APP-007559

ZIMBABWE DRY PORT FACILITY IN THE PORT OF WALVIS BAY

UPDATED ENVIRONMENTAL MANAGEMENT PLAN

Prepared by:

Prepared for:

May 2026

Project:	**ZIMBABWE DRY PORT FACILITY IN THE PORT OF WALVIS BAY UPDATED ENVIRONMENTAL MANAGEMENT PLAN**	
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Application No:	007559	
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Report Approval	 **André Faul** Conservation Ecologist	

I, IEOPLINA S. HAMUKOTO, acting as the Proponent's representative (National Handling Services (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 01 day of JUNE 2026

National Handling Services (Pty) Ltd

2024/0839
Registration No.

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1 INTRODUCTION

National Handling Services (Pty) Ltd (the Proponent) requested Geo Pollution Technologies (Pty) Ltd to update their environmental management plan (EMP) and to facilitate the transfer of the current environmental clearance certificate (ECC) from Road Motor Services (Pvt) Ltd to National Handling Services (Pty) Ltd, in preparation for the ECC renewal process. The updated EMP is required to renew the facility's existing ECC with the Ministry of Environment, Forestry and Tourism (MEFT). The ECC is a legal requirement for the continued operations of Zimbabwe Dry Port in the Port of Walvis Bay (Figure 1-1).

The objectives of the updated EMP are, in consideration of the definite and potential impacts identified during the environmental assessment to:

- Provide an updated summarised legal framework within which the Proponent operates.
- Update and identify new measures to prevent, and where not preventable, mitigate negative impacts associated with all care and maintenance, operational and potential future decommissioning activities of the facility.
- Update and identify new measures to enhance or optimise beneficial (positive) impacts.
- Guide the Proponent on implementation of a monitoring programme aimed at monitoring and auditing compliance to the EMP.
- Ensure that appropriate environmental training is provided to responsible personnel and contractors.
- Transfer the ECC to the new holding company.

