

**OPERATIONS AND CONSTRUCTION ACTIVITIES OF THE
EXISTING ZAMBIA DRY PORT FACILITY IN THE PORT OF
WALVIS BAY**

ENVIRONMENTAL ASSESSMENT SCOPING REPORT - UPDATE




Assessed by:



Assessed for:



September 2020

Project:	OPERATIONS AND CONSTRUCTION ACTIVITIES OF THE ZAMBIA DRY PORT FACILITY IN THE PORT OF WALVIS BAY: ENVIRONMENTAL ASSESSMENT SCOPING REPORT - UPDATE	
Report: Version/Date:	Final September 2020	
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Report Approval	 André Faul Conservation Ecologist	

I SHARLEN MOODLEY acting as the Proponent's representative (Africa Union Financial Services), hereby confirm that the project description contained in this report 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 and the report is hereby approved.

Signed at AUC on the 03 day of SEPTEMBER 2020.

Shardley
Africa Union Financial Services (Pty) Ltd

2009/0715
Company Registration/Identity No.

EXECUTIVE SUMMARY

Africa Union Financial Services (Pty) Ltd, trading as Africa Union Cargo Namibia (“the Proponent”) requested Geo Pollution Technologies (Pty) Ltd to update their **existing** environmental assessment for the Zambia Dry Port, within the port of Walvis Bay. The update is required to include the proposed changes and activities discussed in this report. The Proponent acts as a logistic hub not only for cargo to and from Zambia, but for other SADC countries as well. Operations and construction activities of the dry port include the receipt, handling and distribution of cargo, storage and handling of containers and reefer containers installation and operations of a consumer fuel installation, construction of warehouses; and general operational activities and maintenance procedures associated with a dry port.

The study is conducted to determine all environmental, safety, health and socio-economic impacts associated with the development and operations of the facility. Relevant environmental data has been compiled by making use of secondary data from the initial impact assessment report and a reconnaissance site visit. Potential environmental impacts and associated social impacts were identified and are addressed in this report.

Due to the nature and location of the facility, impacts can be expected on the surrounding environment, see summary impacts table below. The facility is surrounded by the Port of Walvis Bay (harbour use) and residential properties. It is thus recommended that environmental performance be monitored regularly to ensure regulatory compliance and that corrective measures be taken if necessary. The operations of the dry port play an important role in the export and import of goods to and from Zambia and the region, via Namibia.

The major concerns related to the operations of the facility are that of noise pollution, surface water and soil contamination and the possibility of fire. This will however be limited by mitigation measures and adherence to South African National Standards and Material Safety Data Sheet instructions. Furthermore, noise pollution should meet the requirements of the World Health Organisation standards. By appointing local contractors and employees and implementing educational programs the positive socio-economic impacts can be maximised while mitigating any negative impacts.

The environmental management plan included in Section 9 of this document should be used as an on-site reference document during all phases (planning, construction, operations and decommissioning) of the facility. All monitoring and records kept should be included in a report to ensure compliance with the environmental management plan. Parties responsible for transgression of the environmental management plan should be held responsible for any rehabilitation that may need to be undertaken. A Health, Safety, Environment and Quality policy as well as Environmental Policy could be used in conjunction with the environmental management plan. Operators and responsible personnel must be taught the contents of these documents. Municipal or national regulations and guidelines must be adhered to and monitored regularly as outlined in the environmental management plan.

Impact Summary Class Values Prior to Mitigation

Impact Category	Impact Type	Construction		Operations	
<i>Positive Rating Scale: Maximum Value</i>		5		5	
<i>Negative Rating Scale: Maximum Value</i>			-5		-5
EO	Skills, Technology and Development	2		3	
EO	Revenue Generation and Employment	2		3	
SC	Demographic Profile and Community Health		-1		-2
SC	Traffic		-1		-2
SC	Health, Safety and Security		-2		-3
PC	Fire and Explosion		-3		-3
PC	Noise		-2		-2
PC/BE	Dust and Air Quality		-2		-3
PC	Waste Production		-2		-2
BE	Ecosystem and Biodiversity Impact		-1		-2
PC/BE	Groundwater, Surface Water and Soil Contamination		-2		-2
SC	Visual Impact		-1		-1
PC	Cumulative Impact				-2

BE = Biological/Ecological EO = Economical/Operational PC = Physical/Chemical SC = Sociological/Cultural

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1 BACKGROUND AND INTRODUCTION

Geo Pollution Technologies (Pty) Ltd was appointed by Africa Union Financial Services (Pty) Ltd, trading as Africa Union Cargo Namibia (the Proponent) to draft an updated environmental assessment and environmental management plan for the operations of the existing Zambia dry port, in the port of Walvis Bay (Figure 1-1). The facility consist of two separate sites (referred to as phase one and phase two) and an initial environmental assessment was conducted for cold store construction and operations on phase two (Garrard, 2014). With changing demands in goods and services, only phase one has thus far been developed and the cold store on phase two will no longer be constructed. Instead, phase two will be developed to complement phase one for the storage and handling of various commodities imported or exported via the Port of Walvis Bay.

Ultimately operations of the dry port will involve:

- ◆ Stacking and storage of full and empty containers;
- ◆ Stacking and storage of reefer containers (cold storage);
- ◆ Cartage of goods from vessels berthing in the port to the dry port;
- ◆ Break bulk handling and packaging;
- ◆ Rub hall/warehouse operations;
- ◆ Consumer fuel installation operations;
- ◆ General operational activities and maintenance procedures associated with the dry port including logistics related to import and export of goods.

As part of the development of the facility, the Proponent proposes to import and export break bulk ore and chemicals to and from Namibia and other SADC countries. This may include mineral ores like copper, lead and zinc, chemicals like sulphur, as well as other potentially hazardous substances. This will aid in ensuring reliable logistic support, as well as supply in chemicals, to the mining industry and industrial sectors.

A risk assessment was undertaken to determine the potential impact of the operational, construction 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 update in compliance with Namibia’s Environmental Management Act (Act No 7 of 2007).

Project Justification – Zambia is a landlocked country with Namibia, South Africa, Zimbabwe and Botswana on its borders. Zambia therefore rely on coastal countries for the import and export of products. The Port of Walvis Bay, operated by Namport, is considered one of the most efficient and reliable ports in southern Africa. The Zambia Dry Port aids in the import and export of goods to and from Zambia and other SADC countries via the Port of Walvis Bay. Cargo is transported between Namibia and other SADC countries via road. Cargo typically includes machinery and cars, chemicals, ore, bulk produce and building material.

Benefits of the dry port include:

- ◆ Positive financial contribution to Namibia (through port services and transport);
- ◆ Employment and skills development;
- ◆ Strengthening relationship with Zambia and support for potential additional investments and development in town.

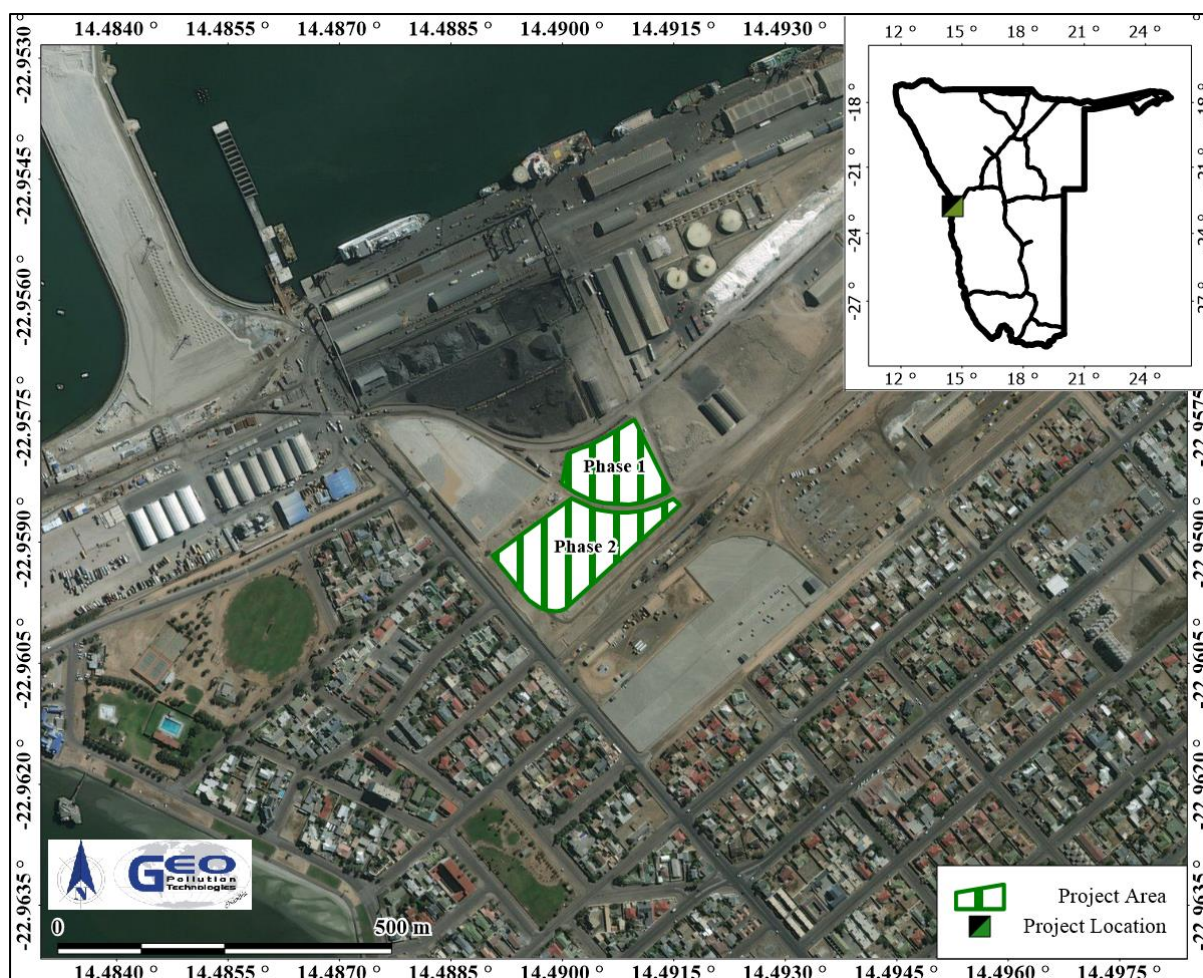


Figure 1-1. Project location

2 SCOPE

The scope of the updated environmental assessment is to:

1. Update the potential environmental impacts emanating from the operational, construction and possible decommissioning activities of the dry port and related facilities,
2. Update the 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 and Tourism to make an informed decision regarding the operations, construction 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 operations and construction activities proposed at the facility:

1. Baseline information about the site and its surroundings was obtained from existing secondary information, including the existing EIA and EMP, as well as from a reconnaissance site visit.
2. The existing environmental assessment was updated and an environmental management plan was incorporated into this report.
3. 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.

4 FACILITY OPERATIONS AND RELATED ACTIVITIES

The Zambia dry port consist of two phases (or sites), phase one is a 10,000 m² site developed in 2010 and phase two is a 20,000 m² site developed in 2018 (Figure 1-1). While phase one was fully developed, the initial purpose of phase two was to construct a cold store as part of the operations of the dry port and it is for phase two that an EIA was conducted in 2014 (Garrard, 2014). The cold store was however not established and the proponent since decided that the phase two site will be used to increase their overall cargo handling capacity.

4.1 EXISTING INFRASTRUCTURE

Phase one of the Zambia dry port is fully developed. The site is covered with interlocked paving on a concrete foundation capable of handling heavy motor vehicles with axle loads of 100 tons. Site security include concrete posts and palisade fencing with 24 hour security services. This allows for adequate security to handle high-value commodities.

Phase one has capacity for 72 electrical reefer containers for frozen cargo (e.g. fish, chicken, meat) for cross-border African markets. Dry cargo services include the storage and handling of various types of cargo in the form of bulk or containerized cargo including vehicles, granite and marble stone, metal ore concentrate, processed ores, etc. Bagging and de-bagging of dry bulk cargo also occur on site where bulk cargo is bagged into for example bulk bags or bulk bags are re-bagged into bags with smaller volumes. Phase one further hosts a consumer fuel installation that currently consists of four portable 200 l diesel drums from which diesel is supplied to vehicles. The consumer fuel installation will however be upgraded and details of the upgrade are provided in section 4.2. A wash bay, mainly used for the cleaning and disinfection of reefer containers, are present on site. Wastewater from this process is disposed of into the main sewer system of the port. Administrative infrastructure includes a health and safety facility with ablution facilities.

No further development is proposed on the phase one site in the near future. Due to its location further away from nearby residential areas, it was selected for the handling and storage of reefer containers in order to reduce noise impacts on residents of nearby 5th Road.

Phase two currently hosts no infrastructure. The site was however previously levelled and compacted, but not surfaced, and fenced with a concrete palisade fence. It also has an existing railway siding linking to the Namibian railway network.

Access to both sites are from the Port of Walvis Bay's internal road network with all vehicles, cargo and visitors therefore passing through the port's main gate security checkpoint upon entrance and exit.

4.2 PROPOSED INFRASTRUCTURE

For phase one only the consumer fuel installation will be upgraded. An 800 l steel tank will be installed inside a proper concrete bunded area with associated spill control surfaces where diesel is handled. For phase two it is proposed that the entire surface be covered with interlocked paving. The site will be serviced with general utilities such as water, sewers and electricity where required. A warehouse, potentially up to 3,000 m² in size, will be constructed and used for the handling and temporary storage of break bulk cargo such as copper, zinc, lead ore and sulphur. Access for trucks to the warehouse will be through roller doors which will be kept closed during handling of products and periods of strong wind. For the handling of potentially hazardous substances, the warehouse will host emergency showers, emergency eye wash stations and a freshwater dust suppression system. All MSDS's of chemicals handled within the warehouse will be available in the warehouse as well as at the office. PPE requirement signage will be placed at the entrances of the warehouse.

