.).
- Develop emergency response plans for all possible health, safety and security impacts and appoint responsible personnel in key positions to activate and oversee such plans when required.
- The contact details of all emergency services must be readily available.
- Clearly label dangerous and restricted areas as well as dangerous equipment and products.
- Provide all employees with required and adequate PPE which include coveralls, respirators and protective eyewear.
- Ensure that all personnel who will work in the facility receive adequate training on:
  - operation of equipment (mainly the forklift).
  - reading and understanding of MSDS instructions (take note that MSDS documents are not always 100% adequate and that some extra information for hazardous chemicals may be required).
  - handling of hazardous substances.
  - containment of hazardous substance spills.
  - correct application of neutralising agents, absorbents, etc. which may be used for spilled products (knowledge of incompatibilities is key).
  - identification of incompatible chemicals and the need to separate them during storage (segregation).
  - identification of potential hazardous conditions or events.
  - first aid and actions to be taken for specific highly dangerous chemicals should contact, inhalation or ingestion occur.

  - firefighting and compatible firefighting media for specific chemicals (see section 10.1.9).
- A MSDS file in which a particular MSDS can quickly be found, must be available in the facility.
- For specific highly dangerous chemicals (e.g. highly toxic, highly reactive with other chemicals and substances, highly flammable, etc.), abridged emergency procedures should be prepared that summarise the key do's and don'ts for each of these chemicals. These should be readily accessible at the respective products' storage areas.
- Emergency showers, eyewash stations and water baths must present and inspected daily to ensure they are in working order and ready for use in an emergency. They should be located at strategic locations throughout the facility so that they are in easy reach from any area with corrosive and hazardous substances.
- A worker should not be allowed to a facility where hazardous products are stored alone. Should an emergency situation result where a worker is injured to such an extent that he/she can't call for help (e.g. inhalation of noxious/corrosive fumes), aid and medical treatment may come too late to prevent serious injury or even fatalities. Safety measures must be implemented and these can include being accompanied by a second person, permanent CCTV surveillance of all areas identified as posing significant risks, or using a panic button that can be worn by employees which sounds an alarm in the offices.
- Security procedures and proper security measures must be in place to protect workers and clients.
- Equipment on site must be locked away or placed in a way that does not encourage criminal activities (e.g. theft).

Mitigation:

- For all emergency situations, the appropriate emergency response plan must be implemented as soon as possible in order to minimize the magnitude of impacts or prevent such impacts from developing into more severe impacts.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- MSDS files
- If regular complaints are received regarding dust, air quality monitoring must be conducted on and around the site to monitor ore dust fallout. Monitoring to be conducted by an independent specialist who must advise on the monitoring protocol to be followed.
- Any incidents must be recorded with action taken to prevent future occurrences.
- A bi-annual report should be compiled of all incidents reported. The report should contain dates when training were conducted and when safety equipment and structures were inspected and maintained.

10.1.7 Traffic

The volume of trucks on the national road networks will increase, however the planned use of rail transport will decrease the total number of additional trucks needed for the planned operations.

The warehouse is within an area zoned for industrial use and operations will result in an increase in traffic to the new industrial area. Heavy motor vehicles turning in these roads may result in in an increased, cumulative impact on the road surface of the area. Trucks may block neighbouring business' entrances and increase the likelihood of accidents and incidents.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Delivery of equipment and building supplies	1	-1	2	2	2	-6	-1	Probable
Daily Operations	Increase traffic, road wear and tear and accidents	2	-3	3	2	3	-48	-4	Definite

Desired Outcome: Minimum impact on traffic and no transport or traffic related incidents.

Actions

Mitigation:

- All truck drivers must be suitably trained and licenced.
- Trucks delivering or collecting goods should not be allowed to obstruct any traffic in surrounding areas and the town.
- Trucks should not be driven in convoy, with insufficient gaps in-between, making overtaking difficult and increasing the possibility of accidents.
- Truck drivers should adhere to a schedule allowing sufficient rest periods.
- Trucks can be fitted with GPS tracking and cameras.
- Trucks should not be parked, outside designated areas outside port limits for extended periods of time, neither should they obstruct neighbouring businesses.
- Trucks associated with the facility should not be allowed to park or overnight in the street, and may only overnight at areas designated for this purpose.
- Adhere to The Road Traffic and Transport Regulations, 2001 and all other applicable legislation related to road transport and maximum axle loads.
- If any traffic impacts are expected, traffic management should be performed to prevent these.
- The placement of signs to warn and direct traffic will mitigate traffic impacts.
- Identify vehicles on which hazardous substances are to be transported and handle all dangerous or hazardous goods according to MSDS instructions and under supervision of trained staff. Ensure the correct documentation (e.g. dangerous goods declaration, transport emergency card (TREM card), etc.) is provided in the vehicle. Verify that the driver of the vehicle has undergone appropriate training.
- Provide training to operators on emergency preparedness and response protocol.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- The Road Traffic and Transport Regulations, 2001.
- Any complaints received regarding traffic issues should be recorded together with action taken to prevent impacts from repeating itself.

- A bi-annual report should be compiled of all incidents reported, complaints received, and action taken.

10.1.8 Air Quality

Reduced air quality as a result of exhaust gases (greenhouse gases) of trucks visiting the property and the port during construction and operations. This may have localised health impacts, but are expected to disperse relatively quickly due to the prevailing south-westerly winds in Walvis Bay. It will however still contribute to greenhouse gas emissions that in turn contribute to climate change. In terms of greenhouse gas emissions from trucks, it is the project in its entirety that should be considered. It is thus the responsibility of all stakeholders to implement strategies and measures to curb the release of greenhouse gases. The Proponent's contribution to greenhouse gas emissions will be minimal.

Some chemicals stored and handled are noxious and can cause serious health impacts, especially when inhaled.

Air quality as a result of windblown dust can cause health effects, especially through chronic inhalation of such dust, in the nearby communities. Since the gangue materials present in ore dust are not necessarily known, but could potentially include for example asbestos, it is crucial that the inhalation / ingestion of dust is prevented at all times. Sources of such dust can originate from the facility when, for example, bulk bags tear.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Exposure to dust construction activities and trucks accessing the site	1	-2	2	2	2	-12	-2	Probable
Daily Operations	Exposure to dust and its subsequent inhalation and/or ingestion and inhalation of exhaust gases. Damage to buildings as a result of exhaust gases resulting in acid deposition, ozone and soot build-up.	2	-2	3	2	2	-28	-3	Probable

Desired Outcome: To prevent health impacts and to reduce greenhouse gas emissions.

Actions

Prevention:

- All cargo must be secured on trucks to prevent cargo from falling off and subsequent damage to containment.
- All bulk cargo loads must be covered with a tarpaulin at all times.
- Appoint reputable contractors for transporting bulk cargo who prioritise a "zero dust policy".
- All stored cargo must be contained.

Mitigation:

- All vehicles operated by the Proponent must be serviced regularly and make use of technology to reduce emissions. This include selective catalytic reduction, diesel particulate filters and diesel oxidation catalysts. The Proponent must appoint transport contractors who implement the same as far as is reasonably possible.
- Any spilled products must be cleaned immediately to minimize dust impacts. Refer to section 10.1.6 for safety of workers.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- If regular complaints are received regarding dust, air quality monitoring must be conducted on and around the site to monitor ore dust fallout. Monitoring to be conducted by an independent specialist who must advise on the monitoring protocol to be followed.
- Any incidents must be recorded with action taken to prevent future occurrences.
- A bi-annual report should be compiled of all incidents reported and monitoring performed. The report should contain dates when safety equipment and structures were inspected and maintained.

10.1.9 Fire

Construction and operational activities may increase the risk of the occurrence of fires if proper maintenance and housekeeping are not conducted. Of the cargo to be handled flammable cargo should be segregated from any oxidisers or heat or ignition sources. Some chemicals stored are flammable in nature and can even become explosive when exposed to incompatible materials (e.g. oxidisers when mixed with a fuel source like hydrocarbons). Uncontrolled fires and explosions can cause extensive damage to surrounding properties and can lead to casualties.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Fire and explosion risk	2	-2	2	2	1	-20	-3	Improbable
Daily Operations	Fire and explosion risk	2	-2	3	2	2	-28	-3	Probable

Desired Outcome: To prevent fires, property damage, possible injury and impacts caused by uncontrolled fires.

