PORT OF LÜDERITZ

UPDATED ENVIRONMENTAL MANAGEMENT PLAN

Prepared by:

Prepared for:

July 2024

Project:	**UPDATED ENVIRONMENTAL MANAGEMENT PLAN FOR THE OPERATIONS OF THE PORT OF LÜDERITZ**	
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Report Approval	 **André Faul** Conservation Ecologist	

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1 INTRODUCTION

The Namibian Ports Authority Act, Act Number 2 of 1994, as proclaimed in Government Gazette No. 810, made provision for "the establishment of the Namibian Ports Authority to undertake the management and control of ports and lighthouses in Namibia and the provision of facilities and services related thereto; and to provide for matters incidental thereto." Under this act, Namport, a state owned enterprise, was established as the port authority and under their control is the Port of Walvis Bay on the central coast and the Port of Lüderitz on the southern coast of Namibia.

Namport's key roles are to (www.namport.com.na):

- Manage the port facilities to cater for current trade needs.
- Develop the ports for future demands.
- Contribute to the competitiveness of the SADC region's trade through the efficient, reliable and cost-effective supply of port services.
- Facilitate economic growth in Namibia by enabling regional development and cross-border trade.
- Promote the Ports of Walvis Bay and Lüderitz as preferred routes for sea-borne trade between SADC, Europe and the Americas.
- As the founding architects of the Walvis Bay Corridor Group, assist with developing cross-border trade.
- Minimize the impact of port operations on the natural environment by applying International Organisation for Standardisation (ISO) 14001.
- Uplift and support the communities in which Namport operates.

Namport has an existing Environmental Management Plan (EMP) for their operations in the Port of Lüderitz (Figure 2-1). Situated on the southern coast in the //Karas Region, the Port of Lüderitz plays an important role in especially the mining and fishing sectors of Namibia.

Geo Pollution Technologies (Pty) Ltd was appointed by Namport to update the EMP and apply for renewal of their environmental clearance certificate (ECC). The updated EMP will be based on the EMP prepared in 2019.The updated EMP will continue to provide management options to ensure environmental impacts of the port are minimised. 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 EMP is a tool used to take pro-active action by addressing potential problems before they occur. This limits potential future corrective measures that may need to be implemented and allows for application of mitigation measures for unavoidable impacts.

The ECC renewal is required in compliance with Namibia's Environmental Management Act (Act No 7 of 2007).

2 SCOPE

The scope of the EMP is to:-

- Provide a brief overview of all existing 3components, and their operations, related to the Port of Lüderitz, inclusive of both Namport and tenants.
- Update the legal and regulatory framework within which the Port of Lüderitz operates.
- Update the brief overview of the environment, i.e. the physical, biological, social and economic conditions.

- Re-evaluate existing potential impacts of the port on the environment.
- Update the range of management actions which could mitigate the potential adverse impacts to acceptable levels.
- To provide sufficient information to the relevant competent authorities and the Ministry of Environment, Forestry and Tourism to make informed decisions regarding the port operations.

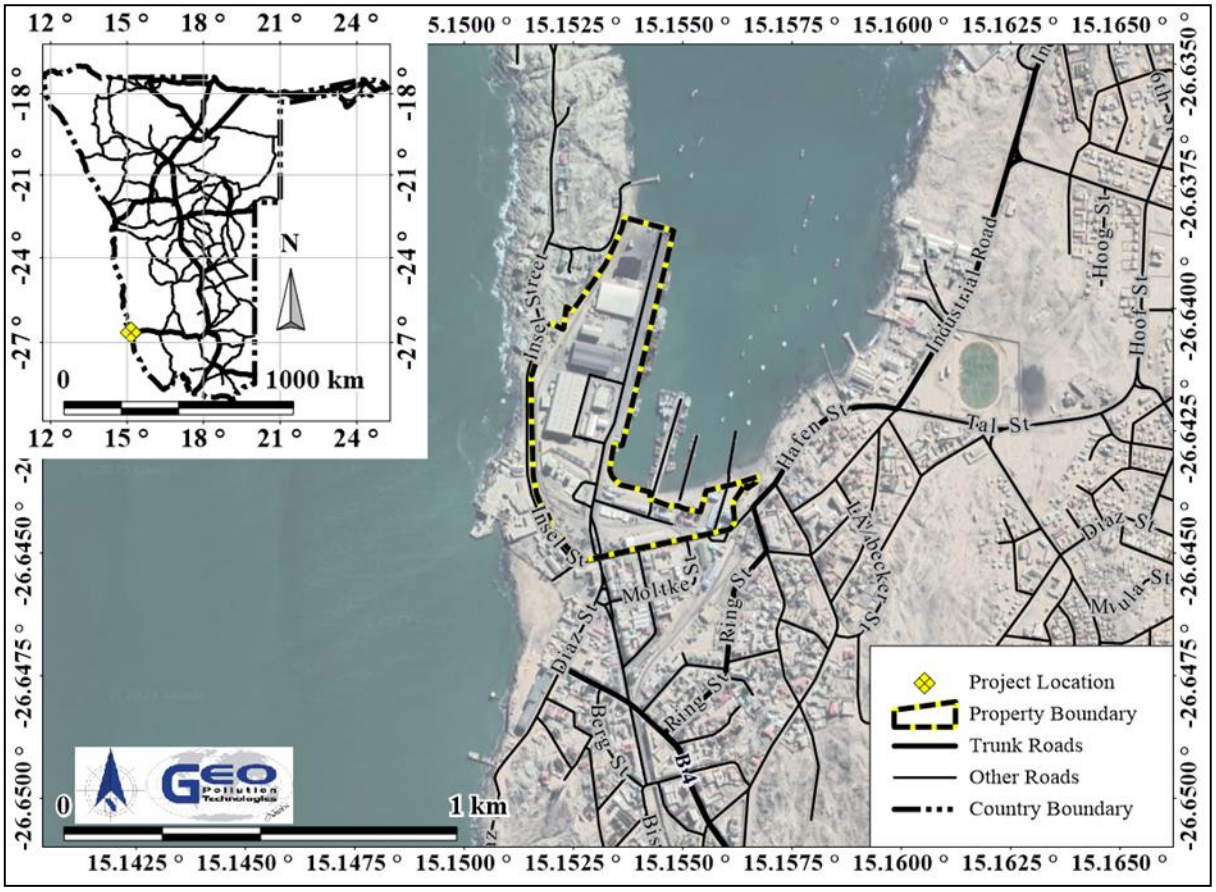


Figure 2-1 Location of the main Port of Lüderitz onshore footprint

3 METHODOLOGY

The following methods were used to prepare the updated 3EMP:

- Baseline information was updated where necessary using existing secondary information (desktop study).
- The infrastructure and operational procedures, potential environmental impacts and preventative and mitigating methods were updated where required.
- The inputs, comments and questions of key identified stakeholders and other interested and affected parties (I&APs) were considered and addressed in the updated EMP.

4 THE PORT OF LÜDERITZ

The Port of Lüderitz is under jurisdiction of Namport, who acts as landlord and port operator, with a number of tenants operating in and from the port. The following subsections, categorised by activity, provide a brief description of the activities in the port. See Figure 4-1 for the port layout and tenants.