Development of the site will be phased and will be planned and constructed in a manner aimed at minimising impacts, specifically noise and lighting, on nearby residential properties. Therefore, as far as practically possible all noise generating activities at phase two will be placed so as to direct noise towards the Port of Walvis Bay, which is zoned for harbour use, rather than

to the residential areas. As buffers, infrastructure such as rub halls and warehouses will be placed between the noise generating activities and the residential properties. Flood lights used at night will be directed downwards, and away from the residential properties to minimise nuisance and limit impacts on birds flying at night. Prior to construction, all construction designs will be submitted to the Municipality of Walvis Bay for approval.



Photo 1. Phase 1 access and site



Photo 2. Phase 2 access and site

4.3 OPERATIONAL ACTIVITIES

The facility functions as a receipt, storage, handling and distribution hub for imports and exports for Zambia as well as other SADC countries via the dry port. It also provides services such as custom clearance, freight forwarding and transportation. Cargo that will be handled at the dry port will vary depending on product demands and export supplies. Ultimately, cargo handled at phase one and phase two of the facility can typically include:

- ◆ Building materials and textiles
- ◆ High value mining commodities
- ◆ Minerals
- ◆ Chemicals and farming products
- ◆ Produce (including meats)
- ◆ Processed products such as beverages and foods
- ◆ Machinery and vehicles (including parts and related products)

The Proponent ensures that all importing and exporting documentation for cargo handled by the dry port is in place, and that all cargo is sufficiently inspected and in line with Namibian legislation.

4.3.1 Chemical and Dangerous Cargo

The Proponent proposes the break bulk and containerised import and export of chemicals, ore and explosives via the Zambia Dry Port. Break bulk cargo refers to packaged cargo, which can be bags, boxes, barrels, crates, etc. Mineral ore and concentrate are for example typically transported in one ton bulk bags. All break bulk chemicals and ore presenting air pollution risks (airborne dust) will be handled within an enclosed warehouse.

Explosive cargo, if any, will be handled according to very specific regulations as determined by the Ministry of Safety and Security, Namport and the Municipality of Walvis Bay. This may include preauthorisation of trucks to be used for transport, authorisation of loaded trucks, escorting of trucks by the Namibian Police along pre-determined routes, specific convoy sizes and following distances, as well as travelling at specific times only.

As the types and volumes of chemicals to be imported and exported largely depends on future customers and demand, the exact volumes and chemicals cannot be provided. All products that are imported and exported via the dry port are and will be stored and handled according to their individual requirements (e.g. according to MSDS). The facility will further ensure

compliance with Namport, Town Council and Namibian laws and regulations regarding the storage, handling and transport of certain goods in and through Namibia.

Break bulk cargo will either be loaded into containers and then onto trucks, or directly onto trucks for transport to clients. Regular truck loads will not exceed 38 metric tons. Cargo will be sufficiently secured/covered to prevent any product loss and pollution along the transport routes.

4.3.2 Spill Control and Handling

The Proponent will ensure the necessary spill control infrastructure is in place where hazardous substances are stored and handled. This may include plastic liners, concrete slabs with spill proof liners where refuelling is conducted, and bunding where liquid hazardous substances are stored. Within port limits, Namport will respond to and manage spills in the case of an emergency. It however remains the responsibility the Proponent to ensure spills are handled as soon as possible and to ensure reputable contractors are appointed to execute the spill clean-up, and if required, report the spills to the relevant Ministries. The Proponent will ensure emergency response and spill contingency plans are in place for the various products that will be handled.



Photo 3. Reefers and catwalk with enclosed sides



Photo 4. Reefer plug in points



Photo 5. Railway siding



Photo 6. Phase 2 project area

5 ALTERNATIVES TO THE PROPOSED FACILITY

The existing dry port facility is located within the port of Walvis Bay in an area used for similar operations. As required for operations, the facility is located close to berthing facilities, and is close to the new container terminal under construction in the Port of Walvis Bay. This reduced transport and logistical costs and prevents additional environmental impacts such as traffic. To reduce noise impacts on nearby residents, reefer containers are placed and handled at the phase one site, furthest from the

residential properties. Although no proposed layout for the phase two site have been drafted and finalised, layout will be so that it further reduces noise impacts on residents. This includes using warehouses as a noise barriers by placing them between noise generating activities and residential properties, as opposed to having noise generating activities on the port boundary (south-western side).

Since the facility must adhere to SANS standards or better for the installation and operations of the consumer fuel installation, no alternatives in design parameters adhering to SANS is proposed. From an environmental perspective the environmental assessment did not find any reason why the facility may not continue with operation and development at this site on condition that it complies with standards as prescribed by Namibian legislation or better.

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 in 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	<ul style="list-style-type: none"> ◆ Promote 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	<ul style="list-style-type: none"> ◆ Defines the environment ◆ Promote sustainable management of the environment and the use of natural resources ◆ Provide 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	<ul style="list-style-type: none"> ◆ Commencement of the Environmental Management Act ◆ List activities that requires an environmental clearance certificate ◆ Provide Environmental Impact Assessment Regulations
Namibia Ports Authority Act Act No. 2 of 1994	<ul style="list-style-type: none"> ◆ Provides for the establishment of the Namibian Ports Authority to undertake the management and control of ports
Petroleum Products and Energy Act Act No. 13 of 1990, Government Notice No. 45 of 1990	<ul style="list-style-type: none"> ◆ Regulates petroleum industry ◆ Makes provision for impact assessment ◆ Petroleum Products Regulations (Government Notice No. 155 of 2000) <ul style="list-style-type: none"> ○ Prescribes South African National Standards (SANS) or equivalents for construction, operation and decommissioning of petroleum facilities (refer to Government Notice No. 21 of 2002)
The Water Act Act No. 54 of 1956	<ul style="list-style-type: none"> ◆ Remains in force until the new Water Resources Management Act comes into force ◆ Defines the interests of the state in protecting water resources ◆ Controls the disposal of effluent ◆ Numerous amendments

Law	Key Aspects
Water Resources Management Act Act No. 11 of 2013	<ul style="list-style-type: none"> ◆ Provide for management, protection, development, use and conservation of water resources ◆ Prevention of water pollution and assignment of liability ◆ Not in force yet
Local Authorities Act Act No. 23 of 1992, Government Notice No. 116 of 1992	<ul style="list-style-type: none"> ◆ Define the powers, duties and functions of local authority councils ◆ Regulates discharges into sewers
Public Health Act Act No. 36 of 1919	<ul style="list-style-type: none"> ◆ Provides for the protection of health of all people
Public and Environmental Health Act Act No. 1 of 2015, Government Notice No. 86 of 2015	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ 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
Explosives Act Act No 26 of 1956	<ul style="list-style-type: none"> ◆ Regulates the manufacture, storage, sale, transport, import, export, use and possession of explosives. ◆ Numerous Amendments
Pollution Control and Waste Management Bill (draft document)	<ul style="list-style-type: none"> ◆ Not in force yet ◆ Provides for prevention and control of pollution and waste ◆ Provides for procedures to be followed for licence applications

Law	Key Aspects
Atomic Energy and Radiation Protection Act Act No. 5 of 2005, Government Notice No. 50 of 2005	<ul style="list-style-type: none"> ◆ Provide for adequate protection of the environment and of people in current and future generations against the harmful effects of radiation by controlling and regulating the production, processing, handling, use, holding, storage, transport and disposal of radiation sources and radioactive materials. ◆ Provides for authorisation, licences and registrations with regard to import into or export from Namibia any radiation source or nuclear material or transport any radiation source or nuclear material ◆ Provides for regulations (Government Notice No. 221 of 2011) with regard to radiation protection and waste disposal.
Road Traffic and Transport Act Act No. 52 of 1999 Government Notice No. 282 of 1999	<ul style="list-style-type: none"> ◆ Provides for the control of traffic on public roads and the regulations pertaining to road transport
Road Traffic and Transport Regulations Government Notice No 53 of 2001	<ul style="list-style-type: none"> ◆ 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)	<ul style="list-style-type: none"> ◆ Provides for the promotion of foreign investment in Namibia ◆ Considers environmental impacts associated with foreign investments.

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	<ul style="list-style-type: none"> ◆ 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)	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ Manages and regulates development related to land use. ◆ Proposes and identifies areas for specific future land use.

Table 6-3. Relevant multilateral environmental agreements for Namibia and the development

Agreement	Key Aspects
Stockholm Declaration on the Human Environment, Stockholm 1972.	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ 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)	<ul style="list-style-type: none"> ◆ 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	Key Aspects
South African National Standards (SANS)	<ul style="list-style-type: none"> ◆ The Petroleum Products and Energy Act prescribes SANS standards for the construction, operations and demolition of petroleum facilities ◆ SANS 10131 is specifically aimed at storage and distribution of petroleum products from above-ground storage tanks <ul style="list-style-type: none"> ○ Provide requirements for spill control infrastructure.
Namport Specifications and Legislation	<ul style="list-style-type: none"> ◆ Enforced Standards and Codes which governs construction and operations relating to the port.
Port of Walvis Bay Environmental Management Plan	<ul style="list-style-type: none"> ◆ Enforces baseline pro-active actions that need to be taken to prevent or mitigate possible impacts which may emanate from construction or operational activities within the port.
International Dangerous Goods Code (IMDG Version 10 of 2010)	<ul style="list-style-type: none"> ◆ Prescribed by Namport for handling and storage of dangerous cargo

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:

- ◆ 9.1 “The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.”
- ◆ 9.2 “Any process or activity which requires a permit, licence or other form of authorisation, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, licence or authorisation or which requires a new permit, licence or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste.”
- ◆ 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 metres 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 Zambia dry port is located within the port of Walvis Bay on the southern boundary, near the Botswana and Zimbabwe dry ports (-22.9587°S, 14.4904°E) (Figure 1-1). The north, east and south-east of the site is neighboured by land zoned specifically for harbour and railway use and forms part of the Port of Walvis Bay. Neighbouring and nearby port operations include bulk manganese storage and handling, chemical storage and handling facilities to the north, storage and loading facility for food grade and chemical grade salt further north east and the Zimbabwe and Botswana dry ports to the north west and south east. To the south and south-west of the site, opposite 5th Road, are residential properties (Figure 7-1). There are no heritage or cultural sites located on or in close proximity to the site.

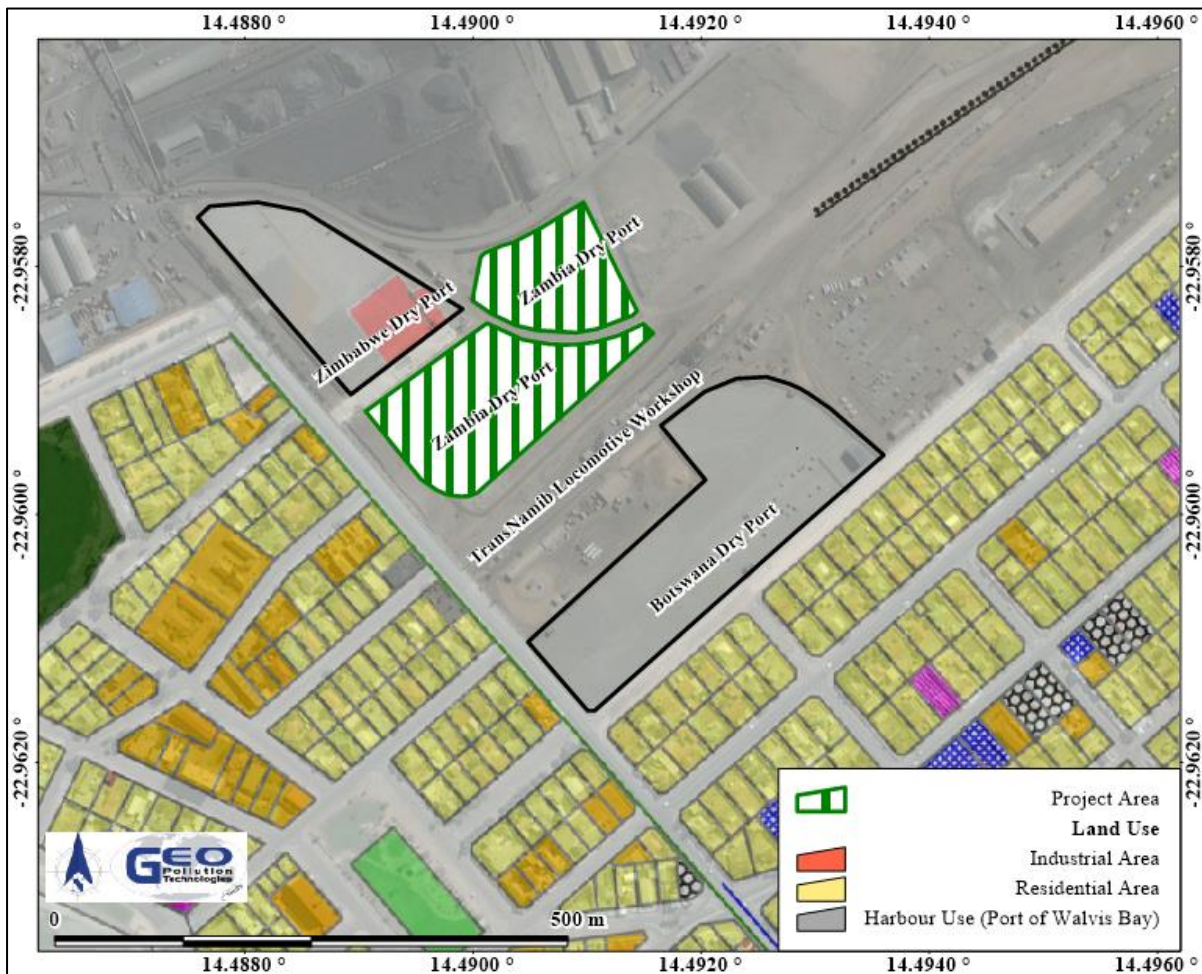


Figure 7-1. Area zoning and surrounding land use

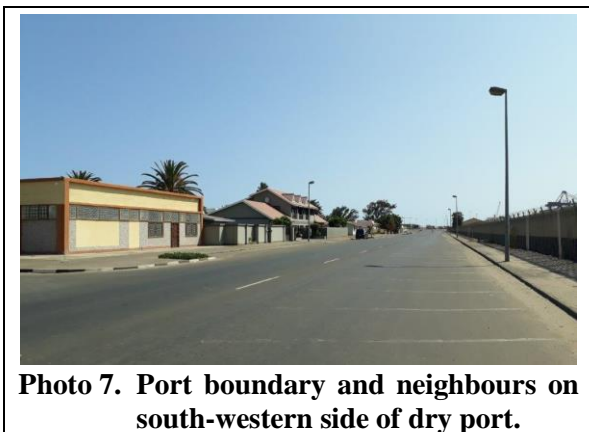


Photo 7. Port boundary and neighbours on south-western side of dry port.