Actions:

Prevention:

- A holistic fire protection and prevention plan must be developed for the site and it should specifically take into account flammable and potentially flammable products stored on site. This plan must include an emergency response plan, firefighting plan and a spill recovery plan and should have dedicated assigned personnel to oversee their development and implementation. The local fire brigade should be involved in the development of the fire protection and prevention plan.
- Install smoke/fire detectors in the facilities.
- Firefighting equipment compatible with the different materials should be available and must be maintained and regularly serviced.
- Signage for no smoking areas and highly flammable products must be fixed in appropriate locations.
- Regular personnel training (MSDS interpretation, firefighting, fire prevention, responsible housekeeping practices, etc.).
- Regular emergency fire drills should be conducted and should include involving the nearby neighbours.
- Ensure all chemicals are stored strictly according to MSDS instructions. This include segregation of incompatible products. This does not only pertain to actual storage of products, but also segregation of materials used for cleaning or containing spilled products that are incompatible with each other.
- Ensure sufficiently trained employees who knows which fire extinguishing media (e.g. water, powder, foam) are incompatible with which chemicals (e.g. water on concentrated acid can result in a seriously violent reaction).
- Maintain regular site, mechanical and electrical inspections and perform regular maintenance.
- Clean all spills/leaks without delay and dispose of any contaminated material according to their MSDS requirements and at suitable locations to prevent the accumulation of flammable or explosive products on site.
- All decanting activities must:
    - Occur within a sufficiently bunded area to contain spills.
    - Take cognisance of liquids that are static accumulators and suitable grounding should then be applied.

Mitigation:

- For any fire related emergency situation, the appropriate emergency response plan must be implemented as soon as possible in order to minimize the magnitude of impacts or prevent such impacts from developing into more severe impacts. This includes immediate dispatching of the local fire brigade.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- A register of all incidents must be maintained on a daily basis. This should include measures taken to ensure that such incidents do not repeat themselves.
- A bi-annual report should be compiled of all incidents reported. The report should contain dates when fire drills were conducted and when fire equipment was tested and training given.

10.1.10 Noise

Noise pollution will exist due to heavy motor vehicles accessing the site to load and offload cargo as well as from the stacking and moving of bags and containers and other large equipment. As the site is situated in an industrial area, noise impacts on surrounding properties will be minimal. Construction (maintenance and upgrade) may generate excessive noise for short periods of time.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Excessive noise generated from construction activities – nuisance and hearing loss	2	-1	2	2	1	-10	-2	Probable
Daily Operations	Noise generated from the operational activities – nuisance and hearing loss	2	-1	3	2	2	-14	-2	Probable

Desired Outcome: To prevent any nuisance and hearing loss due to noise generated.

Actions

Prevention:

- The Health and Safety Regulations of the Labour Act and World Health Organization (WHO) guideline on maximum noise levels (Guidelines for Community Noise, 1999) to prevent hearing impairment for workers on site should be followed during the construction and operational phases.
- Confine noise generating operational activities to daytime hours as far as possible.
- At night, the nuisance created by audible warning signals on trucks and forklifts can be prevented by switching to a flashing light or 'broadband white noise' system.

Mitigation:

- At night, the nuisance created by audible warning signals on trucks and forklifts can be prevented by switching to a flashing light or 'broadband white noise' system.
- Hearing protectors as standard PPE for workers in situations with elevated noise levels.
- Maintain noise generating activities to within the facility as far as possible.
- All machinery must be regularly serviced to ensure minimal noise production.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Health and Safety Regulations of the Labour Act and WHO Guidelines.
- Maintain a complaints register.
- Bi-annual report on complaints and actions taken to address complaints and prevent future occurrences.

10.1.11 Waste Production

Various waste streams will result from the operational phase and development of the facility. Waste may include hazardous waste associated with the handling of hazardous products and contaminated packaging material. Domestic waste will be generated by the facility and related operations. Waste presents a contamination risk and when not removed regularly may become a fire hazard. Construction waste may include building rubble and discarded equipment. Contaminated soil and water is considered as a hazardous waste.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Excessive waste production, littering, illegal dumping, contaminated materials	1	-2	2	2	2	-12	-2	Definite
Daily Operations	Excessive waste production, littering, contaminated materials	1	-2	3	2	2	-14	-2	Definite

Desired Outcome: To reduce the volume of waste and prevent pollution and littering.

Actions

Prevention:

- Waste reduction measures should be implemented and all waste that can be re-used / recycled must be kept separate.
- Ensure adequate temporary waste storage facilities are available and ensure incompatible wastes are not stored together (i.e. empty
- Ensure waste cannot be blown away by wind.
- Prevent scavenging (human and non-human) of waste.
- All drains leading directly into sewers must be closed off, and locked where possible, to prevent any unwanted products from entering sewers should an accidental spill occur. Where drains are present to drain wash water, these should only be opened during times of washing.

Mitigation:

- Waste should be disposed of regularly and at appropriately classified disposal facilities, this includes hazardous material (empty chemical containers, contaminated rugs, paper water and soil).
- Liaise with the municipality regarding waste and handling of hazardous waste.
- Due to the nature of some hazardous materials they, or the containers they are packed in, should be disposed of in an appropriate way at an appropriately classified waste disposal facility. See the material safety data sheets available from suppliers for disposal methods.
- Containers that contained hazardous materials which need to be discarded must be punctured to prevent their reuse for purposes of storing water or other liquids for consumption.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- A register of hazardous waste disposal should be kept. This should include type of waste, volume as well as disposal method/facility.
- Any complaints received regarding waste should be recorded with notes on action taken.
- All information and reporting to be included in a bi-annual report.

10.1.12 Ecosystem and Biodiversity Impact

The nature of the operational activities is such that the probability of creating a habitat for flora and fauna to establish is low. No significant impact on the biodiversity of the area is predicted as this is an existing operation and the site is void of natural fauna and flora. Excessive lighting used at night and especially those that are directed upwards may blind birds like flamingos that fly at night. This may result in disorientation of birds and collisions with structures. Further impacts will mostly be related to pollution of the environment.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Impact on fauna and flora. Loss of biodiversity	1	-1	2	2	2	-6	-1	Improbable
Daily Operations	Impact on fauna and flora. Loss of biodiversity	2	-1	3	2	2	-14	-2	Improbable

Desired Outcome: To avoid pollution of and impacts on the ecological environment.

Actions.

Mitigation:

- Report any extraordinary ecological sightings to the Ministry of Environment, Forestry and Tourism.
- Mitigation measures related to waste handling and the prevention of groundwater, surface water and soil contamination should limit ecosystem and biodiversity impacts.
- Prevent scavenging of waste by fauna.
- The establishment of habitats and nesting sites at the facility should be prevented where possible.
- Lights used at night should be kept to a minimum and should be directed downwards to the working surfaces.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- All information of extraordinary ecological sightings to be included in a bi-annual report.

10.1.13 Groundwater, Surface Water and Soil Contamination

Chemicals that are not contained in the warehouse or trucks can contaminate the environment. The entire property will be paved and pollution of soil and groundwater is not expected. There is no surface water present nearby. Dust that is not contained can however reach sensitive receptors during times of strong wind. Oil, hydraulic fluid and fuel leaks from vehicles may also present a pollution risk.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Contamination from hazardous material spillages and hydrocarbon leakages	2	-1	2	2	1	-10	-2	Probable
Daily Operations	Contamination from hazardous material spillages	2	-1	3	2	1	-12	-2	Probable

Desired Outcome: To prevent the contamination of water and soil.