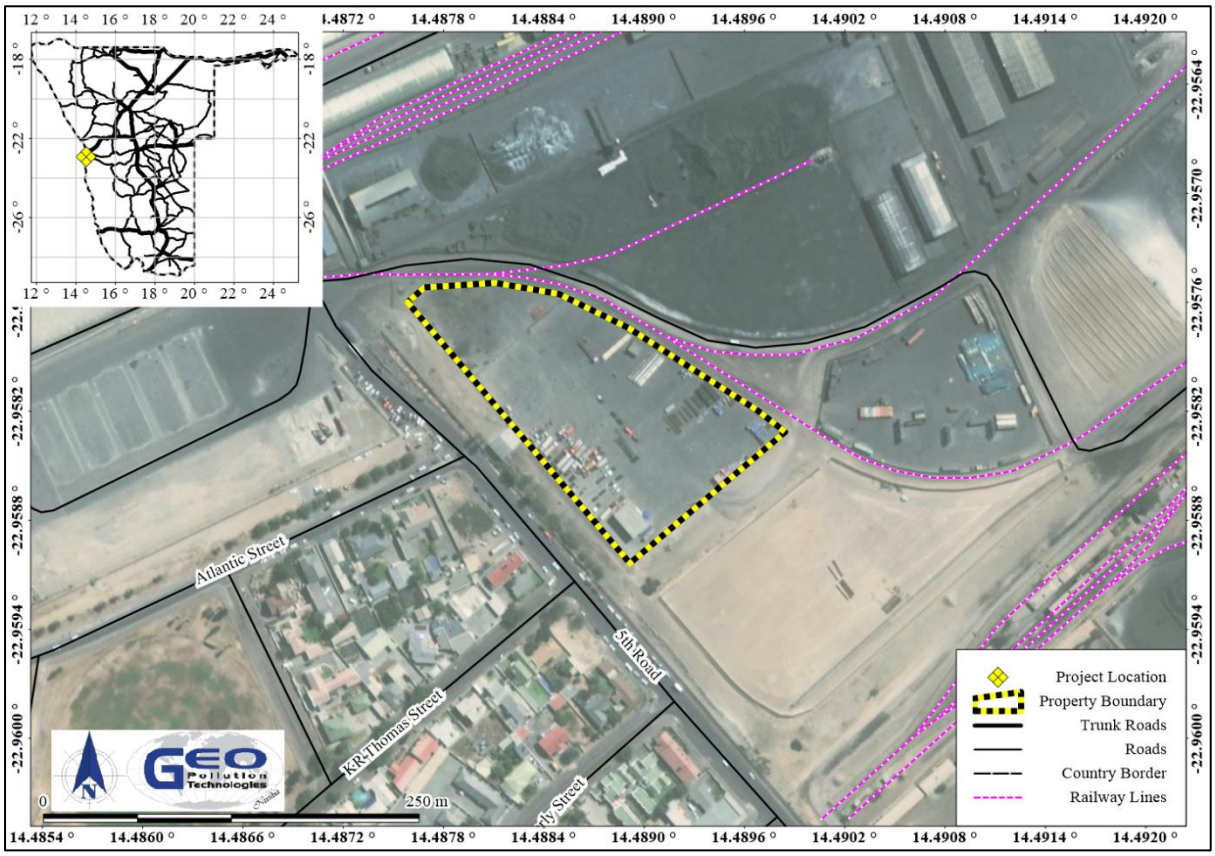

Figure 1-1 Project location

2 OPERATIONS AND RELATED ACTIVITIES

The Zimbabwe Dry Port is located within the Port of Walvis Bay and has a yard that covers an area of 18,332 m^2. The activities of the facility mainly involve the receipt, handling, temporary storage and distribution of various imported and exported commodities on behalf of Zimbabwe and other SADC countries.

2.1 EXISTING AND PROPOSED INFRASTRUCTURE

The Proponent proposes to expand the facility through the construction of a warehouse with an approximate storage capacity of 30,000 m^3. The warehouse will be used for the storage and handling of approved commodities and will provide a more controlled environment for break-bulk cargo, bagged products, palletised goods and other materials requiring covered storage. The development will also support improved separation between different commodity types, including foodstuffs, general cargo, industrial materials and potentially hazardous or controlled goods.

Mobile reefer containers will be added to the operations to allow for the temporary storage of frozen products and other temperature-sensitive cargo. These units will be placed in designated areas with suitable electrical connections and safe access for inspection, maintenance, loading and offloading activities.