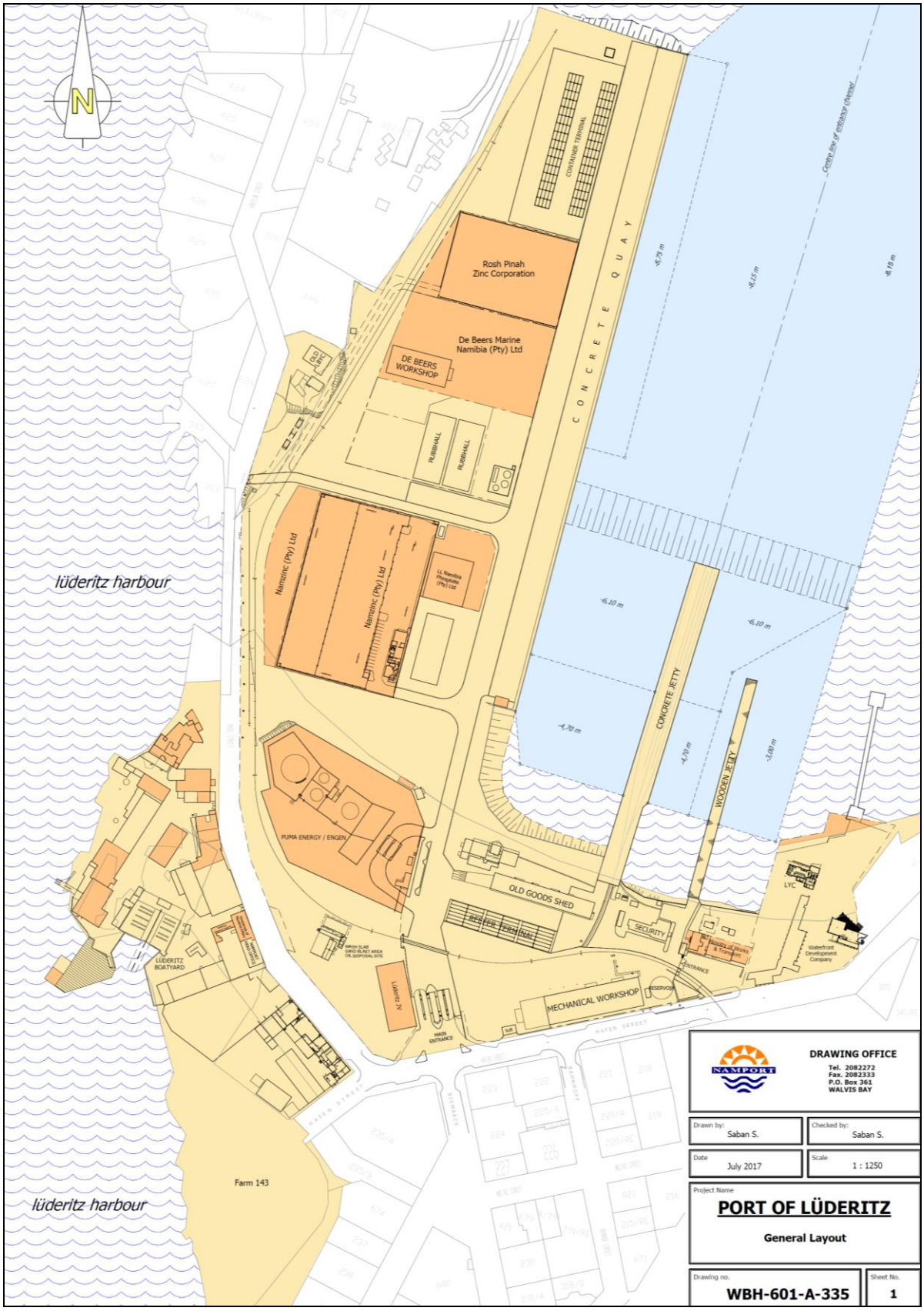


Figure 4-1 Port layout and tenants

4.1 BULK AND BREAK-BULK IMPORTS

Sea Ports are typically the main avenue for bulk and break-bulk imports. These can include chemicals, mineral ores, coal, etc. Currently the main break-bulk cargo imported into Namibia via the Port of Lüderitz are fuel, fish and general cargo. Break-bulk cargo are typically bulk bags or crates that are offloaded by means of cranes.

The Port of Lüderitz currently only receive diesel fuel by means of tanker ships. Diesel is offloaded at the quay wall and pumped via an underground pipeline to the bulk fuel storage facility of Puma Energy Namibia (Figure 4-2). The port could potentially also receive other petroleum products in future.

4.2 BULK AND BREAK-BULK EXPORTS

Mining ore can be exported in bulk via the port. Currently the main bulk export product is manganese ore and in 2021/2022 a total of 768,085 tons were exported (Namport Annual Report 2021/2022). This is approximately 80% of all products shipped from Lüderitz as bulk or break-bulk cargo. Zinc ingots, zinc ore and concentrate, were the second most exported product at 95,359 tons (Namport Annual Report 2021/2022).

Ore is transported into the port area by means of trucks and trains and either offloaded in dedicated temporary storage areas (typically rub halls) or directly loaded onto ships. The trucks typically are either side tipper trucks or flatbeds with skips. Side tipper trucks enter the temporary storage areas for offloading, while the skips are lifted off the trucks and emptied directly into the bulk cargo hulls of ships by means of cranes with skip tipplers. Trains typically transport containers which are stacked in the port and emptied into ships with cranes. The capacity of both the rail network to Lüderitz as well as the rail yard within the Port of Lüderitz are however limited.

4.3 FUEL BUNKERING

Diesel bunkering of ships is performed by Puma Energy. Underground pipelines service both the quay area and the concrete jetty where hose trolleys are used for port bunkering purposes. Currently, no offshore bunkering occurs within port limits. Bunkering outside of port limits does not fall under the jurisdiction of Namport.

Figure 4-2 Bulk fuel storage facility and pipeline routes

4.4 FISHING OPERATIONS AND MARICULTURE

Wave action along the western shore of the Robert Harbour prevents safe berthing of fishing vessels at jetties of the fish factories. Fishing vessels therefore use the commercial harbour for berthing to offload fish and to replenish supplies.

Mariculture of oysters and abalone takes place within port limits. These activities do however not form part of Namport's operations and fall outside the scope of this EMP. However, mariculture is recognized by government as an important sector in Namibia and port activities may impact on the mariculture2 industry.

4.5 TRAFFIC

Land based traffic into and out of the port is regulated at the gate manned 24 hours by security. Strict access control is practised with compulsory alcohol testing. The access gate is off Hafen Street and limited off-street parking space is provided outside the access gates.

A railway line with sidings is present. It is currently not utilised, but forms part of the future plans of optimisation of the port for imports and exports.

Access to the port through town is mainly via Bismarck Street which hosts the town centre and many historically significant buildings.

4.6 SECURITY

The entire landside of the port area is fenced off and security personnel man the entrance gate. No unauthorised access is allowed in the port area and all visitors must obtain an entrance permit from Namport security.

4.7 ADDITIONAL INFRASTRUCTURE

Apart from the infrastructure and operations within the commercial harbour, Namport has some additional infrastructure outside of the harbour area. This includes the head office and

Lüderitz Boat Yard opposite of Insel Street as well as various properties throughout Lüderitz and at Diaz Point (see Figure 4-3 and Appendix A). At Diaz Point the Namport property hosts the lighthouse as well as some buildings and related infrastructure that were previously leased to a third party for tourism purposes.

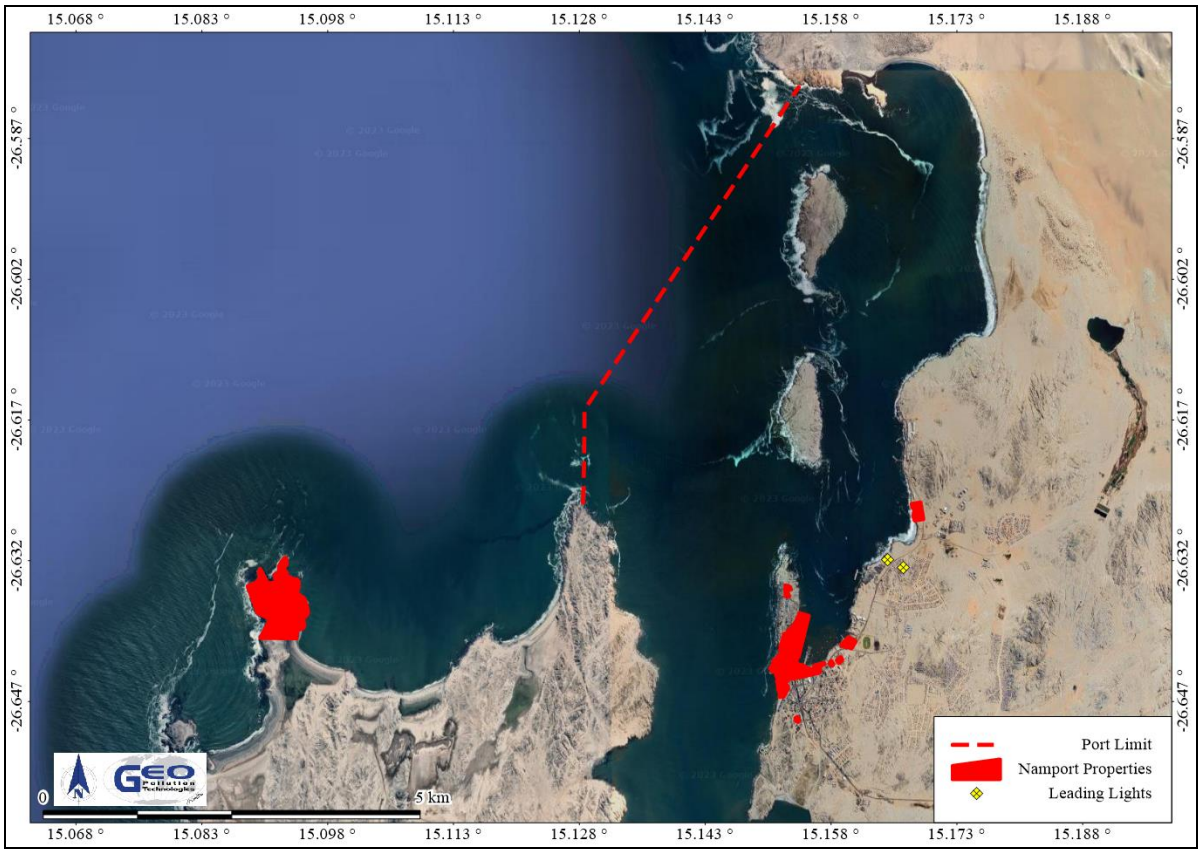


Figure 4-3 Location of Namport properties

5 THE RECEIVING ENVIRONMENT

For purposes of this EMP a detailed environmental description is not provided. However, this section briefly summarises the most important environmental characteristics of the study area, as well as a short statement on the potential impacts/implications of the port operations on each.