Actions

Prevention:

- Proper training of operators must be conducted on a regular basis (e.g. forklift operators).
- Care should be taken to prevent damage to, especially the rub hall, but also the warehouse infrastructure.
- Decanting operations must be conducted by trained personnel and take place in a suitably bunded area with a concrete floor and sealed joints.
- Decanting operations should never be left unattended.

Mitigation:

- Clean-up action must be taken immediately for all spillages (e.g. liquid spillages, torn bags, etc.), according to the respective MSDS instructions.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- The procedures followed to prevent environmental damage during service and maintenance, and compliance with these procedures, must be audited and corrections made where necessary.
- A report should be compiled bi-annually of all spills. The report should contain the following information: date and duration of spill, product spilled, volume of spill, remedial action taken, etc.

10.1.14 Visual Impact

This is an impact that not only affects the aesthetic appearance, but also the integrity of the facility. The site is within an area zoned for industrial use. The development of the site is in line with the urban character.

Operations will be kept tidy and neat which will promote effectiveness and pollution prevention while being aesthetically pleasing.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Aesthetic appearance and integrity of the site	1	-1	2	2	2	-6	-1	Probable
Daily Operations	Aesthetic appearance and integrity of the site	1	1	3	2	2	7	1	Definite

Desired Outcome: To minimise aesthetic impacts associated with the facility.

Actions

Mitigation:

- Regular waste disposal, good housekeeping and routine maintenance on infrastructure will ensure that the longevity of structures are maximised and a low visual impact is maintained.
- All structures and infrastructures constructed on site should be line with the visual character of the landscape as far as practically possible.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- A bi-annual report should be compiled of all complaints received and actions taken.

10.1.15 Cumulative Impact

The main cumulative impact associated with the operational phase is traffic frequenting the site, noise, and dust should it not be contained. This will have a cumulative impact on traffic flow on surrounding street areas and outside the industrial area, noise at nearby residential areas and the environment.

The cumulative effect of lighting on birds due to various developments in and around the area may also increase the incidences of collisions and interference with bird flight paths at night.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Daily Operations	The build-up of minor impacts to become more significant	2	-1	3	2	2	-14	-2	Definite

Desired Outcome: To minimise all cumulative impacts associated with the facility.

Actions

Mitigation:

- Addressing each of the individual impacts as discussed and recommended in the EMP would reduce the cumulative impact.
- Reviewing biannual and annual reports for any new or re-occurring impacts or problems would aid in identifying cumulative impacts and help in planning if the existing mitigations are insufficient.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Review bi-annual summary reports based on all other impacts to gain an overall assessment of the impact of the operational phase.

10.2 DECOMMISSIONING AND REHABILITATION

Decommissioning is not foreseen during the validity of the environmental clearance certificate. Decommissioning was however assessed as construction activities include modification and decommissioning. Should decommissioning occur at any stage, rehabilitation of the area may be required. Decommissioning will entail the complete removal of all infrastructure including buildings and underground infrastructure not forming part of post decommissioning use. Any pollution present on the site must be remediated. The impacts associated with this phase include noise and waste production as structures are dismantled. Noise must be kept within Health and Safety Regulations of the Labour Act and WHO standards and waste should be contained and disposed of at an appropriately classified and approved waste facility and not dumped in the surrounding areas. Future land use after decommissioning should be assessed prior to decommissioning and rehabilitation initiated if the land would not be used for future purposes. The EMP for the facility will have to be reviewed at the time of decommissioning to cater for changes made to the site and implement guidelines and mitigation measures.

10.3 ENVIRONMENTAL MANAGEMENT SYSTEM

The Proponent could implement an Environmental Management System (EMS) for their operations. An EMS is an internationally recognized and certified management system that will ensure ongoing incorporation of environmental constraints. At the heart of an EMS is the concept of continual improvement of environmental performance with resulting increases in operational efficiency, financial savings and reduction in environmental, health and safety risks. An effective EMS would need to include the following elements:

- A stated environmental policy which sets the desired level of environmental performance;
- An environmental legal register;
- An institutional structure which sets out the responsibility, authority, lines of communication and resources needed to implement the EMS;
- Identification of environmental, safety and health training needs;
- An environmental program(s) stipulating environmental objectives and targets to be met, and work instructions and controls to be applied in order to achieve compliance with the environmental policy;
- Periodic (internal and external) audits and reviews of environmental performance and the effectiveness of the EMS; and
- The EMP.

11 CONCLUSION

The proposed operations of the Proponent will see the import and export of marine grade oils, greases, and lubricants, as well as metal ores, concentrates, anodes, and cathodes, and chemicals for various mines and industries through the Port of Walvis Bay. This will have a positive impact on the economy of Walvis Bay and Namibia as a whole. Employment are sustained at the facility and in the transport sectors. Training and skills transfer take place. Various business are supported along the different transport routes and within Walvis Bay. The Port of Walvis Bay and stevedores render port services. The entire project contributes to the national treasury through payment of taxes, levies and permitting fees.

Regulations related to the handling and transport of goods as prescribed by Namibian law, or according to international best practice standards where Namibian law is lacking, must be followed during the planning, construction and operations of the project. The necessary permits and approvals must be obtained from the relevant authorities. All potentially hazardous substances should be handled and stored according to MSDS requirements which include storage on impenetrable surfaces and segregation of incompatible products. Noise pollution should at all times meet the prescribed Health and Safety Regulations of the Labour Act and WHO requirements to prevent hearing loss and minimise nuisance. Fire prevention should be adequate, and health and safety regulations should be adhered to in accordance with the regulations pertaining to relevant laws and internationally accepted standards of operation. Any waste produced must be removed from site and disposed of at an appropriate facility or

re-used or recycled where possible. Hazardous waste must be disposed of at an approved hazardous waste disposal site.

The EMP (Section 10) should be used as an on-site reference document for the construction and operations of the facility. Parties responsible for transgressing of the EMP should be held responsible for any rehabilitation that may need to be undertaken. The Proponent could use an in-house Health, Safety, Security and environment management system in conjunction with the EMP. All relevant construction and operational personnel must be taught the contents of these documents.

Should the Directorate of Environmental Affairs (DEA) find that the impacts and related mitigation measures, which have been proposed in this report are acceptable, an environmental clearance certificate may be granted to the Proponent. The environmental clearance certificate issued, based on this document, will render it a legally binding document which should be adhered to. Focus could be placed on Section 10, which includes an EMP for this project. It should be noted that the assessment process's aim is not to stop the activity, or any of its components, but to rather determine its impact and guide sustainable and responsible development as per the spirit of the EMA.

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Appendix A: Proof of Public Consultation

Notified IAPs

Name	Organisation
Marlene Rautenbach	Municipality of Walvis Bay
Johanna	Wellco Trading

IAPs Notified by Hand Delivered Letter

Public Participation Notification: Environmental Assessment

Transworld Cargo – Erf 6418, Walvis Bay

Name & Surname	Organisation/Address	Tel / Mobile	Email	Signature
Johanna	Welco Trading	Privacy Block		
Marlene	Mun. Walvis Bay			

Geo Pollution Technologies
Environmental Scoping Assessment and Environmental Management Plan for Storage and Handling of Industrial Cargo and Chemicals in Walvis Bay
February 2025

Municipal Notification

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To: **Interested and / or Affected Party / Neighbour** **14 February 2025**

Re: **Environmental Scoping Assessment and Environmental Management Plan for the Storage and Handling of Industrial Cargo and Chemicals in Walvis Bay**

Transworld Cargo (Pty) Ltd (the Proponent) plans to construct warehouses for the storage and handling of industrial cargo, chemicals and products on erven 6418, 5163, 5164 and 5165, Extension 14, Walvis Bay, Erongo Region (Figure 1). The chemicals and products are both exported out- and imported into Namibia and include marine-grade oils, greases, and lubricants for offshore vessels and rigs, frozen and refrigerated cargo, storage containers, mining metals and ores, and chemicals for various mines and industries in Namibia and southern Africa.