Photo 8. Northern view from site (port neighbours – manganese storage)

Implications and Impacts

The site itself is situated in an area intended for industrial use within the port of Walvis Bay. Activities to the north, east and south-east of the site are of similar nature. Residential properties to the south and south-west may be affected by noise as well as lighting on site during the operational and construction phases.

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, 2002; Bryant, 2010), see Figure 7-2.

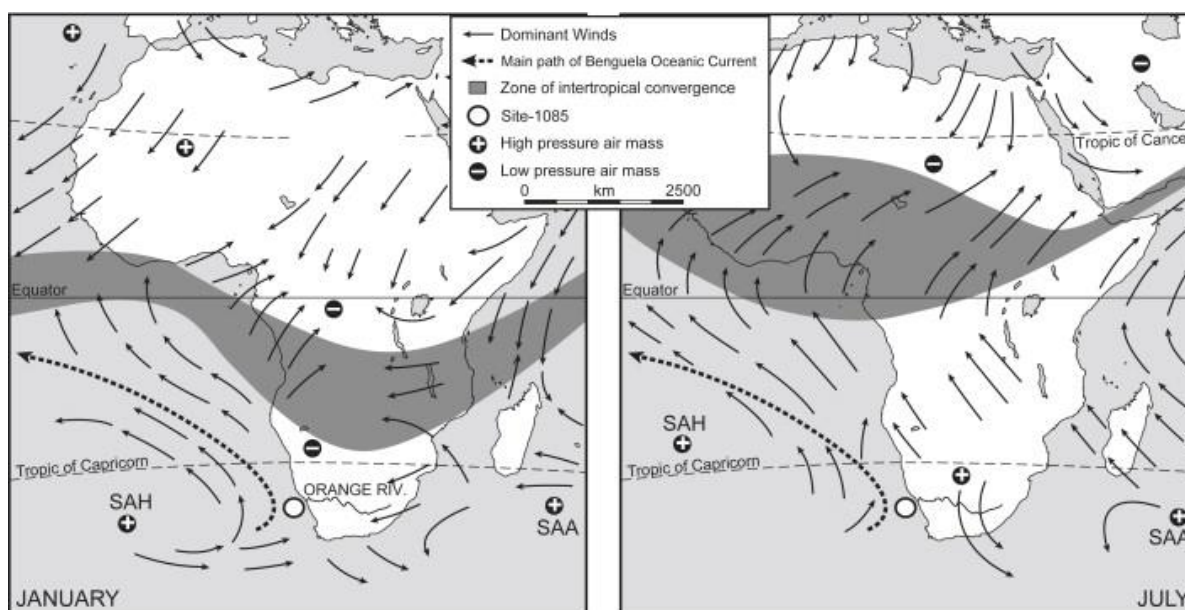


Figure 7-2. Map indicating the Intertropical Convergence Zone, Subtropical High Pressure Zone (SAH+), Benguela Current and Temperate Zone south of Tropic of Capricorn (not indicated) (from: <http://www.meteoweb.eu>)

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 7-3). 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 7-3). 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.

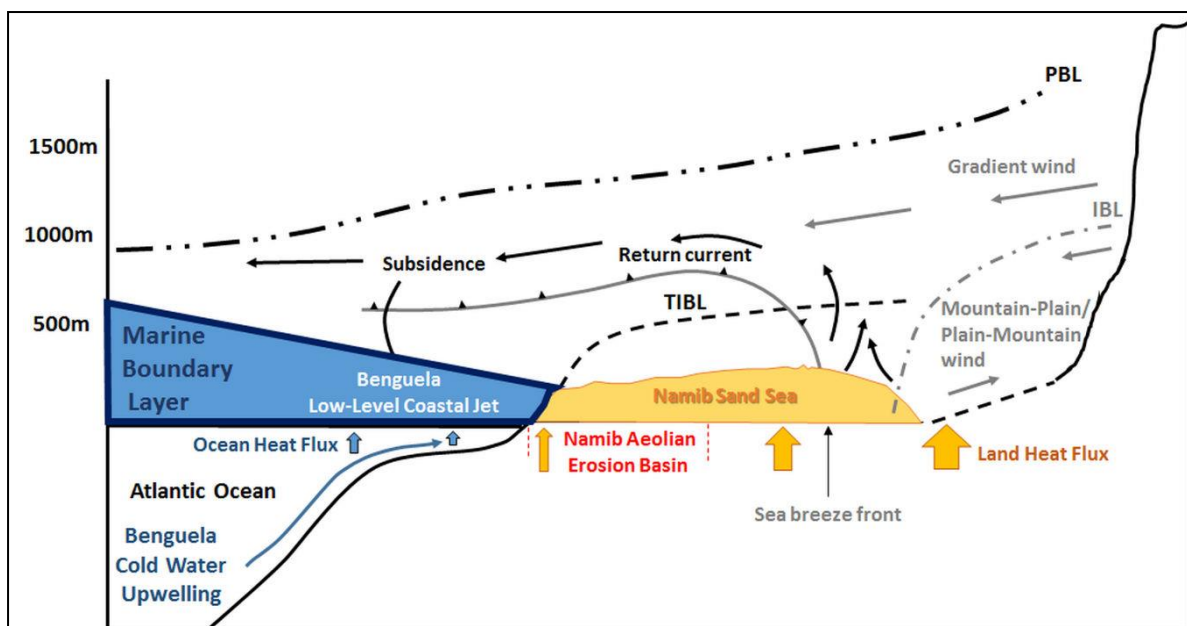


Figure 7-3. Marine atmospheric boundary layer (from: Corbett, 2018)

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 7-4), 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 descends, 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 7-4.

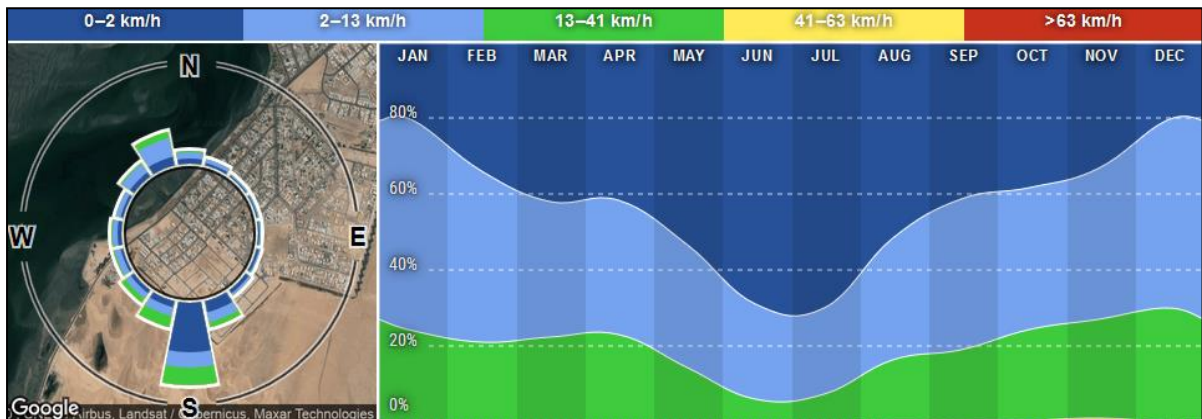


Figure 7-4. Wind direction and strength at the Walvis Bay Lagoon as measured between 2013 and 2020 (from: www.windfinder.com/windstatistics/walvis_bay_airport)

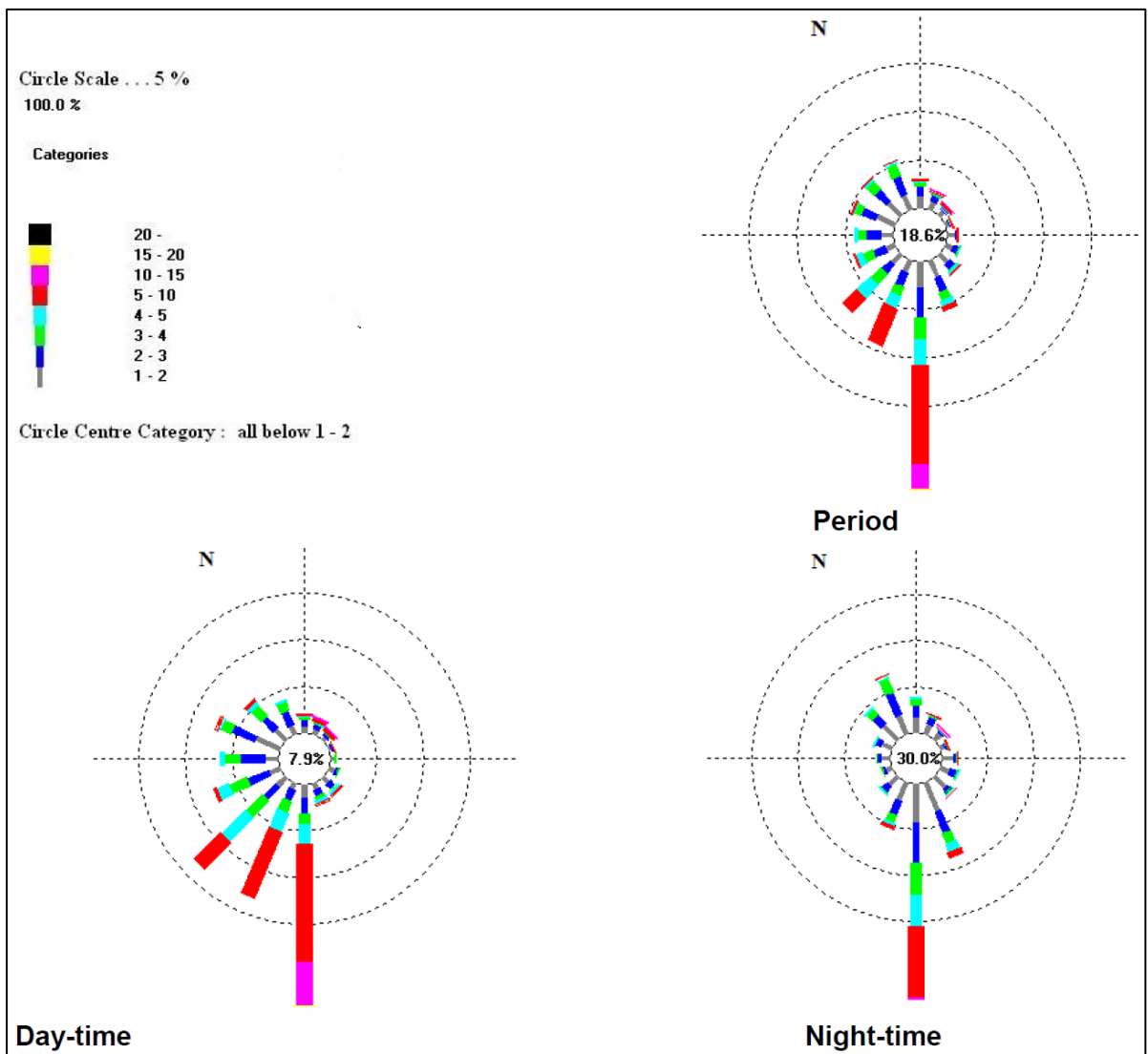


Figure 7-5. Period, daytime and night-time wind roses for Walvis Bay town for the period 2006 (Petzer, G. & von Gruenewaldt, R., 2008)

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 7-6). 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 increase rather quickly while night time temperatures can get significantly colder in the desert environment.