5.1 LOCALITY AND SURROUNDING LAND USE

The Port of Lüderitz is situated in one of the oldest towns in Namibia, dating back to the late 19th century. Originally established as mainly a fishing and mining town, these two natural resources remain the main economic drivers of the town and port. Due to the town's development around the port, the most important historic buildings of the town are also the closest to the port and its access route. A number of tourist establishments are also found along the access route to the port and on Shark Island, west of the port. Shark Island is also a proclaimed National Heritage Site. The port is further surrounded by a variety of land uses including residential, business and industrial zones (Figure 5-1).

On land, Lüderitz is surrounded by the Tsau //Khaeb National Park which falls under the management of the Ministry of Environment and Tourism (Figure 5-2). Due to the diamond mining in the Tsau //Khaeb National Park, most of its area is off limits to the general public and tourists. The Tsau //Khaeb National Park covers approximately 26,000 km^2 and falls mainly within the Succulent Karoo Biome which is characteristic of high species diversity and endemism.

The offshore area around Lüderitz, as well as the rocky shores, fall within the proclaimed Namibian Islands' Marine Protected Area (Figure 5-2), in an Important Bird Area (NA017) (Figure 5-4), as well as the Lüderitz Rock Lobster Sanctuary (Figure 5-5).

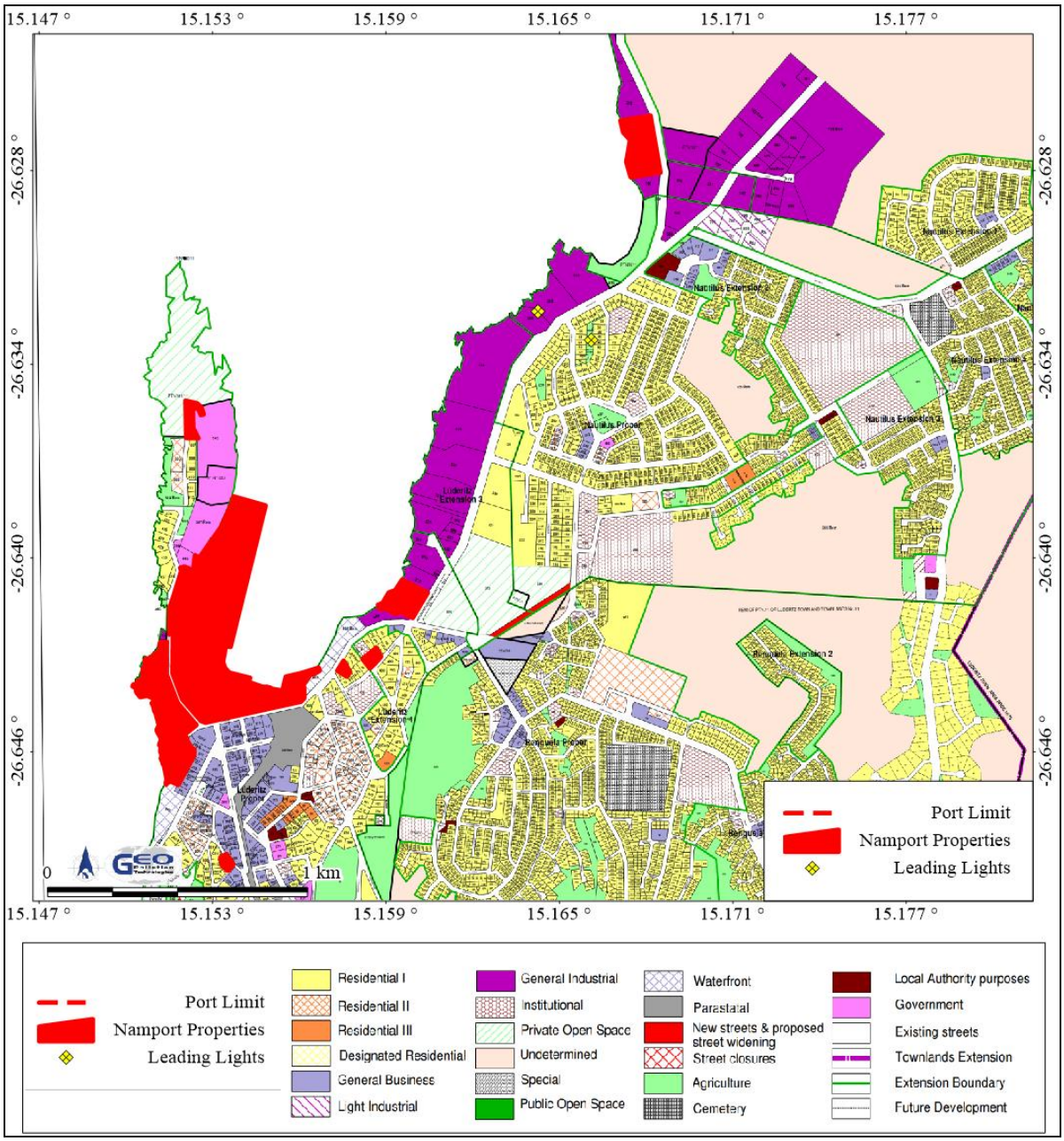


Figure 5-1 Land use

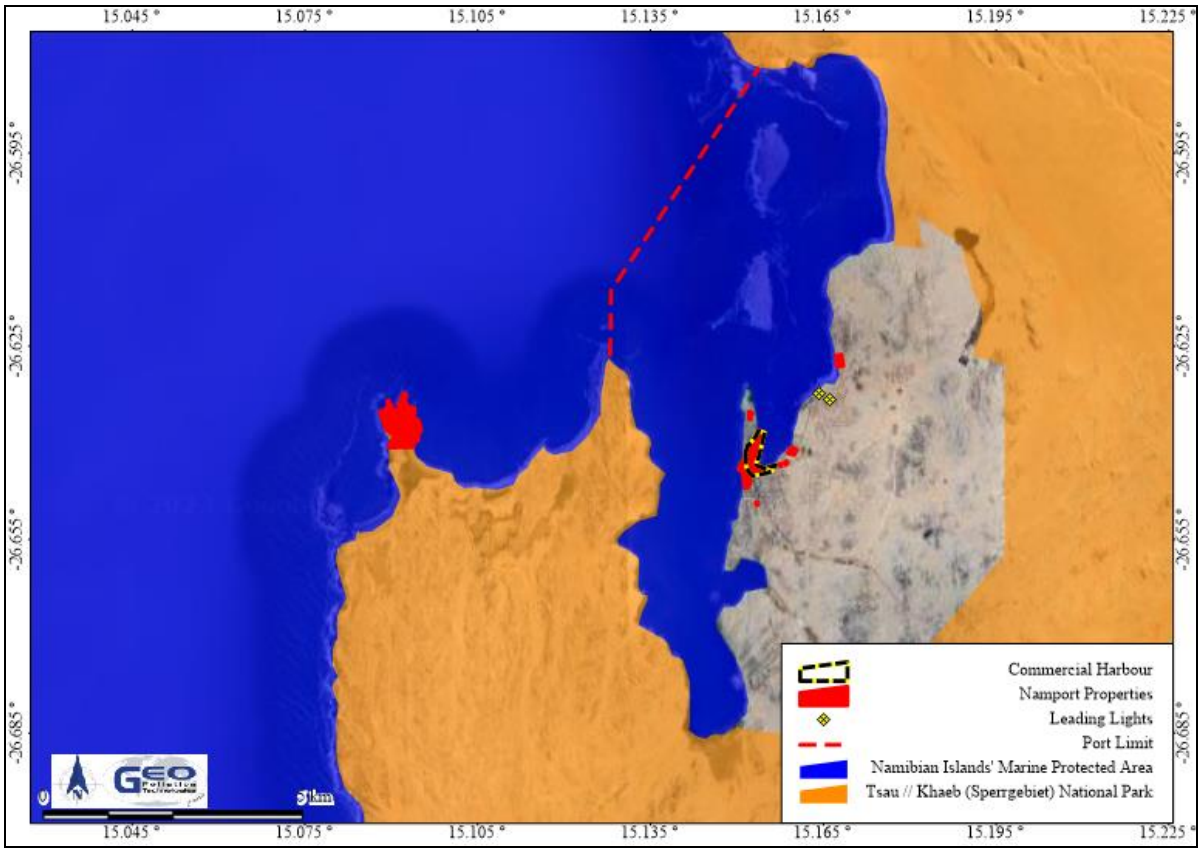


Figure 5-2 Protected areas

Implications and Impacts

Operations of the port can impact on or influence the Shark Island National Heritage Site and the overall heritage value of the town. Should increased imports, exports and port related services via the Port of Lüderitz realise, significant traffic impacts can be expected in town and these may negatively impact on residents and the tourism industry. The town however developed as a direct result of the establishment of the port more than a century ago.

The Port of Lüderitz operates within a sensitive and mostly protected environment and thus extra environmental consideration should be given and additional legislation may apply to the port. Significant environmental impacts could result in degradation of the environment.