Transworld Cargo appointed Geo Pollution Technologies (Pty) Ltd (GPT) to undertake an environmental assessment for the construction and operations of the warehouses. The environmental assessment is required in order to apply for an environmental clearance certificate (ECC) for the construction and operations of the facility. The ECC application will be made in terms of the Environmental Management Act, Act No. 7 of 2007 (EMA). A scoping environmental impact assessment (EIA) report and an environmental management plan (EMP) are proposed to be submitted to the Ministry of Environment, Forestry and Tourism's Department of Environmental Affairs (DEA) in support of an application for an ECC.

Project: Storage and Handling of Industrial Cargo and Chemicals on Erf 6418, 5163, 5164 and 5165 in Extension 14, Walvis Bay

Proponent: Transworld Cargo (Pty) Ltd

Environmental Assessment Practitioner: Geo Pollution Technologies (Pty) Ltd

Erven 6418, 5163, 5164 and 5165 is undeveloped properties with the new light industrial area (Ext 14) of Walvis Bay. The Proponent is in the process to consolidate the erven to form one erf. Initially, one large warehouse will be constructed on erf 6418, which will be custom built for purposes of storage of the various industrial cargo, chemicals and products. Chemicals and products will mainly be received and stored in the form of break-bulk or containerised cargo as per customer demands, but bulk cargo may also be included when required. Should bulk cargo in the form of dust producing dry bulk powders, or similar, be handled, dust containment or suppression will be performed when required. Break-bulk cargo includes bulk bags, intermediate bulk containers (IBCs), drums, products packaged in smaller containers or bags on pallets, and standard shipping containers. All products will be received by truck and will be offloaded and handled on site with reach stackers and forklifts. Shipping containers will be stacked in the yard while all other cargo will be stored in one of the warehouses. All ship loading/unloading activities in the Port of Walvis Bay will be handled by Namport or third party stevedores and thus will be outside of the scope of the environmental assessment.

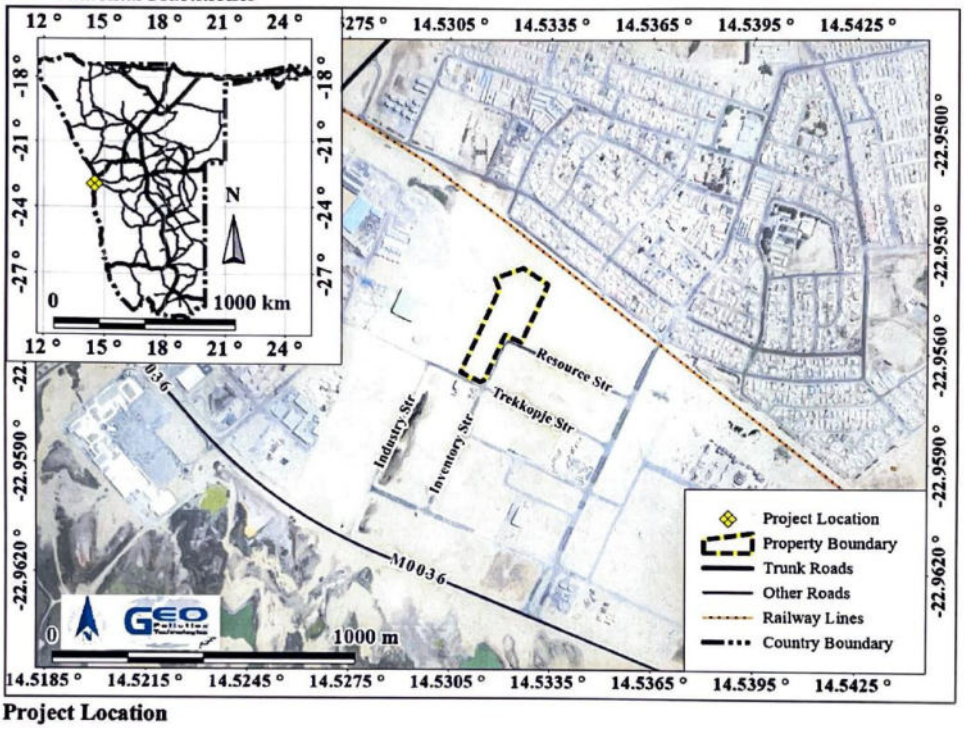
Firefighting and health and safety measures will be implemented in line with accepted standards. Administrative tasks, site security, and cleaning will continue daily, to maintain efficient and clean operations. Environmental compliance monitoring and public liaison will remain active throughout the facility's operations.

Interested and affected parties or neighbours are invited to register with the environmental consultant to receive further documentation and communication regarding the project by 25 February 2025. Please register at: **Fax:** 088-62-6368 or **E-Mail:** twc2@thenamib.com

Should you require any additional information please contact Geo Pollution Technologies at telephone 061-257411.

Sincerely,
Geo Pollution Technologies

André Faul
Environmental Practitioner



Project Location

MUNICIPALITY OF WALVIS BAY
RECEIVED
2025 -02- 14
SIGNATURE
DEPT : WWEM

Press Notice: The Namibian Sun 29 January and 5 February 2025

• STORE CLAIMS IT LOST MILLIONS WHEN IT WAS SHUT DOWN IN 2023

Lüderitz to pay OK Foods for alleged wrongful closure

BIG LOSS: OK Foods in Lüderitz. PHOTO: CONTRIBUTED

The Lüderitz Town Council is set to meet to discuss the settlement amount and whether disciplinary action is warranted.

OTIS DANIELS
WINDHOEK

The Lüderitz Town Council has agreed to an out-of-court settlement with OK Foods following the wrongful closure of the convenience store.

Mayor Phillipus Balhao on Monday confirmed that a special meeting will be held to address the matter.

"We urgently need to make a decision in light of the upcoming court case scheduled for 10 to 14 February 2025. Council will launch an enquiry and determine if any disciplinary action is required," Balhao told Network Media Hub.

Court documents reveal that Lüderitz Retailers cc, which operates OK Foods in the town and is represented by legal counsel Marianne Petherbridge, is seeking compensation for business losses amounting to N$1.4 million.

A review conducted by ENSafrica at the request of the town council's legal representative, Kennedy Haraseb, estimated the losses during the closure period to be N$611 473.

OK Foods, one of only two food retailers in Lüderitz at the time, approached the High Court after its store was shut down for business in 2023 by the town's health inspectors for allegedly failing a health inspection.

Detrimental closure

OK Foods sought a court declaration deeming its closure unlawful and an order compelling the municipality to renew its certificates of registration and fitness.

The retailer argued that the closure was arbitrary and detrimental to its clients and employees. On 28 April 2023, in urgent proceedings, the High Court ruled that the 25-day suspension of the store's operations (from March to April 2023) was unlawful and invalid.

Judge Esi Schimming-Chase, in her pre-trial order dated 28 October 2024, identified several unresolved issues, including whether the unlawful closure caused damages amounting to N$1 004 101.22.

Schimming-Chase noted that alternative dispute resolution was no longer an option and urged the parties to continue settlement discussions. The case was scheduled for an administrative hearing from 10 to 14 February this year.

Closure enforced

The closure of OK Foods was initiated by Christalene Kaangude, an environmental health practitioner with the Lüderitz Town Council, who instructed the store to cease operations in March 2023.

On 21 April 2023, Otto Shipanga, the acting CEO of the town council, enforced the closure within the scope of his job mandate.

These actions have now placed the council in a precarious legal position, with potential financial repercussions for the municipality.

Ban on maize imports reportedly lifted

STAFF REPORTER
WINDHOEK

A ban on the import of maize and related maize products issued by the agriculture ministry last Wednesday has reportedly been "unofficially withdrawn," according to industry sources.

However, officials in the ministry could not confirm this on Monday.

No clarity could be provided on when an official withdrawal might be expected either.

The ministry's spokesperson, Simon Nghipandulwa, said Monday he is waiting for the ministry's statement to be signed before it is officially released.

The ministry earlier pointed to an outbreak of cob rot disease in palm products and Goss's bacterial wilt in the South African provinces of Free State, Mpumalanga and North West.