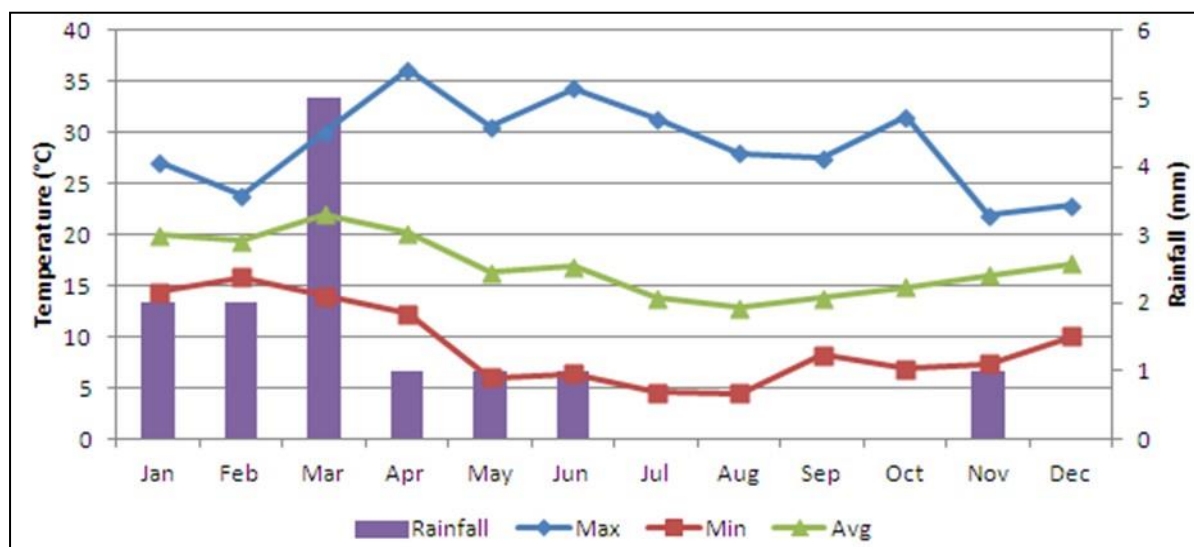


Figure 7-6. Temperature and rainfall at Walvis Bay (from: uMoya-NILU, 2020)

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 7-6), 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

Water is a scarce and valuable resource in Namibia and Walvis Bay is characterized by low and extremely variable seasonal rainfall. This makes water an extremely vulnerable resource. Groundwater at the site is however saline and no impact on potable water supply is expected from operations at the facility. South and westerly winds experience during summer as well as easterly wind experienced during winter will reduce noise impacts on nearby residential properties. Periods of strong westerly to south-westerly wind, as well as north winds may carry airborne dust to nearby receptors.

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 (H₂S) from the ocean is expected to contribute to corrosion. See Figure 7-7 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.

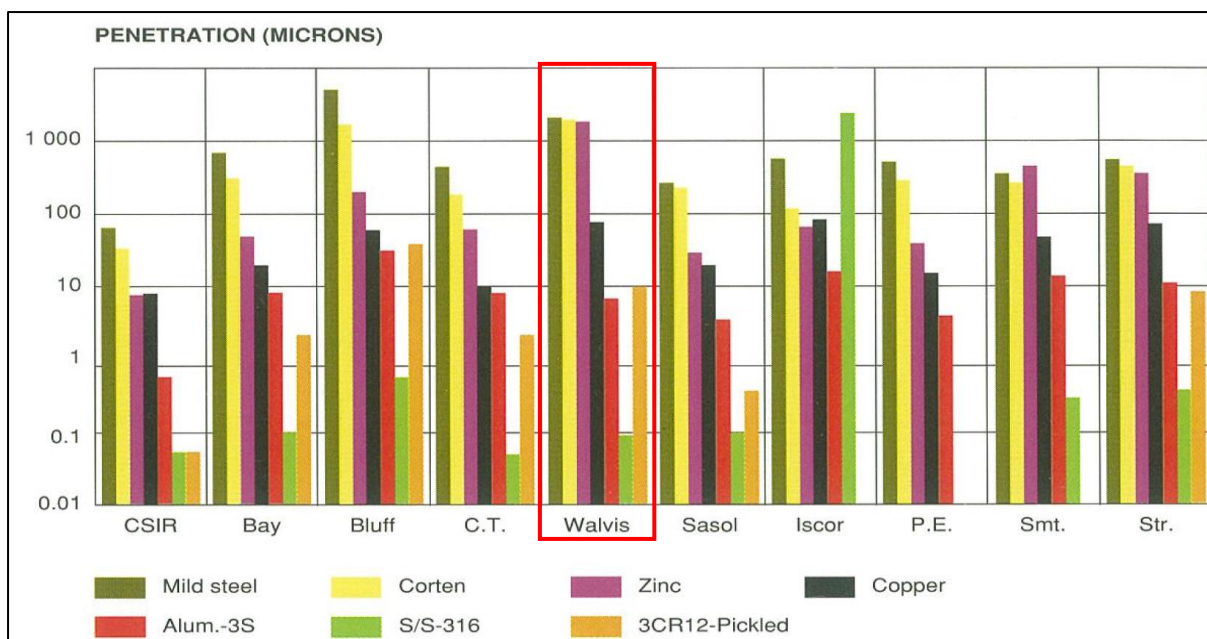


Figure 7-7. Twenty year corrosion exposure results in southern African towns (Callaghan 1991)

Implications and Impacts

Corrosion levels may be high and must be kept in mind when planning the maintenance of the facility and related infrastructure.

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 is has been levelled. In general, the area has a gentle downward slope in a south-westerly direction. See Figure 7-8 for the surface drainage of the site. Drainage is poorly developed due to the lack of rainfall <50 mm/annum received in the area. 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. The site and surrounding areas are generally flat.

Implications and Impacts

Any pollutants that are not contained and are transported via surface water flow will be transported out of the site to the surrounding environment. Therefore, the storage and use of fuel and hazardous substances must be strictly controlled according to MSDS requirements SANS standards.

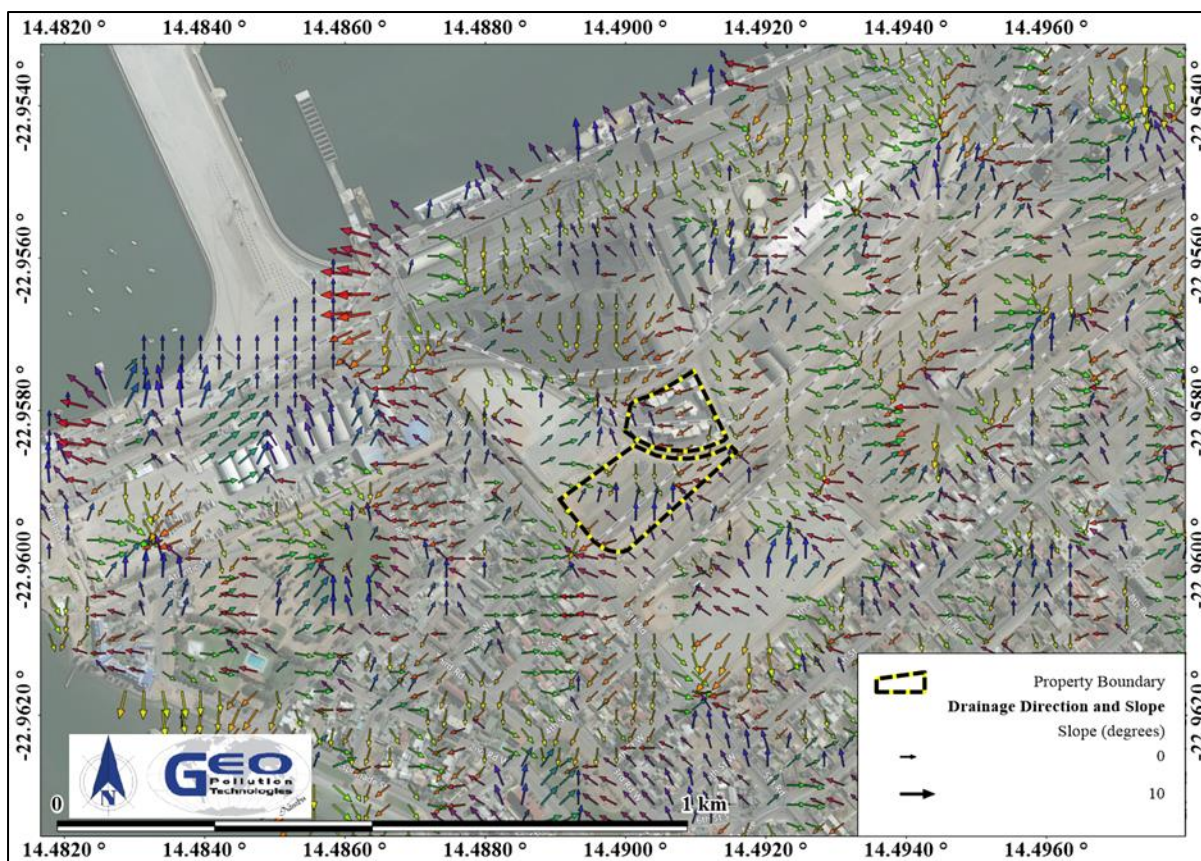


Figure 7-8. Drainage direction and slope

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.

Groundwater in the area is expected less than 2 m below surface and most probably related to seawater intrusion. 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 will lead to rapid lateral spreading of hydrocarbon products if spilled or leaked. This will 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 and the dry port is thus 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 previously been cleared of all vegetation. Of note nearby (>450 m 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 2 km east of the facility, 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 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 dry port is located within an already disturbed industrial area. Thus 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 62,096 (Namibia Statistics Agency, 2014) although the current estimate is around 90,000 to 100,000. 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. The fishing industry is the major employer of low skilled workers on a permanent and seasonal basis. The total employment of this sector is estimated at 2% of the total Namibian workforce. Economic activities relate mostly to businesses within the area and around the site.

Table 7-1. Demographic characteristics of Walvis Bay, the Erongo Region and Nationally (Namibia Statistics Agency, 2011)

	Walvis Bay	Erongo Region	Namibia
Population (Males)	30,500*	79,823	1,021,912
Population (Females)	29,000*	70,986	1,091,165
Population (Total)	62,096	150,809	2,113,077
Unemployment (15+ years)	30%	22.6%	33.8%
Literacy (15+ years)	99%	96.7%	87.7%
Education at secondary level (15+ years)	86%	71.8%	51.2%
Households considered poor	Not available	5.1%	19.5%

Implications and Impacts

The facility provides employment to people from the area. Some skills development and training also benefit employees during the operational phase.

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 was determined to be in close proximity to the site.

8 PUBLIC CONSULTATION

Public consultation was conducted during the initial environmental scoping assessment through placement of advertisements, site notices and public meetings.

Due to the ongoing Covid 19 pandemic and the increase in positive cases in Walvis Bay, measures were implemented to reduce exposure during the public consultation process. Public participation notices were advertised twice in two weeks in the national papers, Republikein on 12 and 19 August 2020 and the Namibian Sun on 13 and 19 August 2020. Contact details of the neighbours and previously registered IAP were sourced where possible. Available neighbours and previously registered IAPs were contacted and notification letters emailed to them as well as to the Municipality of Walvis Bay. A site notice was also placed on the port boundary in 5th Road. Concerns raised during the public consultation process are addressed in this updated EIA and EMP. Proof of public consultation can be seen in Appendix A.

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 HYDROCARBON POLLUTION

This section describes the most pertinent pollution impacts that are expected from the facility and its operations. Groundwater and soil pollution from hydrocarbon products are major issues associated with the storage and handling of such products. Both forms of pollution are prohibited in Namibia.

When a release of hydrocarbon products takes place to the soil, the Light Non-Aqueous Phase Liquids (LNAPL) will infiltrate into the soil and start to migrate vertically. LNAPL transport in the subsurface environment occurs in several phases, including bulk liquid, dissolved, and vapour phases. Mechanisms that influence transport include the physicochemical properties of the specific compounds present such as density, vapour pressure, viscosity, and hydrophobicity, as well as the physical and chemical properties of the subsurface environment, including geology and hydrogeology. Hydrocarbon liquids are typically complex mixtures composed of numerous compounds, each with its own individual physicochemical and, therefore, transport properties.

If small volumes of spilled LNAPL enter the unsaturated zone (i.e. vadose zone), the LNAPL will flow through the central portion of the unsaturated pores until residual saturation is reached. A three-phase system consisting of water, LNAPL, and air is formed within the vadose zone. Infiltrating water dissolves the components within the LNAPL (e.g., benzene, xylene, and toluene) and transports them to the water table. These dissolved contaminants form a contaminated plume radiating from the area of the residual product. Many components found in LNAPL are volatile and can partition into soil air and be transported by molecular diffusion to other parts of the aquifer. As these vapours diffuse into adjoining soil areas, they may partition back into the water phase and transfer contamination over wider areas. If the soil surface is relatively impermeable, vapours will not diffuse across the surface boundary and concentrations of contaminants in the soil atmosphere may build up to equilibrium conditions. However, if the surface is not covered with an impermeable material, vapours may diffuse into the atmosphere.

If large volumes of LNAPL are spilled, the LNAPL flows through the pore space to the top of the capillary fringe of the water table. Dissolved components of the LNAPL precede the less soluble components and may change the wetting properties of the water, causing a reduction in the residual water content and a decrease in the height of the capillary fringe.

Since LNAPL are lighter than water, it will float on top of the capillary fringe. As the head formed by the infiltrating LNAPL increases, the water table is depressed and the LNAPL accumulate in the depression. If the source of the spilled LNAPL is removed or contained, LNAPL within the vadose zone continue to flow under the force of gravity until reaching residual saturation. As the LNAPL continue to enter the water table depression, it spread laterally on top of the capillary fringe. The draining of the upper portions of the vadose zone reduces the total head at the interface between the LNAPL and the groundwater, causing the water table to rebound slightly. The rebounding water displaces only a portion of the LNAPL because the LNAPL remain at residual saturation. Groundwater passing through the area of residual saturation dissolves constituents of the residual LNAPL, forming a contaminant plume. Water infiltrating from the surface also can dissolve the residual LNAPL and add to the contaminant load of the aquifer.