5.2 CLIMATE

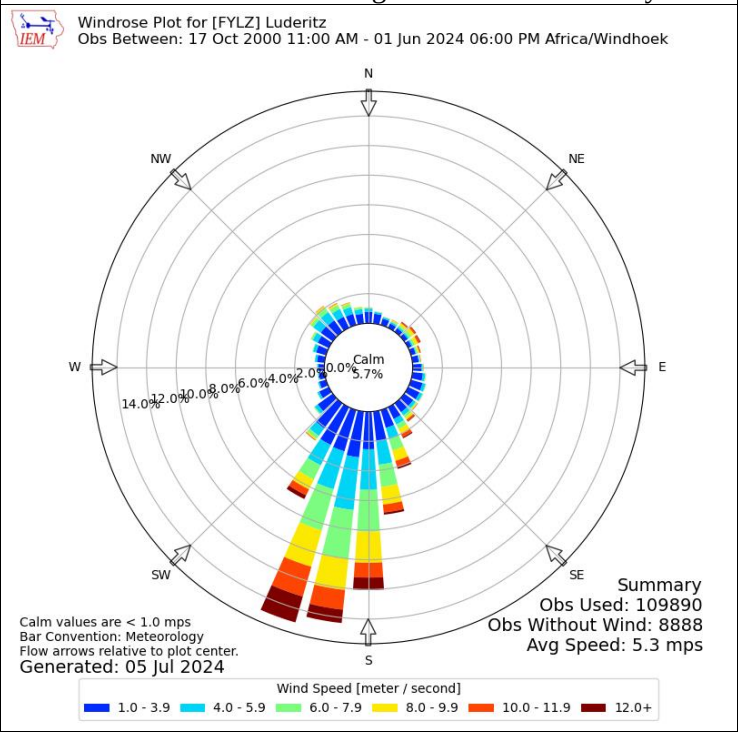
Lüderitz is located on the Namibian coastline in the arid Namib Desert. The arid conditions are as a result of dry descending air and upwelling of the cold Benguela Current. As a result, thick fog or low stratus clouds are a regular occurrence in Lüderitz. This is due to the influence of the Benguela Current and forms a major source of water for the flora in the Namib Desert.

Namibia is situated within an anti-cyclone belt of the southern hemisphere. Winds generated from the high-pressure cell over the Atlantic Ocean blow from a southerly direction when they reach the Namibian coastline. As the Namibian interior is warm (particularly in summer), localised low-pressure systems are created which draws the cold southerly winds towards the inland desert areas. These winds manifest themselves in the form of strong prevailing south to south-westerly winds, which range from an average of 20 knots (37 km/h) during winter months to as high as 60 knots (120 km/h) during the summer.

Daily fluctuations in wind speed are characterised by calmer winds in the morning with strong wind from late morning to later afternoon. During winter, the east winds generated over the

hot Namib Desert have a strong effect on temperature, resulting in temperature in excess of 30 ˚C and tend to transport significant volumes of sand. Table 5-1 presents a summary of climate conditions in the Lüderitz area.

Table 5-1 Summary of climate data (Atlas of Namibia Project, 2002)

Average annual rainfall (mm/a)	0-50 mm; half of the rainfall occurs from May to June
Variation in annual rainfall (%)	80 – 90%
Average annual evaporation (mm/a)	2,400-2,600
Water deficit (mm/a)	1,701-1,900
Temperature	Average maximum: Between 24 °C in March/April and 19.3 °C in September Average minimum: Between 16.5 °C in February and 9.1 °C in August Average annual >16 °C
Fog	Approximately 126.7 days of fog per year
Wind	Prevailing wind as measured at the Lüderitz Airport are strong south-westerly. However, it is expected that nearshore the wind direction will be strong south to south-easterly.
Wind rose for the period 17 October 2000 to 26 March 2024 for the Lüderitz Airport (http://mesonet.agron.iastate.edu/)	

Climate Change and Sea Level Rise - Since 1960, the global average sea level rise is approximately 1.8 mm per year (Consulting Services Africa et al. 2009). Lüderitz is considered a sheltered environment where the impacts of sea level rise are expected to be less severe than in exposed environments like Swakopmund. Although future predictions on climate change and sea level increase are based on many variables, it is clear that in future the frequency of climate extremes will increase. For Lüderitz, the present day worst case scenario is that an extreme sea level of +1.10 m above land levelling datum (LLD) will occur every 100 years. LLD is approximately equal to mean sea level. By 2030, an extreme sea level of +1.11 m predicted to occur once every year mostly due to an increased frequency of storm events associated with climate change (Consulting Services Africa et al. 2009). The major impacts associated with this will be increased erosion of the shore line (limited in Lüderitz due to

rocky shores) as well as inundation of low lying areas. Although less impacts are expected in Lüderitz some low lying areas as well as the existing port will be affected. These scenarios do not take into account the impact of polar ice melting which may result in more severe impacts. For more information including all scenarios see Consulting Services Africa et al. (2009).

Implications and Impacts

Due to the ability of the strong winds to carry sand as well as mineral ore dusts to sensitive receptors, wind is an important factor to be considered for the port operations. It has to be given serious consideration in the respective EMPs of Namport and the tenants. Wind data specific to the Port of Lüderitz is not available, but is expected to be a predominantly strong southerly wind. This means any dust pollution at the port will be carried northwards into the ocean. During east winds, the properties immediately west of the port will be impacted by dust.

In terms of climate change and sea level rise the port should be safe in the short to medium term future. Considering worst case scenarios in sea level changes, careful planning is needed to ensure the future integrity and safety of the port is maintained.

5.3 HYDRAULIC CONDITIONS

Outside of the Lüderitz Bay area waves are predominantly from a southerly (43%) direction followed by south-westerly (19%) and south south-westerly (15 %) directions. Wave action from the north only occurs about 2 % of the time. This means that waves enter the Lüderitz Bay area mostly by refraction and diffraction: this occurs to such an extent that waves ultimately enter Menai Creek and Robert Harbour from a northerly direction. The eastern side of Robert Harbour is more exposed to wave action than the west where the quays are situated.

The Benguela Current runs in a north-westerly direction and at a speed of between 0.25 and 0.35 m/s along the west coast of Southern Africa. Currents in Lüderitz Bay are mostly tidal driven. In Robert Harbour currents are mainly south and south-westerly in direction and of low velocity. Currents exit Lüderitz Bay in a strong northward direction around Northeast Point. As a result of wave and current activity in the relatively shallow Lüderitz Bay, waters are naturally turbid due to continued resuspension of sediments (Pulfrich & Noffke 2003).

Implications and Impacts

Due to relatively weak currents in Robert Harbour any pollutants entering the water will disperse relatively slowly out of the area. However, once it reaches the outer areas of the bay, the strong northerly currents will quickly carry pollutants northwards up the coastline. Pollutants floating on the surface of the water within Robert Harbour may however still disperse quickly due to strong winds. The continued re-suspension of sediments in the shallow areas of Lüderitz Bay will hamper finer pollutants from settling out of suspension.

5.4 CORROSION ENVIRONMENT

The Namibian coastline is well known for being a very corrosive environment, which may be attributed to the frequent salt-laden fog, periodic winds and abundance of aggressive salts (dominantly sodium chloride and sulphates) in the soil. The periodic release of hydrogen sulphide (H_2S) from the ocean is also expected to contribute to corrosion. Figure 5-3 presents corrosion comparison data for a number of locations in southern Africa, including Walvis Bay. Although Lüderitz is not part of the comparison, similarly high rates of corrosion and weathering can be expected as at Walvis Bay. The combination of high moisture and salt content of the surface soil can lead to rapid deterioration of metal and concrete structures.

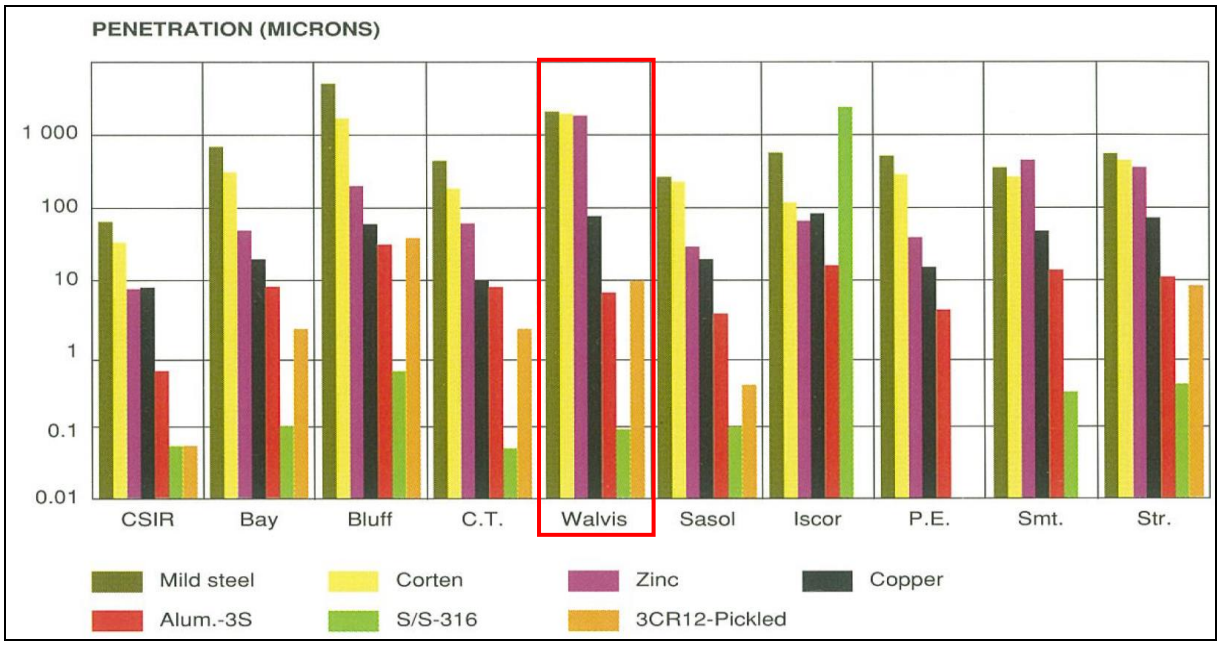


Figure 5-3 Twenty year corrosion exposure results in southern African towns (Callaghan 1991)