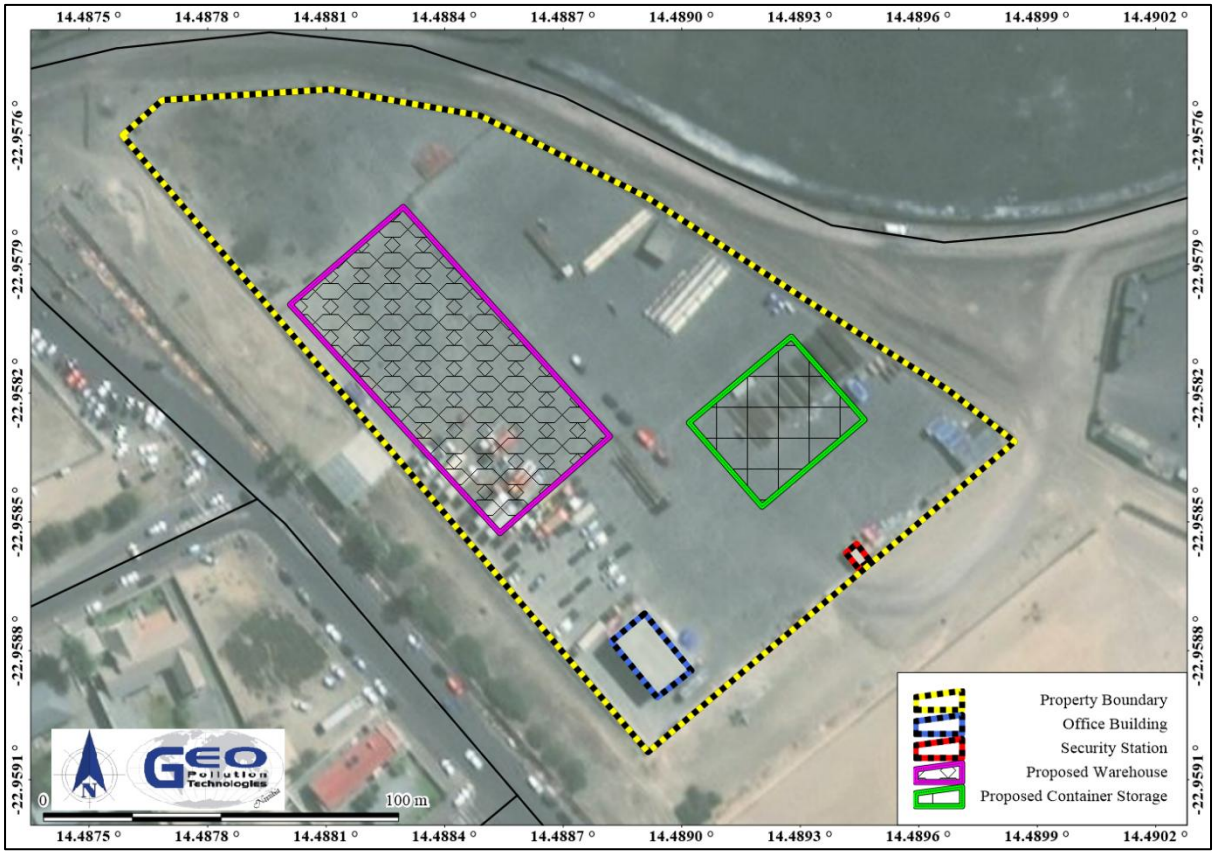

Figure 2-1 Proposed and current infrastructure layout of Zimbabwe dry port

2.2 OPERATIONAL ACTIVITIES

General operations at the Zimbabwe Dry Port involve the receipt, handling, temporary storage and dispatch of imported and exported commodities destined to and from Zimbabwe. The facility operates within the Port of Walvis Bay under Namport jurisdiction and functions as a customs-related logistics hub for containerised, break-bulk and general cargo. Existing infrastructure on site includes an office building and a security office at the entrance, with future development to include the warehouse and mobile reefer containers.

Cargo is transported to and from the facility, primarily by truck. On arrival, cargo is inspected, documented and directed to designated handling or storage areas according to its classification and handling requirements. General commodities handled at the dry port include paint, machinery, vehicles and components, tyres, chemicals, frozen products, dangerous goods, containers, timber, copper, manganese, granite stones, plastics, rubber products, steel, sugar, rice, cement, clothing/textiles, glass products and grain. Additional commodities to be included under the updated scope are tobacco, fertiliser, chrome, lithium and coal. The cargo handled can however change depending on market demands and different cargo types can be included in the inventory.

Break-bulk cargo such as bagged, boxed or palletised materials will be offloaded and stored within the warehouse or other demarcated areas. Commodities that may generate dust, such as cement, grain, coal, fertiliser, chrome and other mineral products, will be stored and handled in a manner that limits windblown dust and prevents contamination of stormwater, soil and other cargo.

Mobile container reefers will be used for the temporary storage of perishable or temperature-sensitive products, including frozen products and other approved cargo requiring refrigeration. These reefers will be placed in designated areas and connected to suitable electrical supply points. Routine inspections must be undertaken to check for electrical faults, damaged cables, abnormal noise, refrigerant leaks and general housekeeping around the units.

Hazardous or controlled cargo, including chemicals, paint, fertiliser, lithium and dangerous goods, must be handled according to Namibian legislation, Namport requirements and the applicable Material Safety Data Sheets (MSDS). Such cargo will be clearly labelled, segregated from incompatible materials and stored in suitable areas with spill control measures, firefighting equipment and emergency response procedures available.

3 ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS

The legislation and standards provided in Table 3-1 to Table 3-4 govern the environmental assessment process in Namibia and/or are relevant to the facility.