Decrease in the water table level from seasonal variations may lead to dropping of the pool of LNAPL. If the water table rises again, part of the LNAPL may be pushed up, but a portion remains at residual saturation below the new water table. Variations in the water table height, therefore, can spread LNAPL over a greater thickness of the aquifer, causing larger volumes of aquifer materials to be contaminated.

Hydrocarbon products do biodegrade in the subsurface, although the effectiveness of this process depends on subsurface conditions. The type of hydrocarbon product plays a further role in the duration of biodegradation, with the longer chain components taking much longer to biodegrade.

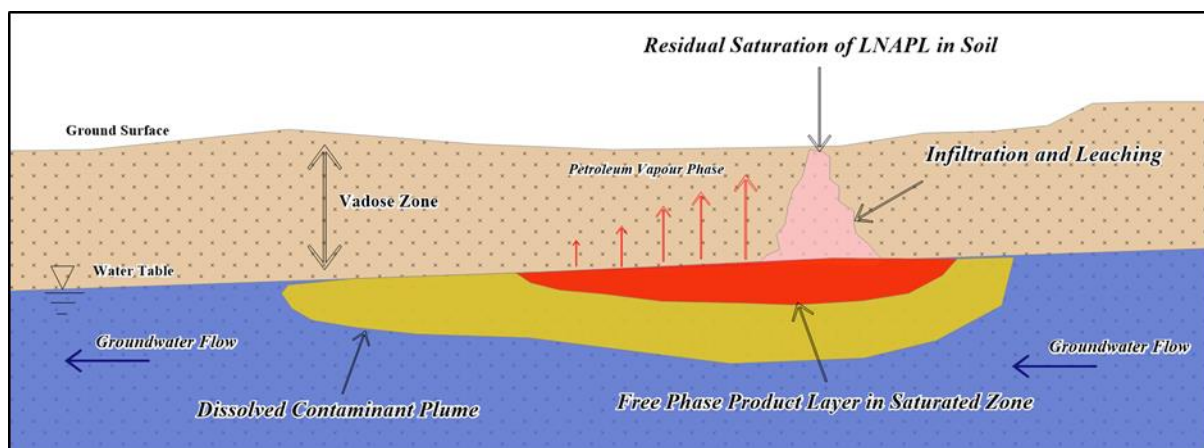


Figure 9-1. Conceptual LNAPL release to the vadose zone

9.2 NOISE IMPACTS

Noise will be generated during construction and operational phases. Noise producing events will include construction activities, vehicles and machinery on site, container handling and stacking, compressors on reefers, and audible warning signals on forklifts and trucks. Noise generated from the reefers are a low frequency droning noise and will be generated throughout the day and night. This has the potential to have negative impact on residents opposite 5th Road, Walvis Bay. This is however unlikely as the reefer containers are stored at Phase 1 more than 200 m from the nearest residential properties. Some technical specifications from suppliers of reefer containers indicated that noise generated by one electrical reefer can be in the range of 78 dB(A) at 1.5 m from the front of the reefer and 65 dB(A) 7 m from the reefer.

The facility is also situated within the port of Walvis Bay, therefore various other noise generating activities takes place in the surrounding environment. During the scoping phase of the initial EIA, a noise specialist study was carried out to determine background (baseline) noise levels and estimated increases as a result of construction and cold store operations (Garrard, 2014). The study indicated that baseline noise levels at nearby residential areas are already elevated as a result of various surrounding operations, and was expected to increase by 1 to 5 dB during the initially proposed operational phase (cold storage facility). Noise impacts from newly proposed development is expected to be within the same range. Mitigation measures discussed and provided in Section 9 of this report will however aim to successfully mitigate noise related impacts, in addition to this, the dominant wind direction is expected to carry noise away from residential properties.

9.3 DUST/AIR QUALITY

The incorrect handling and storage of cargo may generate dust, which may be aggravated during periods of strong wind, often occurring in Walvis Bay. Dust may become a nuisance and health risk to workers on site as well as nearby residential properties, the dominant wind direction is however away from residential properties. If dust is not contained, pollution of the environment and nearby sensitive receptors such as the salt storage may also take place. Mitigation measures discussed and provided in Section 9 of this report will however aim to successfully mitigate dust and air quality related impacts.

9.4 TRAFFIC IMPACTS

The site is located within port boundaries in the town's harbour area. Access to the site will be via the Port of Walvis Bay main gate. Construction activities are expected to have some impact on the movement of traffic to the site when construction material and equipment must be transported to the site. During operations goods are transported to and from the dry port with trucks. This leads to additional traffic impacts in in the Port of Walvis Bay, the town, the region and nationally.

9.5 FIRE AND EXPLOSION

Diesel, that are not as flammable as more volatile fuels, will be stored on site at the consumer fuel installation. Other potentially flammable substances may also be stored on site for import and export purposes. Fires on site may pose a risk to nearby residents as well as to infrastructure and people on site. By adhering to SANS and the relevant material safety data sheets, these impacts can be prevented.

Explosive substances, typically used in the mining industry, may also be handled by the dry port, and may lead to explosions if handled incorrectly, or exposed to incompatible materials. Explosions at the site may lead to property damages, injuries or casualties.

9.6 HEALTH AND SAFETY IMPACTS

Some health and safety risks are present on site and include moving vehicles and forklifts, falling from heights, slipping on wet surfaces, falling objects, etc. Dermal contact or inhalation of chemicals and hydrocarbons stored on site may be toxic or carcinogenic. Windblown dust, if not

prevented /contained, may have health risk due to inhalation. Adherence to national legislation and mitigation measures discussed in Section 9 of this report will however aim to successfully mitigate and prevent these impacts.

9.7 SOCIO-ECONOMIC IMPACTS

Operations of the dry port provide employment opportunities to residents of Walvis Bay. The operational phase creates permanent employment opportunities and some training and skills development takes place.

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 (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:

$$\text{Environmental Classification} = A1 \times A2 \times (B1 + B2 + B3)$$

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 are 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 operation and construction of the facility. This section of the report can act as a stand-alone document. All personnel taking part in the 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 operational phase are expected to mostly be of medium to low 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 future operations, construction 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) 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 (HSE) Coordinator to implement the EMP and oversee occupational health and safety as well as general environmental related compliance at the site.
- ◆ Appoint or designate a community liaison officer to deal with complaints.
- ◆ Have the following emergency plans, equipment and personnel on site where reasonable to deal with all potential emergencies:
 - Risk management/mitigation/EMP/ emergency response plan and HSE Manuals
 - Adequate protection and indemnity insurance cover for incidents;
 - Comply with the provisions of all relevant 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 construction activities, operations and decommissioning as outlined in the EMP.
- ◆ Submit bi-annual reports to the MEFT to allow for environmental clearance certificate renewal after three years. This is a requirement by MEFT.
Appoint a specialist environmental consultant to update the EA and EMP and apply for renewal of the environmental clearance certificate prior to expiry. During this process, residents adjacent to the facility should once again be notified on the renewal and be provided the opportunity to provide comments and concerns.

10.1.2 Skills, Technology and Development

During various phases of construction and operations, training will be provided to a portion of the workforce associated with the dry port. Skills will be transferred to an unskilled workforce for general tasks. Technologies required for the development of the facility may be new to the local industry. 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	3	1	2	3	2	28	3	Definite
Indirect Impacts	Economic development	3	1	2	3	3	32	3	Definite

Desired Outcome: To see an increase in skills in Walvis Bay, as well as development and technological advancements in associated industries.

Actions

Mitigation:

- ◆ If the skills exist locally, 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.

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.

10.1.3 Revenue Generation and Employment

The change in land use has led to changes in the way revenue is generated and paid to the national treasury. 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.

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	3	1	3	3	2	32	3	Definite
Indirect Impacts	Decrease in unemployment, increase in revenue generated	3	1	3	3	2	32	3	Definite

Desired Outcome: Contribution to national treasury and provision of employment to local Namibians.

Actions

Mitigation:

- ◆ 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.

10.1.4 Demographic Profile and Community Health

The project relies on labour during the construction and operational phases. The scale of the project in terms of workforce requirements is limited and should not have created a change in the demographic profile of the local community and future changes are also not expected. The local community may be exposed to factors such as communicable diseases like HIV/AIDS and alcoholism/drug abuse associated with the transport industry (shipping of goods 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.

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 unemployment and cross country transport	2	-1	1	1	2	-8	-1	Probable
Daily Operations	Social ills related to unemployment and cross country transport	2	-1	1	2	2	-10	-2	Probable
Indirect Impacts	The spread of diseases	3	-1	2	2	2	-18	-2	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 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 proper 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.

10.1.5 Traffic

The dry port is within an area zoned for harbour use, in the Port of Walvis Bay. All trucks and vehicles accessing the site for loading and offloading of cargo has to pass through the Namport main gate. The dry port's presence has increased traffic flow through the port of Walvis Bay to the site, and may increase congestion and the risk of accidents in the port and town. The proposed import and export of chemicals and ore will add to the amount of trucks accessing and leaving the site, as well as national road networks.

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	-1	2	2	2	-12	-2	Probable

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.
- ◆ Adhere to Namport and Town Council regulations e.g. preferred routes through town and mitigation measures provided in Namport's EMP.
- ◆ Adhere to The Road Traffic and Transport Regulations of 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.
- ◆ The placement of signs to warn and direct traffic near and at the dry port 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 received 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.
- ◆ A report should be compiled every 6 months of all incidents reported, complaints received, and action taken.

10.1.6 Health, Safety and Security

Various activities associated with the operational phase relies 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 hydrocarbons and other potential chemicals), poses the main risks to employees. If not contained, windblown dust of certain ores and chemicals may further pose health risks to nearby receptors such as residents. Security risks are related to unauthorized entry, theft and sabotage.

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	3	3	1	-14	-2	Probable
Daily Operations	Physical injuries, exposure to chemicals and criminal activities	2	-2	3	3	2	-32	-3	Improbable

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

Actions

Prevention:

- ◆ All health and safety standards specified in the Labour Act should be complied with.
- ◆ Clearly label dangerous and restricted areas as well as dangerous equipment and products.
- ◆ 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.
- ◆ All hazardous substances should be handled according to the MSDS and incompatible products must be segregated at all times.
- ◆ Security procedures and proper security measures must be in place to protect workers and cargo. Prevent unauthorised entry during all phases and maintain access logs for vehicles and personnel.
- ◆ Equipment must be locked away or placed in a way that does not encourage criminal activities (e.g. theft).
- ◆ Provide all employees with required and adequate personal protective equipment (PPE).
- ◆ 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.
- ◆ 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.
- ◆ Implementation of maintenance register for all equipment and fuel/hazardous substance storage areas.
- ◆ 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.

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:

- ◆ 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 were conducted and when safety equipment and structures were inspected and maintained.

10.1.7 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. Diesel stored in the consumer fuel installation also presents a fire risk especially when in contact with incompatible materials. The Proponent also proposes the import of explosive for use in the mining industry. 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.

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	2	2	1	-20	-3	Improbable

Desired Outcome: To prevent 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 products stored on site, including the consumer fuel installation. 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.
- ◆ Firefighting equipment must be maintained and regularly serviced.
- ◆ Regular personnel training (firefighting, fire prevention and responsible housekeeping practices).
- ◆ Ensure all chemicals are stored strictly according to MSDS and SANS instructions. This include segregation of incompatible products.
- ◆ 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.
- ◆ For fuel storage, special note must be taken of the regulations stipulated in sections 47 and 48 of the Petroleum Products and Energy Act, 1990 (Act No. 13 of 1990) and SANS standards for operation and maintenance of the consumer fuel installation should be followed.
- ◆ For transport of explosive chemicals predetermined routes and times of transport should be followed. Transport routes and methods should be determined in conjunction with the Ministry of Safety and Security, Namport as well as the relevant local authorities.

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.

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 report should be compiled every 6 months of all incidents reported. The report should contain dates when fire drills were conducted and when fire equipment was tested and training given.

10.1.8 Noise

Noise pollution will exist due to heavy and light motor vehicles accessing the site to load and offload cargo, from the stacking and moving of containers and other large equipment, as well as from the reefers. The reefers are stacked three high, and operate 24 hours a day, therefore noise from the electric motors of the containers will be generated throughout the day and night. As it will be electric reefer containers, stored at the site furthest from residential properties, noise impacts are however expected to be limited. Construction activities (maintenance and upgrades) may temporarily generate excessive noise.

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	2	2	2	-12	-2	Probable

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

Actions

Prevention:

- ◆ The 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. This limits noise levels to an average of 70 dB over a 24 hour period with maximum noise levels not exceeding 110 dB during the period.
- ◆ The facility should meet WHO standards 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 the 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:

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

10.1.9 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 handled outside warehouses 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 excavations. The entire site is however already compacted, reducing the impact of dust during the construction phase.

Project Activity/Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Excessive dust, reduction in air quality.	2	-1	2	2	1	-10	-2	Probable
Daily Operations	Windblown dust, reduction in air quality, nuisance and health impacts	2	-2	2	2	2	-24	-3	Probable

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

Actions

Prevention:

- ◆ The Agency for Toxic Substances and Disease Registry (United States of America) sets the Minimum Risk Level of contaminants in air that is expected not pose any health risk over a specified duration of exposure. Air quality at the site, at nearby receptors or receptors on any part of the route of transport 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 include selective catalytic reduction, diesel particulate filters and diesel oxidation catalysts.

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

- ◆ Any mineral ore that may contain asbestos and that will be handled as loose product, must be sampled irregularly, once every 6 months, by an independent specialist for the presence of such 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.
- ◆ A report should be compiled every 6 months of all incidents reported and monitoring performed. The report should contain dates when safety equipment and structures were inspected and maintained.
- ◆ Should dust 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 dust barrier (e.g. stacked containers or boundary wall). Based on the source of the dust, this may be done in conjunction with Namport, as this will not only act as barrier for the dry port, but will mitigate dust impacts from the port as well.