Implications and Impacts

Chemical weathering of metal and concrete structures is a concern. Due to the extreme corrosive environment the choice of building materials is important and regular maintenance is essential to maintain the integrity of all infrastructure.

5.5 FAUNA OF THE BAY

5.5.1 Birds

Lüderitz falls within Important Bird Area (IBA) NA017, the Lüderitz Islands IBA (Figure 5-4). The area is characterized by high species abundance due to the nutrient rich waters caused by upwelling. The IBA consist of the four islands; Halifax, Penguin, Seal and Flamingo Island, as well as the rocky shoreline of the mainland. The islands support more than 10,000 birds while the rocky shorelines of the mainland support more than 14,000 shorebirds (BirdLife International 2017). Historically anthropogenic pressures on many of the bird species have led to a steep decline in their numbers. This was largely as a result of guano harvesting, egg collection and habitat alteration and loss. These activities have since ceased, but occasional oil spills and shipping noise still impact birds. In addition to anthropogenic impacts, avian influenza has also recently occurred among Lüderitz's marine birds, impacting the species' long-term survival.

Some important species that are considered endangered or near threatened, and occurring within IBA NA017 include African Penguins, Bank Cormorants, Crowned Cormorants, Cape Gannets, and Greater Flamingos. The second most important colony of the species is found on Penguin Island with a few breeding on Seal Island (personal communication J. Kemper, 2022).

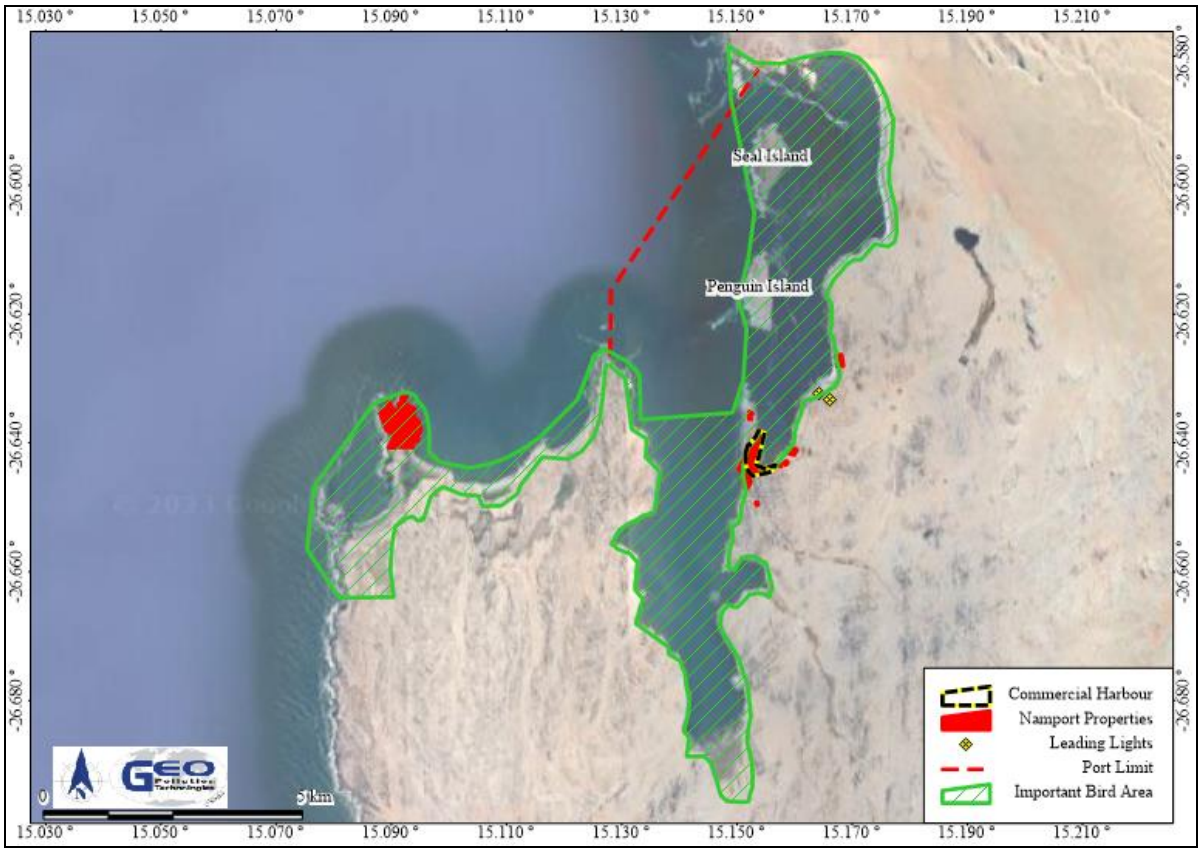


Figure 5-4 Important Bird Area (IBA) NA017

Implications and Impacts

The island complex and mainland rocky shore are important bird breeding and bird feeding grounds. Possibility of pollution, specifically oil spills, can have serious negative effects on species like the African Penguin while Bank Cormorants are easily disturbed which can result in reduced breeding success. Bright lights used at night has the potential of disorientating birds like flamingos that fly at night. This may lead to collisions with man-made structures.

5.5.2 Marine Animals

Approximately 25 species of cetaceans occur along the Namibian coast. This includes migratory, resident and semi-resident species. Under Namibian law, all whales and dolphins are protected species and may not be harvested. Bottlenose dolphins, Heaveside's dolphins and dusky dolphins occur in the area. Less frequently, Humpback whales and the Southern Right whale are also encountered (Pulfrich 2010).

Namibia has quite a large population of Cape fur seals. A small colony are present at Diaz Point. Historically, Cape fur seal populations showed significant declines in population numbers due to overharvesting. However, the Namibian population has shown significant increases over the last two decades with new populations of seals establishing all along the coast. In terms of invertebrates, the rock lobster *Jasus lalandii* is of significant importance. The entire area inside port limits is a declared rock lobster sanctuary (Figure 5-5).