Table 3-1 Namibian law applicable to the factory 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 ♦ Lists activities that require an environmental clearance certificate ♦ Provides Environmental Impact Assessment Regulations ♦ Lists the "polluter pays principle" as one of the principles of environmental management
Namibia Ports Authority Act Act No. 2 of 1994, Government Notice No. 30	♦ Provides for the establishment of the Namibian Ports Authority to undertake the management and control of ports

Law	Key Aspects
Petroleum Products and Energy Act Act No. 13 of 1990, Government Notice No. 45 of 1990	♦ Regulates petroleum industry ♦ Makes provision for impact assessment ♦ Petroleum Products Regulations (Government Notice No. 155 of 2000) ♦ Prescribes South African National Standards (SANS) or equivalents for construction, operation and decommissioning of petroleum facilities (refer to Government Notice No. 21 of 2002)
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 ♦ Provides for licencing and permitting of abstraction sea water and disposal of effluent ♦ Prevention of water pollution and assignment of liability
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
Draft Wetland Policy of 2003	♦ Considering the Walvis Bay Lagoon, the Wetland Policy of 2003 is of importance and includes: o Protection and conservation of wetlands and ecosystems o As well as, including fulfilling Namibia's International obligations to the Ramsar Convention and the SADC Protocol on Shared Water Systems
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
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.

Table 3-2 Municipal by-laws, guidelines and regulations

Municipal By-laws, Guidelines or Regulations	Key Aspects
Integrated Urban Spatial Development Framework for Walvis Bay	♦ Completed during 2014 and in the final stages of acceptance ♦ Overall vision to transform Walvis Bay to being the primary industrial city in Namibia ♦ Aims to ensure that appropriate levels of environmental management are 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
Drainage and Plumbing By-Law of 1958 (updated in 1982)	♦ Regulations regarding discharges into sewers specific to Walvis Bay

Table 3-3 Relevant multilateral environmental agreements for Namibia and the development

Agreement	Key Aspects
Convention on Biological Diversity	♦ Primary goal is the conservation of biodiversity ♦ Prescribes the precautionary principle ♦ Parties to the convention are obliged to: ♦ Establish a network of protected areas ♦ Create buffer areas adjacent to these protected areas using environmentally sound and 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 ♦ Recognises 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
UN Convention for the Prevention of Marine Pollution from Land-based Sources	♦ Concerns itself with the protection of marine fauna and flora by preventing marine pollution from land-based sources ♦ Contracted parties, are committed to take all possible steps to prevent pollution of the sea as well as the direct or indirect introduction of substances

	or energy by humans into the marine environment resulting in such adverse effects as harm to living resources and to marine ecosystems, hazards to human health, damage to services/ facilities or interference with other legitimate uses of the area
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.
Stockholm Declaration on the Human Environment, Stockholm 1972.	♦ Recognises 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

Table 3-4 Standards or codes of practice

Standard or Code	Key Aspects
Namport Specifications and Legislation	♦ Enforced Standards and Codes which governs construction and operations relating to the port.
International Dangerous Goods Code (IMDG Version 10 of 2010)	♦ Prescribed by Namport for handling and storage of dangerous cargo

4 IMPLEMENTATION OF THE EMP

The sections below outline the management of the environmental elements that may be affected by the activities associated with the various phases of the facility. These phases are as follows:

- Planning Phase
- Construction Phase (Upgrades and Maintenance)
- Operational Phase
- Decommissioning Phase

The EMP is a living document that must be prepared in detail, and regularly updated, by the Proponent as the project progress and evolve. Impacts addressed and mitigation measures proposed are seen as minimum requirements which have to be elaborated on where appropriate. Delegation of mitigation measures and reporting activities should be determined by the Proponent and included in the EMP.

All monitoring results must be reported on as indicated. Reporting is important for any future renewals of the ECC and must be submitted to the MEFT. Renewal of ECC will require bi-annual reports based on the monitoring prescribed in this EMP.