Harvests impacted

This comes after the United Nations Food and Agriculture Organisation (FAO) reported last year that Namibia's grain production was about one-third below the five-year average due to poor rainfall and extreme temperatures during the rainy season.

"A smaller maize harvest is responsible for the majority of the decline in total grain production, reflecting the crop's high sensitivity to water shortages (in general) compared to millet and sorghum, the two other key grain crops," the FAO report stated.

Given that Namibia imports an average of two-thirds of its grain, the FAO has predicted that Namibia will need to import an above-average 330 000 tons of grain during the 2024-25 marketing year due to the scorching drought – most of which will consist of maize for human consumption and animal feed.

"The rate of maize imports in the first five months of the 2024-25 marketing year is nearly double that of the previous year, reflecting the increased import needs," the FAO report noted.

From October last year to March this year, 1.26 million people will face food insecurity according to the FAO.

This figure is nearly double what it was during the same period in the previous year.

IMPORT INFO: The agriculture ministry has yet to comment on the import of maize. PHOTO: FOR ILLUSTRATION

• DEVELOPMENT HURDLE

Network woes persist despite expansion plans

Residents in Zambezi as well as Kavango East and Kavango West continue to grapple with poor network connectivity.

NIKANOR NANGOLO
RUNDU

Despite efforts by the communication and technology ministry and PowerCom to improve network connectivity, poor service continues to plague several northern regions.

PowerCom announced plans to construct about 20 network towers across the country, valued at N$32 million, during its 2023–2024 financial year. However, connectivity challenges persist, prompting concerns from regional leaders.

At a recent stakeholder meeting with MTC, Zambezi regional leaders voiced frustration over inadequate network coverage. They stressed that the issue is not limited to remote areas but extends to Katima Mulilo, the region's main town.

PowerCom CEO Beatus Amadhila last year reaffirmed the company's commitment to infrastructure expansion.

Speaking at a groundbreaking ceremony in Mupini, Kavango West, last year, Amadhila outlined PowerCom's investment strategy.

"These sites are spread across various regions. This follows the construction of 19 new sites during the 2021–2022 financial year for N$30 million, symbolised by the launch of our Okahandja Veddersdal Tower in June 2022. During the 2022–2023 financial year, PowerCom invested N$11.2 million to construct seven additional sites nationwide," he said at the time.

He said over the next two financial years, PowerCom aims to invest approximately N$80 million to build 50 new towers across Namibia.

"These accomplishments and plans highlight our broader strategy to enhance nationwide connectivity as we work to address the deficit of approximately 500 towers required by our shareholder within the current strategic plan cycle."

IN TOUCH: Poor service continues to plague several northern regions.
PHOTO: CONTRIBUTED

Committed

Communication technology minister Emma Theofelus echoed these sentiments at the same event last year, emphasising the government's commitment to equitable access to services, regardless of location.

She added that expanding network infrastructure is critical, especially given that 71.1% of Namibia's population is under 35 – the digital generation.

Despite these initiatives, residents in Zambezi, Kavango East and Kavango West continue to grapple with poor network connectivity.

Hurdles

Kavango West Governor Sirkka Ausiku has repeatedly highlighted how poor network services hinder regional development. She noted that the lack of telecommunications infrastructure is a major obstacle.

In her State of the Region address last year, Ausiku underlined that communication remains a challenge. "According to the Namibia Statistics Agency, 29.1% of our population has no access to mobile communication. While we appreciate the ongoing construction of new towers, we still urge for the expansion of local radio coverage, currently at 78%, and television coverage at 74.5," she said at the time.

Meanwhile, Kavango East governor Bonifatius Wakudumo recently emphasised his region's commitment to network expansion. He highlighted the deployment of 4G/LTE in several key locations, including schools and hospitals.

"Moreover, a new tower was commissioned at Ncushe village in the Mashare constituency, bringing total population network coverage to 94.84%," Wakudumo said.

Mondesa clinic closes after fire

CLAUDIA REITER
WINDHOEK

The health and social services ministry announced the temporary closure of the Mondesa clinic in Swakopmund after a fire broke out in the early hours of Monday.

According to a police report, a security guard heard several strange noises resembling explosions. Shortly afterwards, he was alerted that the clinic was on fire. Preliminary investigations suggest that the fire may have started in the clinic's pharmacy.

The Swakopmund fire department managed to contain the blaze. While significant damage was recorded to pharmaceuticals and important documents, including tax records, the treatment rooms remained largely intact, with only minimal damage to medication and electronic equipment. No injuries or fatalities were reported.

The cause of the fire remains unclear and the extent of the damage is still being assessed. The public is advised to seek medical assistance at the Tamariskia clinic. Prenatal care, family planning and vaccinations are available at the DRC clinic, while patients in need of wound care can visit the Swakopmund District Hospital.

CAUSE UNKNOWN: A fire broke out at the Mondesa clinic in the early hours of Monday.
PHOTO: CONTRIBUTED

Students hone vegetable gardening skills

STAFF REPORTER
WINDHOEK

The 'Resilient Garden Project', a recipient of the Walvis Bay Youth Climate Action Fund, has successfully taught young students essential skills in sustainable gardening.

This initiative aimed to educate and empower students by guiding them through the process of establishing and maintaining a fully functional vegetable garden from scratch.

Thirty-five students from seven senior secondary schools in Walvis Bay participated in the project.

According to project manager Obedine Tsuses, the initiative not only teaches students practical gardening skills but also instils a sense of environmental responsibility.

"By investing in youth-led environmental initiatives, we are passionate about shaping a generation committed to sustainability and food security."

The initiative kicked off with an interactive workshop covering key theoretical aspects of gardening, including the use of eco-friendly pesticides, composting and plant nutrition as well as best practices for vegetable cultivation.

Following the workshop, each school was assigned a garden plot where students actively grew and maintained plants for three months. They cultivated spinach, cabbage, herbs and beetroot, gaining both agricultural knowledge and environmental awareness.

An official awards ceremony took place on 29 January, honouring the top schools for their outstanding achievements in sustainable gardening.

Alpha Leo from Walvis Bay took home first place, winning N$5 000, followed by Kuisemund Secondary School, which secured second place and N$3 000, and Desert View High School, which earned third place and N$2 000.

The schools were evaluated based on the following criteria: garden design and planning, plant health and productivity, sustainability practices, as well as student engagement and teamwork.

GREEN FINGERS: 35 students from seven senior schools in Walvis Bay participated in the 'Resilient Garden Project'. PHOTO: CONTRIBUTED

Press Notice: Die Republikein 29 January and 5 February 2025

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He said over the next two financial years, PowerCom aims to invest approximately N$80 million to build 50 new towers across Namibia.

"These accomplishments and plans highlight our broader strategy to enhance nationwide connectivity as we work to address the deficit of approximately 500 towers required by our shareholder within the current strategic plan cycle."

IN TOUCH: Poor service continues to plague several northern regions. PHOTO: CONTRIBUTED

Committed

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She added that expanding network infrastructure is critical, especially given that 71.1% of Namibia's population is under 35 – the digital generation.