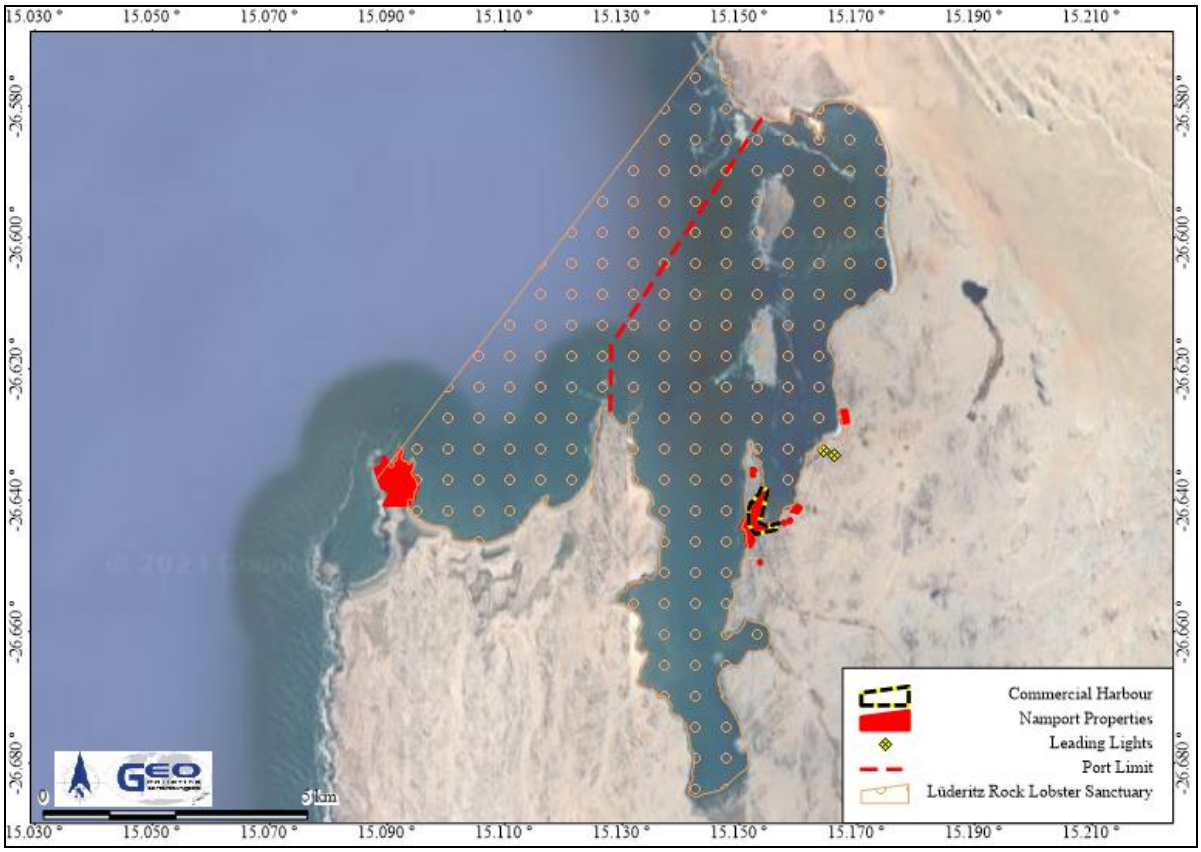


Figure 5-5 Lüderitz rock lobster sanctuary

Implications and Impacts

Whales, dolphins and seals are often considered as flagship species to which people attach great inherent value. This is evident from the million dollar tourism industry based on the presence of these mammals. Pollution may have a negative impact on locally occurring populations. Increased ship traffic may also result in more frequent ship strikes with whales and dolphins. Excessive noise producing events in the marine environment may also negatively impact on marine mammals. Pollution of the marine environment may negatively impact on all marine animals.

5.6 TERRESTRIAL ECOLOGY

The Lüderitz peninsula is part of the Succulent Karoo biome with a succulent steppe vegetation type and dwarf shrubland structure (Atlas of Namibia). The Succulent Karoo is a biodiversity hotspot and has the world's richest succulent diversity which is also characterised by high reptile and invertebrate diversity (CEPF 2005).

Although very sparsely vegetated, the quarter degree 2615CA, which includes the Lüderitz Peninsula, is considered to have one of the highest number of endemic plant species (64 species) of the portion of Succulent Karoo that falls within Namibia (Burke 2004). Other areas may however also have high endemism, but may be under sampled due to remoteness and inaccessibility compared to the Lüderitz area (Burke 2004). Nevertheless the Lüderitz Peninsula and surrounding area does form a hotspot within the Sperrgebiet.

The Sperrgebiet has been divided into 56 vegetation types (Burke 2006; MET 2013). Lüderitz falls within the Lüderitz Peninsula Dwarf Shrubland vegetation type which has a size of 93.2 km^2, inclusive of the Lüderitz urban environment, and comprises of 0.43% of the Sperrgebiet (Figure 5-6). It was rated by Burke (2006) as having "very high" conservation importance. Within the context of the Tsau //Khaeb National Park, the Lüderitz Peninsula has been declared an IUCN Protected Landscape/Seascape zone (see section 5.1). Table 5-2 presents the current estimated habitat loss within the Lüderitz Peninsula Dwarf Shrubland as a result of existing roads and the townlands. Approximately 84% of this habitat remains in a relatively

undisturbed condition. However, future proposed expansions of the town as well as developments on Angra Point and surroundings may significantly impact on these habitats. Towards the south and east of the Lüderitz Peninsula Dwarf Shrubland is the Lüderitz Plains Dwarf Shrubland with a high conservation value according to Burke (2006).

Brown hyenas occur in in the vicinity of the Lüderitz Peninsula (Kuhn et al. 2008; Knowles et al. 2009). Brown hyenas are listed as near threatened according to the IUCN, but do have a stable population (Wiesel 2015). Jackal, springbok, porcupines and occasionally ostriches and oryx are some of the mammals that utilize the areas surrounding Lüderitz for grazing (Pers Comm: Kolette Grobler).

Table 5-2 Current habitat loss within the Lüderitz Peninsula Dwarf Shrubland

Description	Area (km^2)
Lüderitz Peninsula Dwarf Shrubland	93.2
Lüderitz Townlands*	14.4
Existing Roads/Rail**	0.44
Area of Lüderitz Peninsula Dwarf Shrubland Remaining	78.4

* It is assumed that the entire townlands area will in future be developed and is thus regarded in its entirety as habitat lost.
**The existing roads and rail area is based on an estimate.

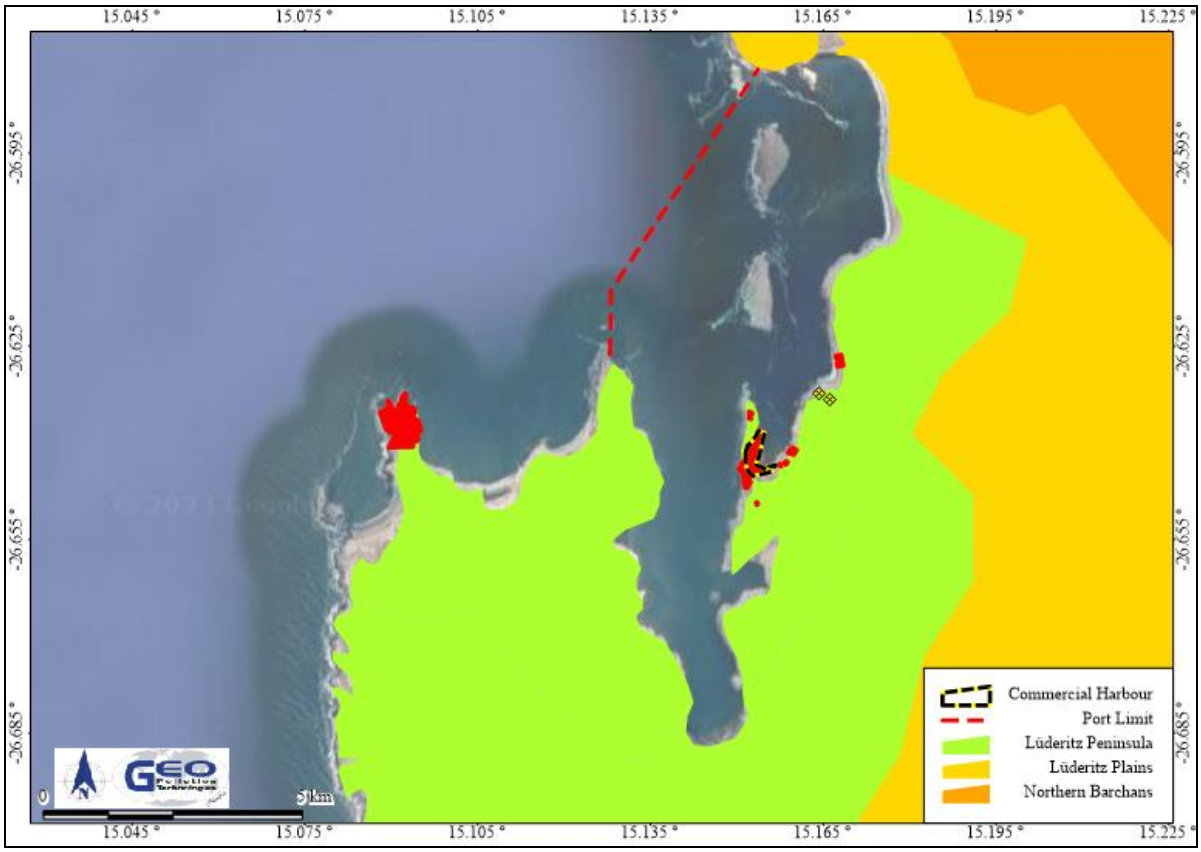


Figure 5-6 Vegetation types at Lüderitz

Impacts

Direct impacts on terrestrial fauna and flora is not expected from the operations of the commercial harbour. However, activities outside of the port that are linked to the port operations, for example the trucking and rail transport of goods to and from the port, may result in impacts. This includes accidents between vehicles and animals crossing the roads or railway line.

5.7 SOCIO ECONOMIC ENVIRONMENT

It is important that the key-socio-economic trends in Lüderitz are understood as a basis for the EMP.

5.7.1 Population

From 2001 to 2011, the //Karas Region showed a population increase of 1.1%. This is less than the Namibian intercensal growth rate of 1.4%. For the same period, Lüderitz however, showed a decline in population size of 5.6% and had a population size of 12,537 in 2011 (Namibia Statistics Agency, 2011). The remoteness of Lüderitz, and the lack of employment and economic diversification opportunities, possibly contribute to this decline. This may lead to some inhabitants relocating to other urban centres offering better prospects.

Lüderitz has an unemployment rate of 28.2% which is slightly lower than the rate of 32.2% of the Karas Region (Namibia Statistics Agency, 2011).