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

4.1 PLANNING

During the phases of planning for the operations, maintenance / construction and decommissioning phases 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) activities and operations of the project remains 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.
- Have the following on site, where reasonable, to deal with all potential emergencies:
    - EMP / risk management / mitigation / emergency response plan and health safety and environment (HSE) manuals
    - Adequate protection and indemnity insurance cover for incidents;
    - Relevant labour and safety standards;
    - Procedures, equipment and materials required for emergencies.
- If one has not already been established, 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 operations, maintenance / construction, and decommissioning as outlined in the EMP.
- Submit bi-annual reports to the MEFT to allow for ECC renewal after three years. This is a requirement by MEFT.
- Appoint a specialist environmental consultant to update the EMP and apply for renewal of the ECC prior to expiry.

4.2 IMPACTS AND RELATED MANAGEMENT MEASURES

The following section provide management measures for both the operational phase as well as care and maintenance activities related to the project.

4.2.1 Employment

An increase of skilled and professional labour has and will continue to take place due to the operations of the facility. Employment is sourced locally while skilled labour/contractors may be sourced from other regions.

Desired Outcome: Employment to local Namibians.

Actions

Enhancement:

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

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Bi-annual summary report based on employee records.

4.2.2 Skills, Technology and Development

During various phases of construction and operations, training is provided to a portion of the workforce associated with the dry port. 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.

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

Actions

Enhancement:

- If the skills exist locally, employees and contractors must first be sourced from the town, then the region and then nationally. Deviations from this practice must be justified.
- Skills development and improvement programs to be made available as identified during performance assessments.
- Employees to be informed about parameters and requirements for references upon employment.

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.
- Summarise all training (formal and informal) in a bi-annual report

4.2.3 Revenue Generation

Through ongoing and future operations, revenue is and will be generated and taxes paid to the national treasury. Employees will be renumerated and their livelihoods sustained. The increase in spending power of employees supports local businesses and sustains the local economy.

Desired Outcome: Contribution to national treasury and renumeration of employees in accordance with Namibian legislation.

Actions

Enhancement:

- The Proponent must employ local Namibians where possible. Deviations from this practice must be justified.
- Payment of taxes, levies and salaries in accordance to Namibian legislation.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Bi-annual summary report based on employee records.

4.2.4 Demographic Profile and Community Health

The project is reliant on labour during the operational phase. The scale of the project is limited and it is not foreseen that it has created a change in the demographic profile of the local community. Community health may be exposed to factors such as communicable disease like HIV/AIDS and alcoholism/drug abuse, associated with the transport industry (shipping of good to and from Walvis Bay). An increase in foreign people in the area may potentially increase the risk of criminal and socially/culturally deviant behaviour.

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 only local people from the area where possible, deviations from this practice should be justified appropriately.
- Adhere to all municipal by-laws relating to environmental health which includes, but is not limited to, sand and grease traps for the various facilities and sanitation requirements.

Mitigation:

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

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.

4.2.5 Traffic

The dry port is within an area zoned for harbour use, in the Port of Walvis Bay. All trucks accessing the site for loading and offloading of cargo has to pass through the Namport main gate. This may have increased the traffic flow through Walvis Bay and the Port and may increase congestion and the risk of accidents.

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

Actions

Mitigation:

- Trucks delivering or collecting goods should not be allowed to obstruct any traffic in surrounding areas and the town.
- Trucks associated with the facility should not be allowed to park or overnight in surrounding roads or in streets outside of the port, and may only overnight at areas designated for this purpose.
- Adhere to Namport and Town Council regulations e.g. preferred routes through town and mitigation measures provided in Namport EMP's.
- 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, TREMCARD, etc.) is provided in the vehicle. Verify that the driver of the vehicle has undergone appropriate training.

Responsible Body:

- Proponent

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.
- Bi-annual report of all incidents reported, complaints received, and action taken.

4.2.6 Health, Safety and Security

Activities associated with the operational phase is reliant on human labour and therefore exposes them to health and safety risks. Activities such as the operation of machinery, unsafe stacking, falling from heights and handling of hazardous chemicals (inhalation and carcinogenic effect of certain chemicals), poses the main risks to employees. If not contained, windblown dust of certain ores and chemicals may further pose health risk to nearby receptors such as residents. Security risks are related to unauthorised entry, theft and sabotage.