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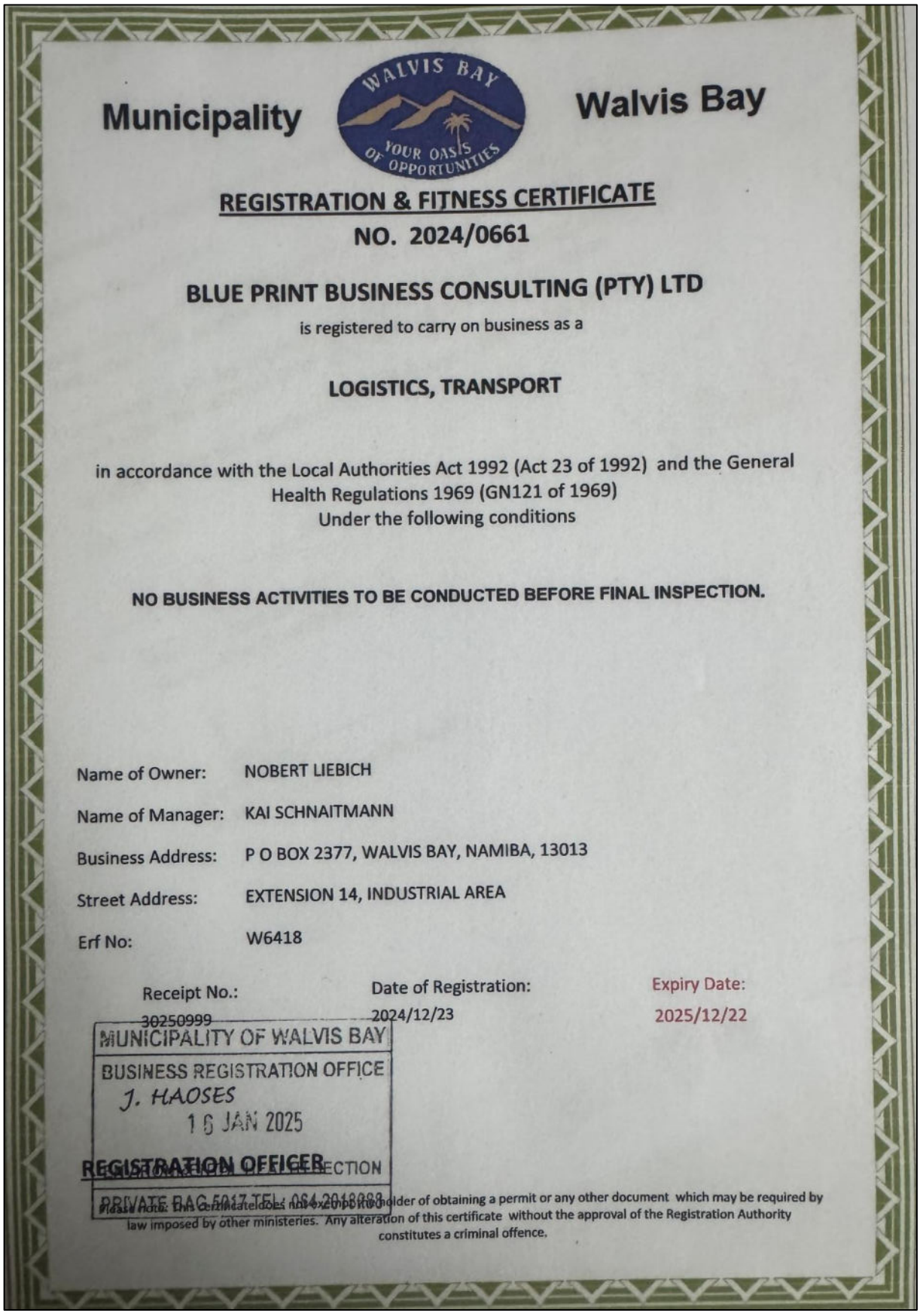
Site Notice


GEO Pollution Technologies Namibia
PUBLIC NOTICE:
ENVIRONMENTAL SCOPING ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN FOR THE STORAGE AND HANDLING OF INDUSTRIAL CARGO AND CHEMICALS IN WALVIS BAY
In terms of the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012), notice is hereby given to all potential interested and affected parties that an application will be made with the environmental commissioner for an environmental clearance certificate for the following:
Project: Environmental Scoping Assessment and Environmental Management Plan for the Storage and Handling of Industrial Cargo and Chemicals on Erf 6418, 5163, 5164 and 5165 in Extension 14, Walvis Bay
Proponent: Transworld Cargo (Pty) Ltd
Environmental Practitioner: Geo Pollution Technologies (Pty) Ltd
The Proponent plans to construct warehouses for the storage and handling of industrial cargo, chemicals and products on erven 6418, 5163, 5164 and 5165, Walvis Bay. The warehouses will be used to store and handle chemicals and products that will be, both exported out- and imported into Namibia, and include marine-grade oils, greases, and lubricants for offshore vessels and rigs, frozen and refrigerated cargo, storage containers, mining metals and ores, and chemicals for various mines and industries in Namibia and southern Africa.
All products will be received by truck and will be offloaded and handled on site with reach stackers and forklifts. Shipping containers will be stacked in the yard while all other cargo will be stored in one of the warehouses. All ship loading/unloading activities in the Port of Walvis Bay will be handled by Namport or third party stevedores and thus will be outside of the scope of the environmental assessment.
Geo Pollution Technologies (Pty) Ltd was appointed by the Proponent to conduct an environmental assessment for the proposed project. As part of the assessment we consult with interested and affected parties. You are hereby invited to register as an interested and affected party with Geo Pollution Technologies. Registration provides you with an opportunity to submit comments, issues or concerns related to the facility, for consideration in the environmental assessment. Please send your written registration or comments to: Fax: 088-62-6368 or E-mail: twc2@thenamib.com
Should you require any additional information please contact Geo Pollution Technologies at 061-257411.
Registration and comments should reach us by 25 February 2025.
Thank you in advance.
Sincerely,
Geo Pollution Technologies

Appendix B: Municipal Registration and Fitness Certificate



Municipality Walvis Bay

WALVIS BAY YOUR OASIS OF OPPORTUNITIES

REGISTRATION & FITNESS CERTIFICATE

NO. 2024/0661

BLUE PRINT BUSINESS CONSULTING (PTY) LTD

is registered to carry on business as a

LOGISTICS, TRANSPORT

in accordance with the Local Authorities Act 1992 (Act 23 of 1992) and the General Health Regulations 1969 (GN121 of 1969)
Under the following conditions

NO BUSINESS ACTIVITIES TO BE CONDUCTED BEFORE FINAL INSPECTION.

Name of Owner:	NOBERT LIEBICH
Name of Manager:	KAI SCHNAITMANN
Business Address:	P O BOX 2377, WALVIS BAY, NAMIBA, 13013
Street Address:	EXTENSION 14, INDUSTRIAL AREA
Erf No:	W6418

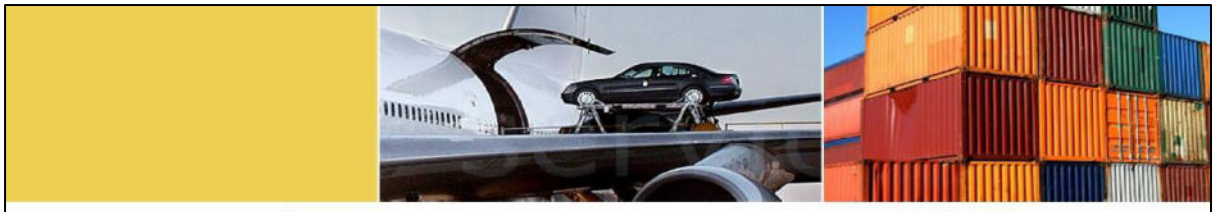
Receipt No.:	Date of Registration:	Expiry Date:
30250999	2024/12/23	2025/12/22

MUNICIPALITY OF WALVIS BAY
BUSINESS REGISTRATION OFFICE
J. HAOSES
16 JAN 2025
REGISTRATION OFFICER

REGISTRATION & LICENSE SECTION
PRIVATE BAG 5017 TEL: 064 2018888

Please note: This certificate does not exempt the holder of obtaining a permit or any other document which may be required by law imposed by other ministeries. Any alteration of this certificate without the approval of the Registration Authority constitutes a criminal offence.