Implications and Impacts

The operations of the port provide direct and indirect employment opportunities. This includes employment within Namport as well as the various industries utilising the port (e.g. mining, fishing, fuel, etc.).

Social ills and the spread of diseases are potential negative social impacts. These are often related to the shipping and trucking industry which is central to the port's continued existence.

5.7.2 Electricity Supply

Over recent years, Namibia and the rest of the Southern African Power Pool (SAPP) have struggled to meet the demand to supply electrical power. Electricity demand and supply forecasts are provided in Figure 5-8 (Hatch 2014). This demand forecast corresponds relatively well with actual usage (Figure 5-9). In 2022 the total electricity usage was 2,425 GWh.

Implications and Impacts

The cumulative effect of mining, industrial, tourism and residential development in Namibia will exacerbate the current power shortages. It is therefore imperative that NamPower be regarded as one of the key stakeholders in the port operations and future planning.

5.7.3 Water Supply

The NamWater Koichab water supply scheme supplies Lüderitz with potable water. It consists of about nine production boreholes, supplying groundwater from the alluvial aquifer formed in a paleo-channel of the Khoichab River. During 2022/2023 the actual volume of water sold by NamWater was 1,116,872 m^3 (Figure 5-10). The potential annual supply of the scheme is 1,460,000 m^3 (Figure 5-10). Based on the water use records there was an increase in water usage over the last two years. The average monthly water use for 2022/2023 is 93,073 m^3 compared to 94,126 m^3 for 2021/2023. Thus, currently there is an annual surplus of 343,128 m^3 of potable water.

Future groundwater development will focus mainly around the existing infrastructure at the Koichab water supply scheme, as it is considered to be the only known source with a sustainable yield of potable water. No permanent natural surface water sources exist near Lüderitz apart from the Atlantic Ocean.

Implications and Impacts

With increased operations in the Port of Lüderitz, the demand for potable water will increase. The envisioned increase in mineral ore exports via the port may increase water consumption through dust suppression activities. It is therefore imperative that NamWater be regarded as one of the key stakeholders in the port operations and future planning.

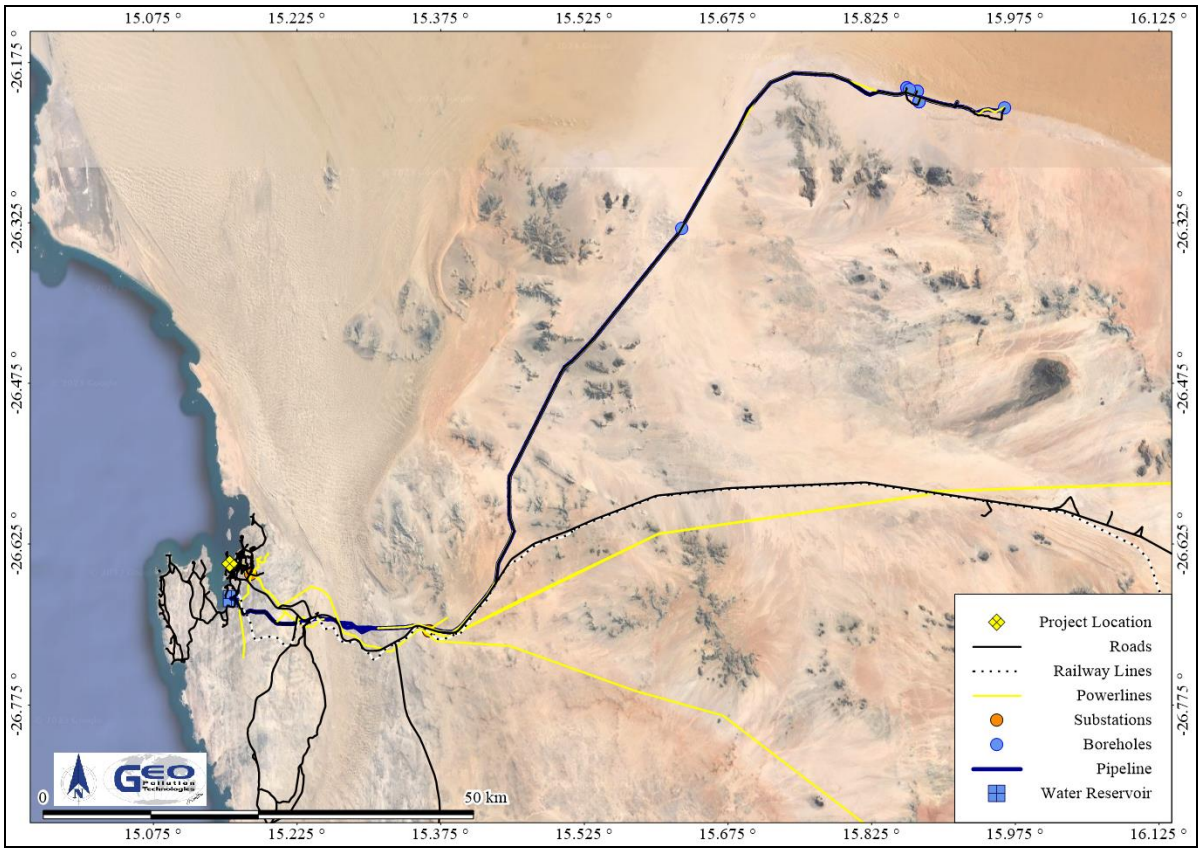


Figure 5-7 Services infrastructure

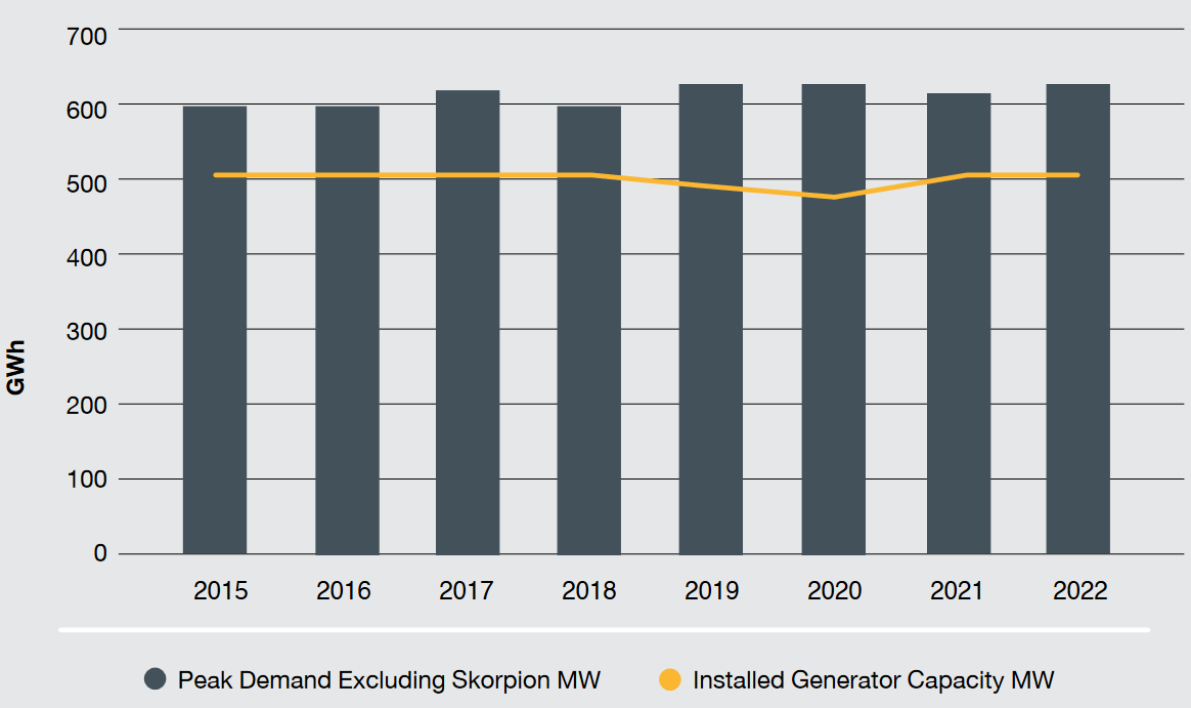


Figure 5-8 Electricity supply and demand 2015 to 2022 (from ECB Annual Report 2023)