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

Actions

Prevention:

- Clearly label dangerous and restricted areas as well as dangerous equipment and products.
- Equipment that will be locked away on site must be placed in a way that does not encourage criminal activities (e.g. theft).
- Provide all employees with required and adequate personal protective equipment (PPE).
- Ensure that all personnel receive adequate training on operation of equipment.
- Personnel to be trained in correct chemical handling procedures, the dangers of chemical exposure, and potential risks of injuries on site.
- All health and safety standards specified in the Labour Act should be complied with.
- Implementation of maintenance register for all equipment and fuel/hazardous substance storage areas.
- All hazardous substances should be handled according to the MSDS.

Mitigation:

- Selected personnel should be trained in first aid and a first aid kit must be available on site. The contact details of all emergency services must be readily available.
- Maintain a MSDS file on site at a readily accessible location. The MSDS file must continuously be updated and the relevant personnel informed and trained as per the MSDS content.
- Security procedures and proper security measures must be in place to protect workers and cargo.
- Strict security that prevents unauthorised entry during all phases should be practiced, with access logs for vehicles and personnel.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Any incidents must be recorded with action taken to prevent future occurrences.
- A report should be compiled every 6 months of all incidents reported. The report should contain dates when training was conducted and when safety equipment and structures were inspected and maintained.

4.2.7 Fire and Explosion

Operational and development activities may increase the risk of the occurrence of fires. Certain products that may be kept on site can be flammable in nature and can even become explosive when exposed to incompatible materials. The site is located within the port, opposite to residential properties and fires and explosion on site can cause extensive damage to the port or surrounding properties and can lead to casualties.

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

Actions:

Prevention:

- Ensure all chemicals are stored strictly according to MSDS and SANS instructions. This includes segregation of incompatible products.
- Maintain regular site, mechanical and electrical inspections and maintenance.
- Clean all spills / leaks.

Mitigation:

- A holistic fire protection and prevention plan is needed for flammable products and the consumer fuel installation. This plan must include an emergency response plan, firefighting plan and spill recovery plan, and should include specific substances handled at the site.
- Maintain firefighting equipment, good housekeeping and personnel training (firefighting, fire prevention and responsible housekeeping practices).

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.
- Bi-annual report of all incidents reported. The report should contain dates when fire drills were conducted and when fire equipment was tested and training given.

4.2.8 Noise

Excessive noise may be generated during the construction phase through the use of construction vehicles, delivery trucks, equipment, power tools and general building activities associated with the proposed warehouse development. Construction-related noise will be temporary, but may at times be elevated during site preparation, material delivery, civil works and structural construction. During operations, noise may be generated by heavy and light motor vehicles accessing the site to load and offload cargo, the movement and stacking of containers, forklifts and other cargo-handling equipment. Mobile reefer containers will also be added to the operations in future and will generate noise from their electric motors and cooling units, especially where they operate continuously during the day and night. As the reefers will be electrically powered, noise is however expected to be limited.

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

Actions

Prevention:

- The Health and Safety Regulations of the Labour Act limits on noise to prevent hearing impairment for workers on site should be followed during the construction and operational phases.
- The facility should meet World Health Organization (WHO) guideline on maximum noise levels (Guidelines for Community Noise, 1999) for noise at industrial areas during daytime operating hours (07h00 to 17h30).
- During after hour operations (17h30 to 07h00) WHO standards to prevent nuisance at residential areas should be met at the nearby residential properties, this is, night time noise levels of 35 dB or lower over an 8 hour period and not exceeding 45 dB.
- The facility should further strive to meet WHO standards at the nearby residential properties to prevent a nuisance during daytime operations as well, this is daytime noise levels not exceeding 55 dB.
- All machinery must be regularly serviced to ensure minimal noise production.
- 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:

- Hearing protectors as standard PPE for workers in situations with elevated noise levels.
- Design facility so that buildings and rub halls acts as sound barriers between the residential area and the noise producing activities in the dry port.
- Place reefers so that their compressors face away from residential areas as far as practically possible.
- The addition of cladding (closed-off sides and top) on the reefer cat walks can act as noise barriers between residential areas and the reefer compressors.
- Should noise originating from the dry port continue to be a nuisance to nearby residential areas, changes to the boundary fence can be made to act as an additional noise barrier (e.g. stacked containers or boundary wall). This should be done in conjunction with Namport, as this will not only act as barrier for the dry port, but for all noise producing activities in the port.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

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

4.2.9 Dust and Air Quality

Reduced air quality as a result of windblown ore and chemical dust can cause health effects, especially through chronic inhalation of such dust. All chemicals and ore will however be transported and handled as break bulk (such as bags or crates), or containerised. This will limit the amount of dust which can be transported by wind.