Appendix C: Transport Emergency Response Protocol



Emergency Response Protocol

Transworld Cargo Windhoek
5 Von Braun Street
PO BOX 6746
Windhoek, Namibia

Tel: +264 61 371 100
Fax: +264 61 371 173
Email: info@transworldcargo.net

Transworld Cargo Walvis Bay
Ben Amathila Avenue
PO BOX 2377
Walvis Bay, Namibia

Tel: +264 64 276 000
Fax: +264 64 276 099
Email: info@transworldcargo.net

Transworld Cargo

ISO 9001:2015 SWI-MM-001

Our ERP split into two priorities:

PREPAREDNESS

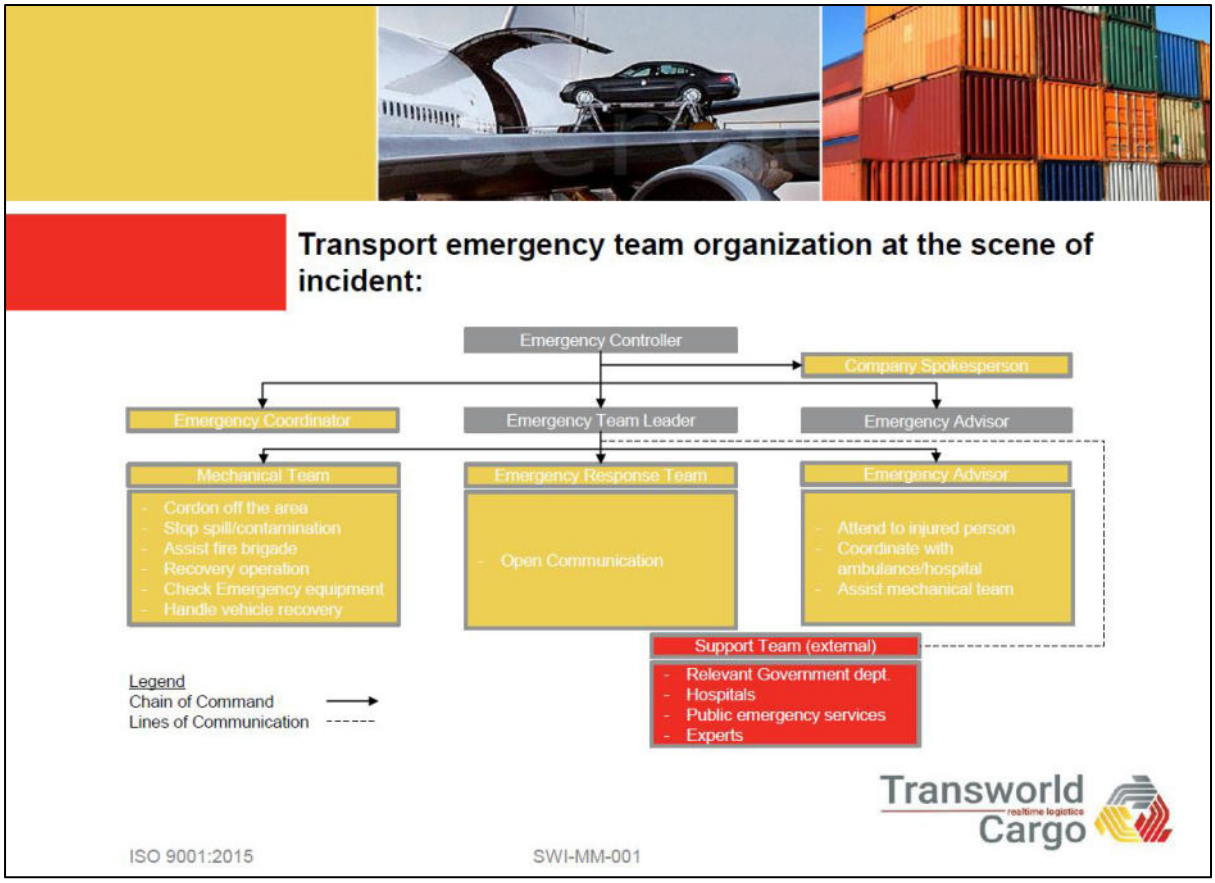
- Understanding TWC's Emergency Response Plan
- Providing company vehicle information during emergency incident
- Providing information about dangerous goods (training & MSDS)
- Understanding the roles of individuals

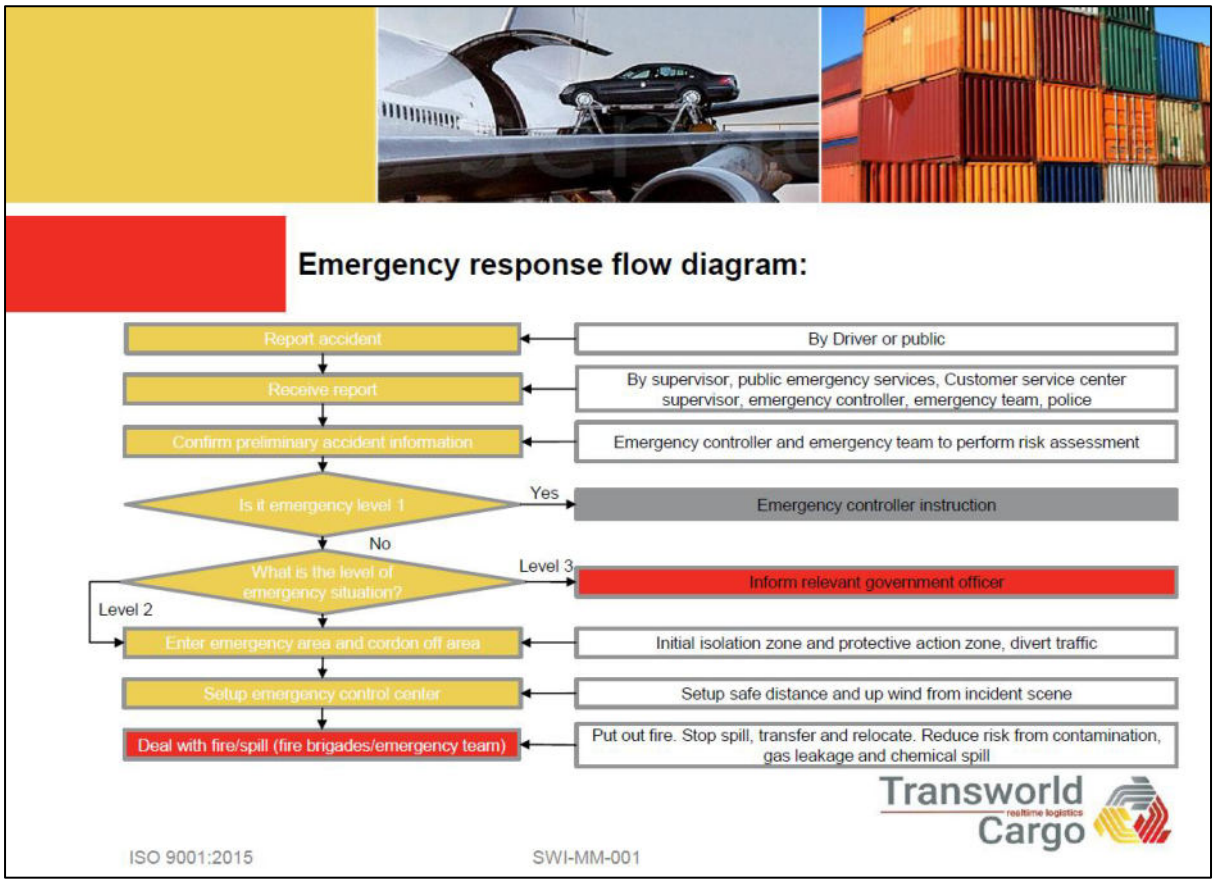
CONDUCTING RESPONSE & RECOVERY OPRATIONS

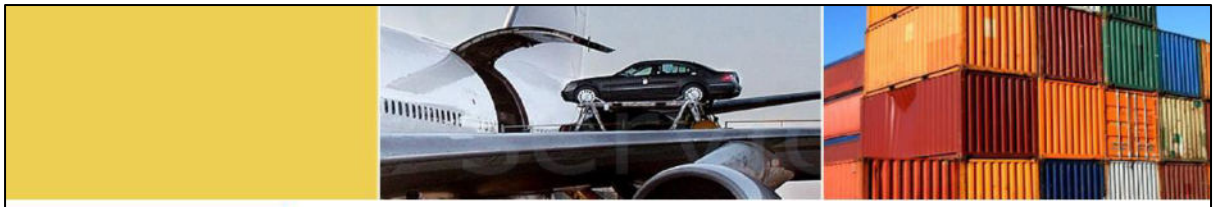
- Planning company's initial response
- Conducting recovery operations at the site
- Conducting site clean up