10.1.10 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 hydrocarbon products and other 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 hazardous wastes. If correct measures are not followed, and if contaminated equipment is washed, wash water from the proposed wash bay, a form of waste, may become contaminated and end up in the municipal sewers.

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	2	2	2	-12	-2	Definite

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 waste storage facilities are available.
- ◆ Ensure waste cannot be blown away by wind.
- ◆ Prevent scavenging (human and non-human) of waste.
- ◆ The wash bay design should be according to municipal regulations and effluent must adhere to prescribed conditions where applicable.
- ◆ 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.
- ◆ 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.

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.

10.1.11 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 expected 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.

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	3	2	2	-7	-1	Improbable
Daily Operations	Impact on fauna and flora. Loss of biodiversity	2	-1	3	2	2	-14	-2	Probable

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.
- ◆ Avoid 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 directed downwards to the working surfaces. The use of auto dimming lights in areas without prolonged movement will reduce the potential impact on birds.

Responsible Body:

- ◆ Proponent

Data Sources and Monitoring:

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

10.1.12 Groundwater, Surface Water and Soil Contamination

Operations entail the storage and handling of various potentially hazardous substances (such as fuels and lubricants, and other chemicals) 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.

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 and hydrocarbon leakages	2	-1	2	2	1	-10	-2	Probable

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

Actions

Prevention:

- ◆ Consumer fuel installation should be installed with proper spill control structures and procedures according to SANS standards or better.
- ◆ All fuelling and 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:

- ◆ Any diesel spillage of more than 200 l must be reported to the Ministry of Mines and Energy.
- ◆ 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:

- ◆ A report should be compiled bi-annually 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 (e.g. soil/groundwater hydrocarbon concentrations) and a copy of documentation in which spill was reported to Ministry of Mines and Energy in the case of a diesel spill.

10.1.13 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 thus meets the requirements of developments earmarked for the area. The facility is however near 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.

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	2	2	2	-6	-1	Probable

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

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

- ◆ A report should be compiled every 6 months of all complaints received and actions taken.

10.1.14 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.

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	2	2	2	-12	-2	Probable

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:

- ◆ Annual summary report based on all other impacts must be created to give 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. 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 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 operations of the Zambia Dry Port has a positive impact on the economy of Walvis Bay. It provides employment as well as generates revenue in Walvis Bay and is an important hub to ensure the safe transport of goods through Namibia to other SADC countries. In addition to this, the facility contributes locally to the transfer of skills and training which in turn develops the local workforce (Table 11-1).

Negative impacts can successfully be mitigated. SANS standards relating to the petroleum industry and prescribed by Namibian law must be followed for the installation and operations of the consumer fuel installation. All hazardous substances should be handled and stored according to MSDS requirements which may include storage in bunded areas with sufficient spill containment infrastructure and segregation of incompatible products. Noise pollution should at all times meet the prescribed 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 operations of the facility. Parties responsible for transgressing of the environmental management plan 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 environmental management plan. All operational personnel must be taught the contents of these documents.

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 proposed 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.

Table 11-1. Impact summary class values prior to mitigation

Impact Category	Impact Type	Construction		Operations	
<i>Positive Rating Scale: Maximum Value</i>		5		5	
<i>Negative Rating Scale: Maximum Value</i>			-5		-5
EO	Skills, Technology and Development	2		3	
EO	Revenue Generation and Employment	2		3	
SC	Demographic Profile and Community Health		-1		-2
SC	Traffic		-1		-2
SC	Health, Safety and Security		-2		-3
PC	Fire and Explosion		-3		-3
PC	Noise		-2		-2
PC/BE	Dust and Air Quality		-2		-3
PC	Waste Production		-2		-2
BE	Ecosystem and Biodiversity Impact		-1		-2
PC/BE	Groundwater, Surface Water and Soil Contamination		-2		-2
SC	Visual Impact		-1		-1
PC	Cumulative Impact				-2

BE = Biological/Ecological EO = Economical/Operational PC = Physical/Chemical SC = Sociological/Cultural

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Appendix A: Proof of Public Consultation

Notified IAP's

Name	Position	Organisation
Tim Eiman	Co-ordinator (EMS & QMS)	Namport
Elzevir Gelderbloem	Port Engineer	Namport
Gottfried Araeb	Manager: Projects	Namport
Lovisa Haulaula	Environmental Officer	Municipality of Walvis Bay
Deville Dreyer	Health Department	Municipality of Walvis Bay
D. Gurirab	Health Department	Municipality of Walvis Bay
Berdine Botha	Health Department	Municipality of Walvis Bay
Riaan Archer	Hazardous Waste Inspector	Municipality of Walvis Bay
David Uushona	Manager: SWEM	Municipality of Walvis Bay
Peter Etsebeth		Municipality of Walvis Bay
Dennis Basson	Fire Brigade	Municipality of Walvis bay
Derick Mokgatle		Botswana Dry Port
Phillip Vorster	5th Road 11	Resident
Cyril Henery	5th Road 13	Resident
SWF van Zyl	5th Road 17	Resident
Mr & Ms Schickerling	5th road 9	Resident
Ferreira Johnny		Grindrod (Pty) Ltd
Svenja Garrard		Quivertree Consulting
Mr Rodney Noabeb		TransNamib
Mr Hans Karon		TransNamib
Ms Helena Kasheeta		Erongo Red
Mr Phillipus Nandiinotya		Erongo Red
Mr Stephan Anderson		Walvis Bay Salt Holdings (Pty) Ltd
Gregory Swartz		Walvis Bay Salt Holdings (Pty) Ltd
Mr Mike Spencer		Ocean Liner Services
Mr Paul Wolff	Resident	Manica
Mr Gert Maritz		Lithon Project Consultants
Ms Anja Kreiner		MFMR
Mr André Burger		Municipality of Walvis Bay
Vazembua Tjizoo	SHERQ Manager	Walvis Bay Salt Refiners

Registered IAPs

Name	Position	Organisation
Gottfried Araeb	Manager: Projects	Namport
Deville Dreyer	Health Department	Municipality of Walvis Bay
D. Gurirab	Health Department	Municipality of Walvis Bay
Berdine Botha	Health Department	Municipality of Walvis Bay
David Uushona	Manager: SWEM	Municipality of Walvis Bay
Mr & Ms Schickerling	5th road 9	Resident
Svenja Garrard		Quivertree Consulting
Mr Paul Wolff		Manica
Mr André Burger		Municipality of Walvis Bay
Vazembua Tjizoo	SHERQ Manager	Walvis Bay Salt Refiners
C. Liebenberg	Concerned Party	

Comments and Reponses – Updated Scoping Report Public Review

Comments received from C. Liebenber on 11 September 2020

Dear Sir,

I trust that you will appreciate and understand that I am responding to your request as a registered Stakeholder in terms of the National Environmental Management Act, No 7 of 2007 (Section 21 to 24 of the Government Notice 4878 Regulation No 30 of 2012). I further trust that you will appreciate that my response to your invitation to submit comments, issues or concerns related to the facility is that of a layman and that my comments, issues or concerns are borne out of the fact that my properties, which are situated at No 11 Paul Vincent Street and No 30 Sam Nujoma Avenue, Lagoon, Walvis Bay, are in close proximity to the existing and proposed Zambia Dry Port Facility and per definition the people living in the houses as well. The distances are approximately 400 – 450 meters and 600 - 750 meters respectively as the crow flies in relation to proposed Phase 2 of Zambia Dry Port. Therefore, in this regard, I wish to receive clarification and appropriate assurances regarding the facility from the proponent as detailed below:

As a point of departure and as a proud Namibian, who only hope that our country develop and prosper, I do not for one moment wish to down play the benefits of the Dry Port to be as per the scope report that a positive financial contribution to Namibia (through port services and transport), employment and skills development and strengthening the relationship with Zambia and support for additional investments and development can be achieved. I am also not in objection with the current approved Cold Storage facility on Phase 2, which are now deemed to be insufficient and no longer practical leading to the proposal to construct a Warehouse with the intended purpose as per the scope, to which I object. The details hereof and the manner of actually achieving this as well as the merits of this can be argued, but this should not carry more weight in relation to an individual Stakeholder's rights as it is enshrined in the Namibian Constitution and relevant legislation to which you refer in your scope.

1. My first request is therefore to obtain your feedback if you consider my properties to be within the sphere of any potential adverse consequences associated with the development and operations of the facility (phase 2 as proposed) specifically related to the Environmental, Safety, Health, and Socio-economic impact where it relates to the operational activities of the Dry Port and inter alia the handling of chemical and dangerous cargo, spill control and handling, pollution, noise impacts, dust/air quality, traffic impacts, fire and explosions, health and safety impacts as well as socio-economic impacts.
2. Regarding the scope assessment detailing the possible mitigating proposals very little is mentioned regarding the impact on the Stakeholder. I deem this to be a short coming in the report which should be more thoroughly explored prior to any acceptance of this can be considered. It is simply too broad for me as an individual and layman to comprehend the full impact any or all of these factors which may or may not have an impact on me personally, my property, the community of the Lagoon area and surrounds.
3. Regarding noise control, lighting and operations on a 24 hour cycle it will possibly not impact severely on my quality of life, but I would like to see stricter measures and guarantees founded in science that the mitigating factors can and will work to avoid a possibly failure and negative consequences as proposed.
4. My main concern however is the vague reference to chemical and dangerous cargo mitigating factors and the specific items intended to be stored and handled without limiting any of the possible multitude of other dangerous cargo or chemicals which may or may not be stored and handled. I am of the opinion that the assurances and mitigating proposals cannot be guaranteed regarding all the aspects covered in the scope report prior to and actual operations of the Dry Port insofar as by its nature the transporting and storage of dangerous goods can be called the second most dangerous industry after the nuclear power industry especially as over 100 000 000 chemical substances are defined as dangerous which, if wrongly handled, can cause death of people, human health concerns, environmental disaster or destruction of property. Every year 10 000 – 20 000 thousand new chemicals are developed and around 2 000 of them entering commercial usage or businesses which

could potentially end up in the Dry Port Phase 2. It is further impossible to predict the impact of the accidents with dangerous substances as all chemicals behaving depend on their characteristics, quantity and weather conditions, especially where large quantities, but also different substances, are stored which if mixed may induce accidents. Historical data regarding accidents shows that this is not something that may happen, but will happen. I hate to refer to the most recent Beirut incident, but many more have occurred. Begging trust in the systems you intend to employ does not mitigate the possibility of a catastrophe. I deem the risk simply as unacceptable. The main concern here is not what you publicly stated the proponent intend to transport and store, but the chemicals not defined and opening up the possibility to be abused regardless of Namibian legislation, rules and regulations in place as you mention in the scope. Unfortunately dangerous chemicals and substances endanger lives, people, health, property and the environment due to their toxic content, reactivity, condition of discharge concentration and amount. Some hazards come from the substance itself, but some are the result of contact between two or more chemicals. Your term being used in the scope is “dangerous goods” and mentioning a few items such as explosives, mining chemicals, etc. I vehemently object to explosives in any quantity to be stored or handled on the site. No further mentioning is made elaborating on the possibility of any further expansion of chemicals or dangerous goods in terms of gases, other flammable liquids (other than the diesel installation which are being downplayed in the scope), flammable solids, oxidizing substances, poisonous substances, radioactive substances, corrosives, or any other which does not fall in these categories. This is simply too broad and cannot be left open for interpretation by the proponent, the Government agencies, Namport to decide upon or anybody not residing in the Lagoon Area. I propose that a community of Stakeholders from the Lagoon Area be formed and be allowed to inspect, veto and otherwise have a controlling say in what substances and quantities which may or may not be stored at any given time at the Dry Port. The question thus begs how this will be controlled and what say will any Stakeholder have regarding the above concern. It is a known fact that flammability is the main hazard faced by those handling dangerous cargo followed by corrosivity and toxicity. I need to make a specific point here that the absence of smell cannot be an indicator of the absence of vapours and vapours are also pollutants which cause environmental contamination and danger to lives and vegetation where the substances can cause cancer in human beings. In the event of an accident of scale the negative impact will also have immediate direct negative consequences on the surrounding area, on human live, property and the environment for a long period of time from which it will not easily recover if ever. I amalso extremely concerned that insurance cover may be impacted in terms cost and actual cover. Despite the enourmous development of safety measures and the increase of knowledge in recent times, accidents still continue to happen. It is also a know fact that scrupulous operators and unintentional incorrect stowage and segregation of materials and substances is not adhered to despite the best care in the world. Most accidents emanating from this is due to a lack of knowledge or negligence. Errors in documentation and misfiling do happen where there is unassigned or missing documents, incompetent or incorrect information in documents, wrong size or wrong information given in labelling. Human nature also dictates that employees are not interested in reporting their errors as they are scared to lose their jobs. Similarly and especially where cargo of any nature get passed on from one company to the next and where the weakest link is exposing the whole and any safety system. Another concern is that, as outlined in the scope, that Walvis Bay has a very high corrosive environment where corrosion of pipelines and steel structures as well as deterioration of cement/concrete structures can also cause accidents especially if the equipment and quality is not necessarily the best on the market and maintained to acceptable levels.

5. Kindly provide me with the existing environmental assessment at your earliest convenience for perusal to enable me to understand the scope of the updated environmental assessment. If reference to the existing environmental assessment is made in the latest scope report, kindly provide me with the relevant sections in the updated environmental assessment specifically referencing the initial report and contrasting the extension or amendment thereof in order for me to consider and understand.