During construction activities, additional dust may be produced from activities such as excavation. The entire site is however covered with interlocked paving, therefor dust and air quality impacts are expected to be minimal during construction phases.

Desired Outcome: To prevent nuisance and health impacts and to maintain the integrity of the built environment.

Actions

Prevention:

- Agency for Toxic Substances and Disease Registry (United States of America) sets the Minimum Risk Level of contaminants in air that is expected not have any health risk over a specified duration of exposure. Air quality at the site, or receptors on any part of the route of transport and at receptors may not increase above these limits.
- All chemical/ore bulk bags or containers must be inspected prior to handling to ensure they are not damaged. Forklift operators to be suitably trained to ensure cargo is carefully and safely handled.
- All truck loads must be suitably covered to prevent the escape of dust from the load. This includes empty trucks that may still contain some dust.
- Appoint reputable contractors for transporting of ore and chemicals who prioritise a "zero dust policy".
- All handling of bulk chemicals/ore which present a risk of windblown dust must be handled in an enclosed warehouse, to prevent dust from escaping the site.
- Bulk chemicals/ore which present a risk of windblown dust may not be handled in the open during periods of strong winds (>45 km/h).

Mitigation:

- Dust suppression in the warehouse and during construction activities when required.
- Cease any operations with immediate effect once dust plumes that cannot be contained becomes visible. Operations can commence once sufficient mitigation measures have been implemented or when the cause of dust disseminates. This includes operational processes such as handling and loading / offloading of ore at the bulk storage yard, transport through town, offloading in the port, etc.
- All trucks transporting cargo must be service regularly and make use of technology to reduce emissions. This includes selective catalytic reduction, diesel particulate filters and diesel oxidation catalysts.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Any mineral ore that may be handled as loose product, must be sampled irregularly, once every six months, by an independent specialist for asbestos in the ore. If asbestos is detected, all operations must cease immediately and only be continued under very strict and approved health and safety procedures related to the handling of asbestos containing material.
- Any complaints received regarding ore / chemical dust and emissions along the transport routes and sites of handling of ore must be recorded, investigated and the problem rectified.
- Any incidents must be recorded with action taken to prevent future occurrences.

- Bi-annual report of all incidents reported and monitoring performed. The report should contain dates when safety equipment and structures were inspected and maintained

4.2.10 Waste production

Various waste streams are and will be produced during the operational phase and development of the facility. Waste may include hazardous waste associated with the handling of chemicals and contaminated packaging material. Domestic waste is 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 by hydrocarbon products. Contaminated soil and water are considered as a hazardous wastes. If correct measures are not followed, and if contaminated equipment is washed there, wash water from the proposed wash bay may become contaminated and end up in the municipal sewers.

Desired Outcome: To reduce the amount of waste produced, 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 disposal storage facilities are available.
- Ensure waste cannot be blown away by wind.
- Prevent scavenging (human and non-human) of waste storage.
- The proposed wash bay should be designed according to municipal and Namport regulations.
- 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, pipe burst, valve malfunction, etc. occur. Where drains are present to drain wash water, these should only be opened during times of washing.
- Equipment contaminated with chemicals and hazardous substances may not be washed at the wash bay, unless contaminants can be effectively collected and disposed of as hazardous waste.

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).
- See the material safety data sheets available from suppliers for disposal of contaminated products and empty containers.
- Liaise with the municipality regarding waste and handling of hazardous waste.
- All information and reporting to be included in a bi-annual report.

4.2.11 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. Future development may require an increase in lighting on the site at night. 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.