Transworld Cargo

ISO 9001:2015 SWI-MM-001


Transport emergency team organization at the scene of incident:
Emergency Controller
Company Spokesperson
Emergency Coordinator
Emergency Team Leader
Emergency Advisor
Mechanical Team
- Cordon off the area
- Stop spill/contamination
- Assist fire brigade
- Recovery operation
- Check Emergency equipment
- Handle vehicle recovery
Emergency Response Team
- Open Communication
Emergency Advisor
- Attend to injured person
- Coordinate with ambulance/hospital
- Assist mechanical team
Support Team (external)
- Relevant Government dept.
- Hospitals
- Public emergency services
- Experts
Legend
Chain of Command
Lines of Communication
Transworld Cargo
ISO 9001:2015
SWI-MM-001


Emergency response flow diagram:
Report accident
By Driver or public
Receive report
By supervisor, public emergency services, Customer service center supervisor, emergency controller, emergency team, police
Confirm preliminary accident information
Emergency controller and emergency team to perform risk assessment
Is it emergency level 1
Yes
Emergency controller instruction
No
What is the level of emergency situation?
Level 3
Inform relevant government officer
Level 2
Enter emergency area and cordon off area
Initial isolation zone and protective action zone, divert traffic
Setup emergency control center
Setup safe distance and up wind from incident scene
Deal with fire/spill (fire brigades/emergency team)
Put out fire. Stop spill, transfer and relocate. Reduce risk from contamination, gas leakage and chemical spill
Transworld Cargo
ISO 9001:2015
SWI-MM-001



Level 1 definition

Level 1 Emergency *(Most Severe)*

Definition: An incident that poses an immediate and severe risk to life, the environment, or property and requires urgent, large-scale intervention.

Examples:

A major chemical spill with highly toxic, flammable, or reactive substances in a populated area.
A fire or explosion involving hazardous chemicals.
A release of dangerous goods into water sources or near critical ecosystems.

Response:

Immediate evacuation of affected areas.
Mobilization of specialized hazmat teams and emergency responders.
Coordination with multiple agencies (fire, police, environmental agencies).

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Level 2 definition

Level 2 Emergency *(Moderate Severity)*

Definition: An incident with a contained or localized risk that may escalate without timely intervention.

Examples:

A moderate chemical spill or leak confined to the transport vehicle or an industrial site.
A small fire involving non-volatile hazardous materials.
An overturned chemical cargo truck with minor leakage, away from populated areas.

Response:

Containment measures such as using spill kits or absorbents.
Activation of local emergency response teams.
Notification of regulatory authorities and specialized contractors, if necessary.

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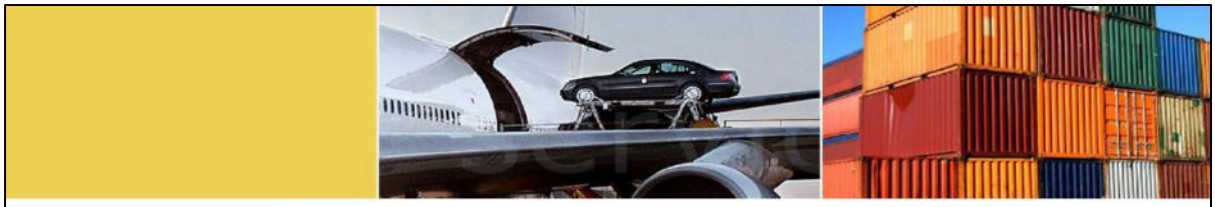

Level 3 definition

Level 3 Emergency *(Least Severe)*

Definition: A minor incident with negligible risk to life, property, or the environment, requiring minimal intervention.

Examples:

A small, non-hazardous spill (e.g., a minor leak from a non-toxic substance).
A chemical drum damaged but not leaking, with no immediate threat.
An incident where the risk is mitigated by standard operating procedures (e.g., correct re-securing of cargo).

Response:

On-site personnel handle the incident using standard tools and protocols.
No need for external emergency responders.
Documentation of the event for records and compliance

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Emergency Response Steps:

Evacuation	If gas/chemical leak is above safe concentration level
First Aid	First aid at the scene and/or transfer to hospital
Area Recovery	Bring area back to normal

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Emergency Contact Numbers

Police Department	.....
Nampol	.....
Municipal Traffic	.....
Fire Bridge	.....
St. Gabriels Ambulance	.....
Life link	.....
Emed Rescue Namibia	.....
IP Camera Solutions	.....
Omega Security Services	.....
Erongo Red	.....
Water Works	.....
Hazmat / Spills SANITECH	.....
Hazmat / Spills (WESCO)	.....
Hazmat / Spills (Haz-kem)	.....
Standby Surveillance Solutions	.....

Privacy Block

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Important TWC Numbers Windhoek

Transport National / Cross border

Marius Van Taak
Mercia Howaes
Michelle Beukes

Distribution

Oliviera Schaneck

Escalation

Reggie Klazen
Martin Gillmann

Privacy Block

Transworld Cargo

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Important TWC Numbers Walvis Bay

Warehouse and local transport (Erongo)

All hours standby number .....
Marshall Beukes .....

Operations

Felicity Nyambe .....

Escalation

David Leech .....
Kai Schnaitmann .....

Privacy Block

Transworld Cargo realtime logistics

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Appendix D: Consultant's Curriculum Vitae

ENVIRONMENTAL SCIENTIST **André Faul**

André entered the environmental assessment profession at the beginning of 2013 and since then has worked on more than 240 Environmental Impact Assessments including assessments of the petroleum industry, harbour expansions, irrigation schemes, township establishment and power generation and transmission. André's post graduate studies focussed on zoological and ecological sciences and he holds a M.Sc. in Conservation Ecology and a Ph.D. in Medical Bioscience. His expertise is in ecotoxicological related studies focussing specifically on endocrine disrupting chemicals. His Ph.D. thesis title was The Assessment of Namibian Water Resources for Endocrine Disruptors. Before joining the environmental assessment profession he worked for 12 years in the Environmental Section of the Department of Biological Sciences at the University of Namibia, first as laboratory technician and then as lecturer in biological and ecological sciences.

CURRICULUM VITAE ANDRÉ FAUL

Name of Firm	:	Geo Pollution Technologies CC.
Name of Staff	:	ANDRÉ FAUL
Profession	:	Environmental Scientist
Years' Experience	:	23
Nationality	:	Namibian
Position	:	Environmental Scientist
Specialisation	:	Environmental Toxicology
Languages	:	Afrikaans – speaking, reading, writing – excellent
		English – speaking, reading, writing – excellent

EDUCATION AND PROFESSIONAL STATUS:

B.Sc. Zoology/Biochemistry	:	University of Stellenbosch, 1999
B.Sc. (Hons.) Zoology	:	University of Stellenbosch, 2000
M.Sc. (Conservation Ecology)	:	University of Stellenbosch, 2005
Ph.D. (Medical Bioscience)	:	University of the Western Cape, 2018

First Aid Class A	EMTSS, 2017, OSH-Med 2022
Basic Fire Fighting	EMTSS, 2017, OSH-Med 2022

PROFESSIONAL SOCIETY AFFILIATION:

Environmental Assessment Professionals of Namibia (Practitioner)

AREAS OF EXPERTISE:

Knowledge and expertise in:

- Water Sampling, Extractions and Analysis
- Biomonitoring and Bioassays
- Biodiversity Assessment
- Toxicology
- Restoration Ecology

EMPLOYMENT:

2013-Date	:	Geo Pollution Technologies – Environmental Scientist
2005-2012	:	Lecturer, University of Namibia
2001-2004	:	Laboratory Technician, University of Namibia

PUBLICATIONS:

Publications:	5
Contract Reports	+240
Research Reports & Manuals:	5
Conference Presentations:	1