Response to C. Liebenberg comments

1. To categorically state that your properties are within or not within any zone of potential impact will be presumptuous as it will entirely depend on the type and magnitude of impact as well as the environmental conditions at the time of the impact. For example, a loud noise at the dry port during strong south-westerly winds may hardly be audible at your residence while a noise of much lower magnitude may be audible at your residence during calm conditions with a slight easterly wind. That being said, the distance from the dry port to your residence is expected to mitigate most impacts, should any significant ones occur, to acceptable levels.
2. Each impact was assessed keeping in mind potentially affected stakeholders. Prevention and mitigation measures were also provided to lessen impacts on the local community.
3. Walvis Bay, as a harbour town, developed around the Port which is likely the key driving force behind the development of the town. Residential areas were developed subsequent to Port development, cognisant of the fact that ports are industrial in nature and thus characteristic of industrial developments which are often noisy and with emission producing activities. With the mitigation measures presented, and in compliance with Namport's requests, the Proponent (and other Port tenants) aims to reduce noise, lighting and other impacts to within acceptable levels. Directing lights downwards or switching redundant lighting off at night, and the placement of reefers with compressors facing towards the port and not towards residential areas, will reduce impacts, although it will of course not be completely eliminated. The cumulative nature of such impacts within an industrial port area will of course also be a factor, and it will not only be the Zambia Dry Port that will be the impact producing tenant. After all, the Zambia, Botswana and Zimbabwe dry ports are clustered together, all with similar activities. Should suggested mitigation measures fail to mitigate impacts completely, additional measures can be investigated by Namport and the tenants as a collective, to mitigate the cumulative impact from the Port. This is a matter to be taken up with Namport should mitigation measures utterly fail.
4. The demand for products by various industries in SADC determines what needs to be imported via the various ports along the coastline. Similarly, the international demand for commodities and raw materials determines what will need to be exported via these ports. Depending on supply and demand, products moving through the Zambia Dry Port (and others) will continuously change. Namport and the Namibian Government (as elected by the Namibian voters to represent them) still control and permit what may or may not be moved through the port and to expect the local residents from the surrounding community to take over the role of deciding what may or may not be moved through the port, is not a feasible suggestion in our opinion. New products are considered on a regular, if not daily, basis. Again it is not only Zambia Dry Port that handles dangerous / hazardous cargo, but also various operators making use of the port. I am sure all parties will be in agreement that a residents' stakeholder group will not appreciate being summoned on a daily basis to make decisions pertaining to allowed goods? Such stakeholders may also be driven more by sentiment than by reason which may result in the refusal of most products. This may result in port tenants rather seeking alternative ports in Angola or South Africa for example where it may be easier to do business.
Ultimately, material safety data sheets, Port Operating Procedures, etc. are there to ensure correct storage and handling of dangerous goods and it remains in the Proponents best interest to also protect their infrastructure and employee base. For explosive for example, the Namport Operating Procedures ties in with Municipal and Nampol requirements with very strict protocols to prevent impacts. Under these protocols, explosives are not retained in the Port for extended periods of time, but are moved swiftly from the Port under Nampol supervision.
Surely when one purchase a property one would conduct a risk assessment based on the surroundings. One can hardly purchase a property adjacent to a port and then be shocked if port activities actually takes place on such property. The activities covered in the EIA is typical of normal port activities and should therefore be expected.
5. Find the document for your perusal here: www.thenamib.com/projects/EIA and EMP Zambia Cold Store.pdf

Comments received from V. Tjizoo on 11 September 2020

Walvis Bay Salt Refiners (PTY) LTD (WBSR) is a Namibian company storing and loading high volumes of salt of food grade as well as chemical grade at the port of Walvis Bay, Namibia for export to various international markets. The WBSR storage and loading facility is in close proximity to the envisaged phase 2 of the Zambian Dry port facility, hence the company is listed as an interested and affected party.

Having reviewed the scoping report, WBSR provides the below comments for consideration and feedback.

1. Page 1 of 54: In the absence of a full list of chemicals, packaging and quantities because of the uncertainty as stated on page 4 of 54, the proponent is requested to provide a list indicating the maximum amount of the respective chemicals that can be stored in the 3000 m2 warehouse in order

- to provide a better indication of the amount of chemicals that can be stored in the warehouse at one point in time for risk assessment purposes.
2. Page 2 of 54: Point 2 of the Methodology section is written as if the previous (2014) EIA/Scoping report did not include an EMP. The 2014 EMP required annual source environmental noise monitoring plan. What results did these monitoring yield and what learnings are taken from these results.
 3. Page 11 of 54: No mention is made of Salt processing happening in the near vicinity. This salt storage and loading facility stores and loads food grade and chemical grade salt and the hazardous chemicals planned to be stored in the warehouse are incompatible with the salt.
 4. Page 20 of 54: Section 9.3 does not mention that dust may also become a problem to nearby operations, especially the salt storage and loading facility which handles food grade as well as chemical grade product.
 5. What is the nearest distance from the envisaged warehouse to the salt storage and loading facility.
 6. What is the wind direction and how much wind-blown pollution might be generated and blown in the direction of the salt storage and loading facility during offloading and processing of your products/hazardous chemicals.
 7. Page 24 of 54: the methodology includes a “Class Value” as well as a “probability” without explaining the meaning and the rationale for including these.
 8. Page 24 of 54: for the assessment of impacts: it is not clear what the criteria is for selecting:
 - Reversible (with a score of 2) over irreversible (with a score of 3)
 - Temporary (with a score of 2) over permanent (with a score of 3)
 - Non-Cumulative (with a score of 1) over Cumulative (with a score of 3)
 Clarification for the above issues is required in order to better interpret the overall environmental classification scores assigned to the individual risks and agree or not agree with the assigned scores.
 9. Page 24 of 54: The traffic impact is not addressed adequately in terms of cumulative impacts of additional Zambian Dry Port facility trucks versus the already operating salt offloading trucks. Will the same road section be used?
 10. The 2014 EMP also recommended an Operations traffic plan – the results of this traffic plan are not included in the 2020 EIA/EMP. What results did this yield and what learnings are taken from these results.

Response to V. Tjizoo comments

1. The demand for products by various industries in SADC determines what needs to be imported via the various ports along the coastline. Similarly, the international demand for commodities and raw materials determines what will need to be exported via these ports. Depending on supply and demand, products moving through the Zambia Dry Port (and others) will continuously change, and new products are considered on a daily basis. Ultimately, material safety data sheets, Port Operating Procedures, etc. are there to ensure correct storage and handling of dangerous goods and it remains in the Proponents best interest to also protect their as well as neighbouring properties’ infrastructure and employee base.
2. As the proposed development on site never took place, the monitoring proposed was not warranted hence was not done.
3. Comment noted, and will be included In the report.
4. Comment noted, and will be included in the report.
5. As the layout of the facility have not been finalised, no exact distance can be given, however, an estimate will be between 470 m – 330 m.
6. Wind speed and direction is discussed in section 7 of the report, with the dominant wind direction being a south to south westerly wind. As all hazardous cargo will be processed within the warehouse, and the proponent is required to effectively cover materials to prevent windblown pollution, no impact is expected on the salt processing.
7. Please see description under Section 10 and tables 10-1 and 10-2 (Pages 21 and 22 of 58) for a description of the rating process.
8. Please see description under Section 10 (Pages 21 and 22 of 58) for a description of the rating process and criteria’s.
9. Comment noted, internal road structures will be used based on consultation with Namport to ensure traffic impacts are managed. This includes the road passing the WBSW storage facility.
10. As the proposed development on site never took place, the monitoring proposed was not warranted hence was not done

Notification Letter



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10 August 2020

To: Interested and Affected Party
Re: Environmental Assessment Update: Operations of the Zambia Dry Port Facility in the Port of Walvis Bay

Dear Sir/Madam

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 that an application will be made to the Environmental Commissioner for renewal of the Environmental Clearance Certificate for the following project:

Project: Operations of the Zambia Dry Port Facility in the Port of Walvis Bay.

Proponent: Africa Union Financial Services (Pty) Ltd

Environmental Assessment Practitioner: Geo Pollution Technologies (Pty) Ltd

Africa Union Financial Services (trading as Africa Union Cargo Namibia) acts as a logistic hub, not only for cargo to and from Zambia, but for other SADC countries as well. In Walvis Bay, the Zambia Dry Port will act as the hub for its Namibian operations (Figure 1). Proposed operations of the dry port will include the receipt, handling and export of cargo, storage and handling of containers and reefer containers, operations of a consumer fuel installation, construction of warehouses for the, bagging, storage and handling of various types of commodities, including hazardous cargo, and general operational activities and maintenance procedures associated with a dry port.

Geo Pollution Technologies (Pty) Ltd was appointed by the proponent to conduct the update of the existing environmental assessment and environmental management plan which included a cold storage facility at the site. The update is required to include the handling of various types of cargo at both phase 1 and phase 2 of the Zambia Dry Port. As part of the assessment we consult with interested and affected parties (IAPs). All IAPs are invited to register with the environmental consultant to receive further documentation and communication regarding the project. By registering, IAPs will be provided with an opportunity to provide input that will be considered in the drafting of the updated environmental assessment report and its associated management plan. Background information is available at:

www.thenamib.com/projects/projects.html

Please register as an IAP and provide comments by **27 August 2020**.

To register, please contact:

Email: zambiadryport@thenamib.com

Fax: 088-62-6368

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

Thank you in advance.

Sincerely,

Geo Pollution Technologies
Wikus Coetzer
 Environmental Assessment Practitioner

Page 1 of 2

Directors:

P. Botha (B.Sc. Hons. Hydrogeology) (Managing)

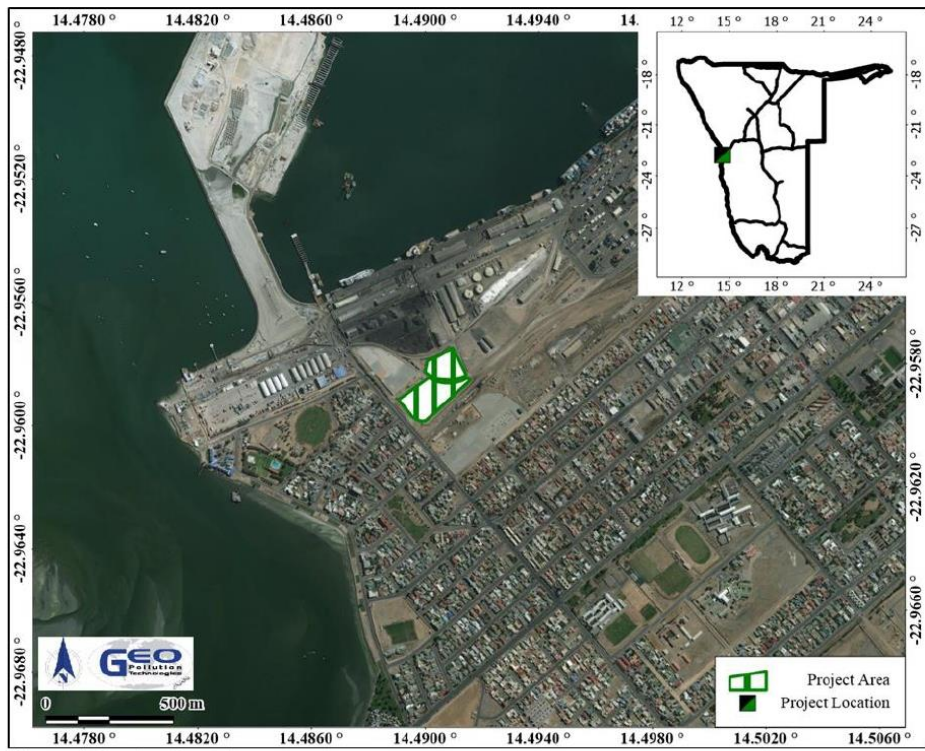


Figure 1. Project Location

Site Notice – Port boundary fence along 5th Road



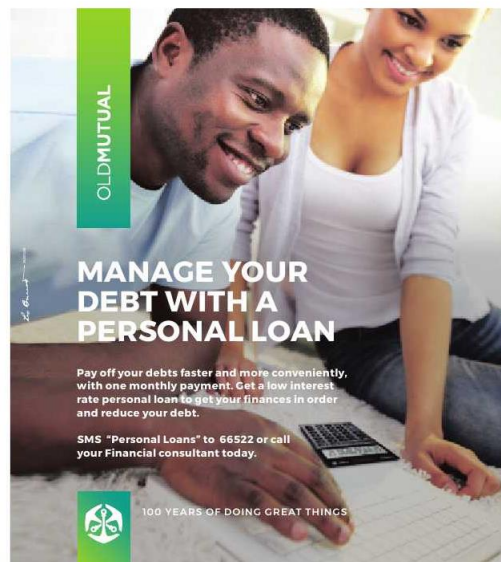
Press Notices 12 and 13 August 2020

2	NUUS	Republiekin	Woensdag 12 Augustus 2020
<p style="text-align: center;">PUBLIC PARTICIPATION NOTICE ENVIRONMENTAL ASSESSMENT UPDATE: OPERATIONS OF THE ZAMBIA DRY PORT FACILITY IN THE PORT OF WALVIS BAY</p> <p>Geo Pollution Technologies (Pty) Ltd was appointed by Africa Union Financial Services (Pty) Ltd to update their existing environmental assessment and environmental management plan. Background information for the project, containing a location map, is available at: www.thenamib.com/projects/projects.html</p> <p>The update of the environmental assessment will be according to the Environmental Management Act of 2007 and its regulations as published in 2012.</p> <p>Africa Union Financial Services acts as a logistic hub, not only for cargo to and from Zambia, but for other SADC countries as well. The update is required to include the handling and storage of various types of cargo at both their sites in the Port of Walvis Bay, including but not limited to, containers, reefer containers and the handling and bagging of commodities, including hazardous cargo.</p> <p>All interested and affected parties are invited to register with the environmental consultant. By registering you are provided with an opportunity to share any comments, issues or concerns related to the facility, for consideration in the updated environmental assessment. Additional information can be requested from Geo Pollution Technologies.</p> <p>All comments and concerns should be submitted to Geo Pollution Technologies by 27 August 2020.</p> <p>Wikus Coetzer Geo Pollution Technologies Tel: +264- 61-257411 / 81-145-2164 Fax: +264-88626368 E-Mail: zambiadryport@thenamib.com</p>	<p style="text-align: center;">PUBLIC PARTICIPATION NOTICE ENVIRONMENTAL ASSESSMENT: IRRIGATION AND RELATED ACTIVITIES ON VARIOUS FARMS IN THE OMAHEKE REGION</p> <p>Geo Pollution Technologies (Pty) Ltd was appointed by O. M. Steyn, Hinze Investments CC, E. van Niekerk t/a Vision Farming and N. Steenkamp (the proponents), to undertake environmental assessments for crop cultivation and related activities on the farms: Springvale No. 337, Okatambaka No. 266, Bosville Wes No. 755, Rika No. 266, Tokat No. 343, Conellan No. 247, Owingi No. 246 Okasondana No. 264, Evare No. 265 and Okatjiki No. 263 in the Omaheke Region. The detailed project locations may be viewed at: http://www.thenamib.com/projects/projects.html</p> <p>The environmental assessments will be conducted according to the Environmental Management Act of 2007 and its regulations as published in 2012.</p> <p>The proponents currently irrigate land by means of drippers, sprinklers and centre pivot systems. For irrigation, groundwater is abstracted from boreholes. All boreholes used for irrigation will be registered with the Ministry of Agriculture, Water and Land Reform. The main produce are maize, wheat, oats and moringa.</p> <p>All Interested and Affected Parties are invited to register with the environmental consultant. By registering you are provided with the opportunity to share any comments, issues or concerns related to the project, for consideration in the environmental assessments. Additional information can be requested from Geo Pollution Technologies. All comments and concerns should be submitted to Geo Pollution Technologies by 21 August 2020.</p> <p>Quzette Bosman Geo Pollution Technologies Telephone: +264-61-257411 Fax: +264-88626368 E-Mail: gpt@thenamib.com</p>	<p>tsiemunister.</p> <p>"Dit gee ons ook die geleentheid om aan nuwe maniere te dink oor hoe ons goed doen. Die howe en die justisiestelsel moet meer dienste deur middel van digitale platforms beskikbaar stel."</p> <p>Die betaling van onderhoud geskied reeds deur middel van elektroniese fondoordrag, sê sy.</p> <p>"So, dit is nie nodig om fisiek teenwoordig te wees om jou geld te ontvang nie, maar ons moet ons beskikbaarheid verbeter op e-pos en die telefoon in die gevalle wanneer daardie platforms probleme het."</p> <p>Dausab het toegegee agterstande en verdragings met die afhandeling van sake kan nie volkome vermy word nie.</p> <p>"Dié is moeilike tye en ons moet hoe ons goed doen, aanpas, en ons moet aanpasbaar wees, maar die waarheid is: Die coronavirus sal met ons, vir ons, wees en ons moet leer om daarmee en daarrondom te leef."</p> <p>Sy sê toegang tot geregtigheid sluit die beskikbaarheid van regsdiens, soos onderhoudbetalings, regshulp en toegang tot die dienste van die meester van die hoërhof, in.</p> <p>Baie van dié dienste, sê sy, is tans via die e-justice-platform beskikbaar.</p> <p>Normalweg staan regters, landdroste en aanklaers vir mekaar in, behalwe in gedeeltelik voltooide verriëtinge.</p> <p>aan met hul normale pigte en werk ne van die huis af indien hulle geen sake het om aan te hoor nie."</p> <p>NIE GESTOP NIE</p> <p>Jansen gee vir Dausab gelyk dat "die werksaamhede van die hoërhof en die hooggeregshof nie gestop het nie maar word sonder twyfel geraak deur die algemene styging in die aantal Covid-19-gevalle in die land".</p> <p>Sedert Maandag is die landdroshof op Walvisbaai, Katima Mulilo en in Windhoek weer oop.</p> <p>Dit kom nadat die kantoor van die regbank onlangs die tydelike sluiting van dié howe aangekondig het, omdat beaamptes en besuldigdes positief getoets het vir Covid-19, sê Jansen.</p> <p>Volgens hom is alle nodige reëling getref om die veiligheid van regsbeaamptes, personeellede, hofbeaamptes en die publiek te verseker.</p> <p>Jansen sê: "Die howe vorm 'n integrale deel van die samelewing wat verseker dat regsreëls in stand gehou word en die administrasie van geregtigheid op 'n vrye, regverdige en onpartydige manier kan geskied."</p> <p>"Dit is waarom die howe nie een tydens 'n noodtoestand vir 'n lang tydperk kan sluit nie, omdat dit 'n negatiewe impak op die lewens van Namibiërs sal hê."</p> <p style="text-align: right;">- dawer@republiekin.com.na</p>	

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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">FOCUS</p>  <p style="text-align: center;">Medical Focus Mind, Body & Soul</p> <p style="text-align: center;">Published in Republiekin, Namibian Sun & Allgemeine Zeitung on 22 September 2020, nationwide!</p> <p>The medical focus offers you, the client:</p> <ul style="list-style-type: none"> • The opportunity to inform and educate the public on your products and services • A platform to promote your products and services through our focus publication which has grown rapidly over the past years and has an unprecedented reach. <p>BOOKING DEADLINE: 28 AUGUST 2020</p> <p style="text-align: center;">To advertise in this edition contact Anoesga du Toit</p> <p style="text-align: center;">061 297 2065 or anoesga@nmh.com.na</p>	<p style="text-align: center;">PUBLIC PARTICIPATION NOTICE ENVIRONMENTAL ASSESSMENT UPDATE: OPERATIONS OF THE ZAMBIA DRY PORT FACILITY IN THE PORT OF WALVIS BAY</p> <p>Geo Pollution Technologies (Pty) Ltd was appointed by Africa Union Financial Services (Pty) Ltd to update their existing environmental assessment and environmental management plan. Background information for the project, containing a location map, is available at: www.thenamib.com/projects/projects.html</p> <p>The update of the environmental assessment will be according to the Environmental Management Act of 2007 and its regulations as published in 2012.</p> <p>Africa Union Financial Services acts as a logistic hub, not only for cargo to and from Zambia, but for other SADC countries as well. The update is required to include the handling and storage of various types of cargo at both their sites in the Port of Walvis Bay, including but not limited to, containers, reefer containers and the handling and bagging of commodities, including hazardous cargo.</p> <p>All interested and affected parties are invited to register with the environmental consultant. By registering you are provided with an opportunity to share any comments, issues or concerns related to the facility, for consideration in the updated environmental assessment. Additional information can be requested from Geo Pollution Technologies.</p> <p>All comments and concerns should be submitted to Geo Pollution Technologies by 27 August 2020.</p> <p>Wikus Coetzer Geo Pollution Technologies Tel: +264- 61-257411 / 81-145-2164 Fax: +264-88626368 E-Mail: zambiadryport@thenamib.com</p>	<p>WINDHOEK</p> <p>The congresses of the Livestock Producers' Organisation (LPO) and the Namibia Agriculture Union (NAU) will take place on 6 and 7 October respectively at the Safari Hotel and Conference Centre in Windhoek.</p> <p>The NAU congress theme is 'Increasing Production Capacity and Food Self-Sufficiency: How Do We Achieve the Vision?' and the LPO congress theme is 'The Namibian Livestock Industry 2030: Quo Vadis - Where Are We Head-'</p> <p>Due to the coronavirus pandemic there is a lot of uncertainty about the number of people who may attend events. The NAU says at this stage its message is that the congress is on the agenda.</p> <p>The NAU will monitor the situation and inform the regions and farmers' associations if there are any changes.</p>  <p>GREEN THUMB: Unregistered horticulture producers of controlled products should register with the Namibian Agronomic Board. PHOTO: FILE</p>	

Press Notices 19 August 2020

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KONTAKPERSONE		WEER	
GENL. MURTALA MUHAMMEDRYLAAN, POSBUS 3436, WINDHOEK		VOORUITSIGTE	
PUBLIC PARTICIPATION NOTICE			
ENVIRONMENTAL ASSESSMENT UPDATE: OPERATIONS OF THE ZAMBIA DRY PORT FACILITY IN THE PORT OF WALVIS BAY			
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		<p>reageer nie. Hy het slegs gesê die "saak word nog ondersoek."</p> <p>NIE IN GEBRUIK "Naruseb het gesê die polisie sal nie kommentaar lewer op vrae wat verband hou of die 12 kameras in werkende toestand was nie. Dit is ook onduidelik</p>	
		<p>tussen CSS en die polisie, "het die sagtewarelisensie verval en sal dit 'n opgradering verg."</p> <p>Die prokureurs het bygevoeg dat berigte wel waar is wat aandui van die kameras se onderdele is gesteel.</p> <p>"Dit het ongelukkig onder ons kliënt se aandag gekom dat</p>	
		<p>die geel paalkamera naby Heja Lodge in werking gestel.</p> <p>STANDAARDE Die regsplan het verlede week verduidelik die 12 vaste kameras is destyds geïnstalleer toe "spoedmetingstandaarde nie in Namibië beskikbaar was nie."</p> <p>Die regsplan het verlede week verduidelik die 12 vaste kameras is destyds geïnstalleer toe "spoedmetingstandaarde nie in Namibië beskikbaar was nie."</p> <p>Teen dié tyd het die CSS-kontrak verstryk. "Die publikasie daarvan in die Staatskoerant was ongelukkig buite ons kliënt se beheer," het die regsplan bygevoeg.</p> <p>Mnr. Mutonga Matali, woordvoerder van die NSI, het gesê die owerhede het alle relevante inligting met die polisie gedeel en kan nie verder kommentaar lewer nie.</p> <p>Matali het gesê die NSI se taak om die akkuraatheid en geskiktheid van die betrokke instrumente te verifieer, is beperk tot "die goedkeuring, periodieke verifiëring, registrasie en toetsing van handelsmeganika, in teenstelling met kalibrering." - jana@namibiansun.com</p>	
			
		<p>Die geel radarkameras is sedert hulle op die nasionale paaie geïnstalleer is nie in gebruik nie en is nou deel van 'n kriminele ondersoek na 'n projek waarvan hulle deel vorm. FOTO TANJA BAUSE</p>	

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• TIT FOR TAT PARALYSES TOWN COUNCIL		
<p>claims youth leaders are excluded from meetings where leaders and institutions make decisions on behalf of the masses.</p> <p>The SPYL branch demands to be included in such decisions.</p> <p>They also demand decentralisation of public tender procedures to constituency offices, saying that entrepreneurs must travel hundreds of kilometres to obtain forms at Nkurenkuru.</p> <p>These demands are contained in a statement issued by Swapo Party Youth League (SPYL) Kavango West regional secretary Boniphatus Muronga.</p> <p>"The youth should be included in meetings as in most cases the youth are left aside, even some decisions are taken without the knowledge of the youth leaders," Muronga said.</p> <p>Muronga further requested that members</p>	<p>should be included in meetings as in most cases the youth are left aside.</p> <p>of the public be allowed to ask questions during the regional governor's annual State of Region Address (Sora).</p> <p>Since the address is delivered at an extraordinary regional council meeting, only constituency councillors may ask questions. On the issue of public procurement, Muronga said it does not make sense for a person to travel 250 kilometres from Mururani to Nkurenkuru just to acquire a tender document. "Free tender bids should be decentralised to the constituency offices to enable free participation of all entrepreneurs of Kavango</p>	<p style="text-align: center;">PUBLIC PARTICIPATION NOTICE</p> <p style="text-align: center;">ENVIRONMENTAL ASSESSMENT UPDATE: OPERATIONS OF THE ZAMBIA DRY PORT FACILITY IN THE PORT OF WALVIS BAY</p> <p>Geo Pollution Technologies (Pty) Ltd was appointed by Africa Union Financial Services (Pty) Ltd to update their existing environmental assessment and environmental management plan. Background information for the project, containing a location map, is available at: www.thenamib.com/projects/projects.html</p> <p>The update of the environmental assessment will be according to the Environmental Management Act of 2007 and its regulations as published in 2012.</p> <p>Africa Union Financial Services acts as a logistic hub, not only for cargo to and from Zambia, but for other SADC countries as well. The update is required to include the handling and storage of various types of cargo at both their sites in the Port of Walvis Bay, including but not limited to, containers, reefer containers and the handling and bagging of commodities, including hazardous cargo.</p> <p>All interested and affected parties are invited to register with the environmental consultant. By registering you are provided with an opportunity to share any comments, issues or concerns related to the facility, for consideration in the updated environmental assessment. Additional information can be requested from Geo Pollution Technologies.</p> <p>All comments and concerns should be submitted to Geo Pollution Technologies by 27 August 2020.</p> <p>Wikus Coetzter Geo Pollution Technologies Tel: +264-61-257411 / 81-145-2164 Fax: +264-88626368 E-Mail: zambiadryport@thenamib.com</p>
		

Appendix B: Consultants' 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 130 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 (Pty) Ltd.
Name of Staff	:	ANDRÉ FAUL
Profession	:	Environmental Scientist
Years' Experience	:	19
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	:	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
Basic Fire Fighting	EMTSS, 2017

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	+130
Research Reports & Manuals:	5
Conference Presentations:	1