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

Actions.

Mitigation:

- Report any extraordinary ecological sightings to the MEFT.
- 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 avoided where possible.
- Lights used at night 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.

4.2.12 Groundwater, Surface Water and Soil Contamination

Operations entail the storage and handling of various potentially hazardous substances which present a contamination risk. Contamination may either result from failing storage facilities, or spills and leaks associated with the handling of hazardous substances. Such material may contaminate surface water, soil and groundwater. In an event of groundwater contamination, the shallow groundwater may lead to a rapid lateral spread of pollutants, especially hydrocarbons. This will further have potential impacts on underground utilities and may negatively impact neighbouring properties.

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

Actions

Prevention:

- Storage of hazardous substances should be conducted on spill proof surfaces provided for this purpose. E.g. Concrete slabs with regularly maintained seals between slabs.
- The procedures followed to prevent environmental damage during service and maintenance, and compliance with these procedures, must be audited and corrections made where necessary.
- Proper training of on-site personnel must be conducted on a regular basis (refuelling, handling of hazardous substances, spill detection, spill control).

Mitigation:

- Spill clean-up means must be readily available on site as per the relevant MSDS.
- Emergency Response Plans and Spill Contingency Plans must be in place and include all chemicals being handled. These should be updated as new chemicals are added to those being handled.
- Any spill must be cleaned up immediately.
- All hazardous waste, such as contaminated materials, hydrocarbons and empty chemical containers should be disposed of at a suitably classified hazardous waste disposal facility.
- To prevent the tearing of breakbulk bags a limit should be placed on stacking height during transport and storage. Only superior quality bags should be used.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Bi-annual report of all spills or leakages reported. The report should contain the following information: date and duration of spill, product spilled, volume of spill, remedial action taken, comparison of pre-exposure baseline data (previous pollution conditions survey results) with post remediation data and a copy of documentation in which spill was reported to Ministry of Industries, Mines and Energy.

4.2.13 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, in the port of Walvis Bay, and falls in line with the development in the area. The facility is however on the boundary of the port of Walvis Bay (industrial area) with residential properties opposite the site. A change in the landscape character as well as lighting used at night may therefore be aesthetically displeasing for residents in neighbouring properties. Should a noise barrier be required at the boundary fence of the property (such as a container wall), further visual impacts can be expected on nearby residential properties.

Current operations are kept tidy and neat (as documented during the site visit) which promotes effectiveness and pollution prevention while being aesthetically pleasing.

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 is 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.
- All lighting used at the south eastern and southwestern boundary of the site (floodlights) should be directed away from the residential properties.
- Noise barriers should be designed / painted to align with the existing landscape character.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Bi-annual report of all complaints received and actions taken.

4.2.14 Cumulative Impact

Possible cumulative impacts associated with the operational phase include increase in traffic frequenting the site and along the sections of roads leading to the harbour and dry port due to the variety of developments in the area. This will have a cumulative impact on traffic flow on surrounding streets.

The increase of traffic and other noise generating activities in the area may further increase the noise impacts on residential properties. The cumulative effect of lighting on birds due to port related developments may also increase the risk of collisions and interference with bird flight paths at night.

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:

- Reviewing of bi-annual reports on all other impacts will provide insight into the cumulative nature of impacts and guide corrective action measures to be investigated and implemented.

4.3 DECOMMISSIONING AND REHABILITATION

Decommissioning is not foreseen during the validity of the ECC. 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. 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.

4.4 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.

5 CONCLUSION

The above updated EMP, if properly implemented will help to continually minimise adverse impacts on the environment. Where impacts occur, immediate action must be taken to reduce the escalation of effects associated with these impacts. To ensure the relevance of this document to the specific stage of project, it needs to be reviewed throughout all phases.

The EMP should continue to be used as an on-site reference document during all phases of the proposed project, and auditing should take place in order to determine compliance with the EMP for the proposed site. Parties responsible for transgression of the EMP should be held responsible for any rehabilitation that may need to be undertaken.

Monitoring reports must be submitted to the MEFT every six months to allow for the future renewal of the ECC.