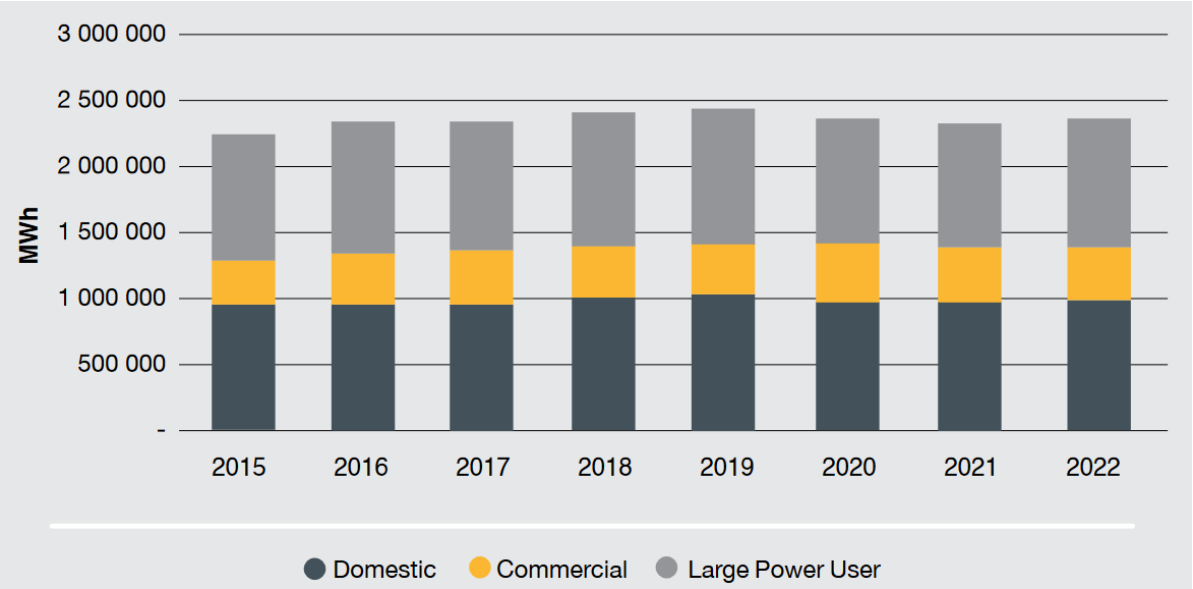


Figure 5-9 Actual electricity usage 2015 to 2022 (from ECB Annual Report 2023)

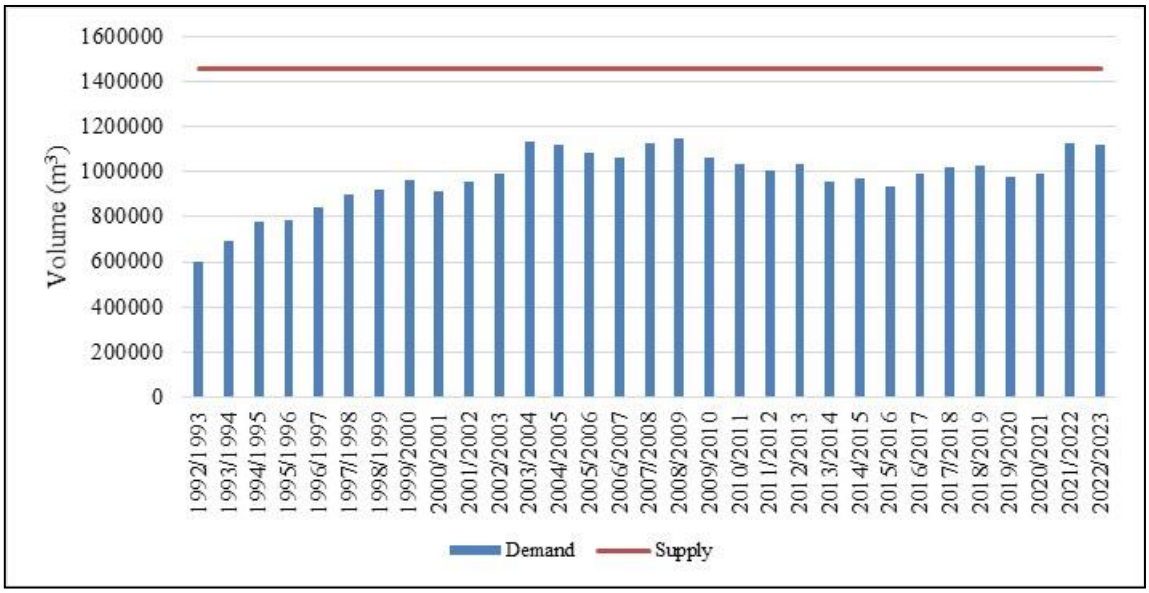


Figure 5-10 Potable water supply and demand statistics for Lüderitz (source: NamWater)

5.7.4 Transport

Only one road, the B4 main road, provides access to Lüderitz from central Namibia. One airport services Lüderitz with only three flights of the national airline to and from Windhoek per week. The railway line to Lüderitz has mostly been upgraded, but a section of 42 km between the Sandverhaar and Buchholzbrunn sidings east of Aus still needs to be rehabilitated. The rail network is thus not capable of carrying heavy traffic at this stage. Furthermore the number of railcars that can enter Lüderitz is limited due to the steep descent towards the town. With the envisioned manganese exports from the port, an increase in traffic, and specifically heavy vehicle traffic, can be expected. Increased imports and exports via the port will ultimately have to rely on a functioning heavy haul railway line and road.

Implications and Impacts

With increased export of mineral ore expected via the Port of Lüderitz the road and rail network to Lüderitz may be impacted. It is therefore imperative that TransNamib and Roads Authority be regarded as key stakeholders in the port operations and future planning.

5.8 CULTURAL, HERITAGE AND ARCHAEOLOGICAL ASPECTS

Lüderitz is one of the oldest towns in Namibia and therefore hosts a number of historically important buildings. Lüderitz developed around the port area and thus the historic centre of the town is also situated around the port. In terms of the rich culture and heritage of Lüderitz, the structure plan for Lüderitz (SPC, 2015) states:

A number of buildings have been declared National Monuments in Lüderitz and these include, among others, the Railway Station Building in Bahnhof Street, the German Lutheran Church in Kirch Street, the Deutsche Africa Bank Building and Krabbenhöft und Lampe Building in Bismarck Street.

Shark Island is a site of significant historical significance, as it was used from 1906 to 1907 as a concentration camp where Nama and OvaHerero captives were kept by the German colonial army. Shark Island was officially declared a National Heritage site on 15 February 2019 (Government Notice No 23 of 2019).

Photo 5-1 Krabbenhöft und Lampe building

Photo 5-2 Deutsche Africa Bank building

Implications and Impacts

The port itself does not contain any know artefacts or buildings of cultural, heritage or archaeological significance. It is however surrounded by such artefacts, buildings or places. Dust from the operations in the port is not likely to reach these artefacts, buildings or places due to the prevailing strong south-westerly winds and weak periodic north to north-westerly winds. The cumulative impact of trucks moving through the historic town centre, currently the only possible route to the port, will impact on the cultural and historically significant heritage areas of the town. A possibility of vibration and air pollution related damage to old and new buildings exist. While the transport of the ore falls outside of the scope of the EIA, it should be considered in a holistic approach by all parties involved in the project.

6 ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS

Namport operates within a regulatory and legal framework which can be described as being related to the protection, management and utilization of the environment and natural resources for sustainable development and/or intergenerational equity as well as to the protection of human rights. The following is a brief summary of the most important regulatory and legal aspects binding on the Port of Lüderitz.

Table 6-1 Namibian law applicable to the project

Law	Key Aspects
The Namibian Constitution	♦ Promotes the welfare of people ♦ Incorporates a high level of environmental protection ♦ Incorporates international agreements as part of Namibian law
Environmental Management Act Act No. 7 of 2007	♦ Defines the environment ♦ Promotes sustainable management of the environment and the use of natural resources ♦ Provides a process of assessment and control of activities with possible significant effects on the environment
Environmental Management Act Regulations Government Notice No. 28-30 of 2012	♦ Commencement of the Environmental Management Act ♦ Lists activities that requires an Environmental Clearance Certificate ♦ Provides Environmental Impact Assessment Regulations

Namibia Ports Authority Act Act No. 2 of 1994	♦ Provides for the establishment of the Namibian Ports Authority to undertake the management and control of ports ♦ Outlines the functions of the Namibian Ports Authority among which is the protection of the environment
Territorial Sea and Exclusive Economic Zone of Namibia Act Act No. 3 of 1990	♦ Determines and defines the territorial sea, internal waters, contiguous zone, exclusive economic zone and continental shelf of Namibia
Marine Resources Act Act No. 27 of 2000	♦ Provides for the conservation of the marine ecosystem and the responsible administration, conservation, protection and promotion of marine resources on a sustainable basis ♦ Under this act the following were determined: o Regulations relating to the exploitation of marine resources (2001) o Declaration of the Namibian Islands' Marine Protected Area: Marine Resources Act (2009) o Regulations relating to Namibian Islands' Marine Protected Area: Marine Resources Act, 2000 (2012)
Dumping At Sea Control Act Act No. 73 of 1980	♦ Provides for the control of dumping of substances in the sea ♦ Provides for permits to be issued to allow dumping at sea of scheduled substances
Petroleum Products and Energy Act Act No. 13 of 1990, Government Notice No. 45 of 1990	♦ Regulates petroleum industry ♦ Makes provision for impact assessment ♦ Petroleum Products Regulations (Government Notice No. 155 of 2000) ♦ Prescribes South African National Standards (SANS) or equivalents for construction, operation and decommissioning of petroleum facilities (refer to Government Notice No. 21 of 2002)
Prevention and Combating of Pollution of the Sea by Oil Act, 1981 (Act No. 6 of 1981)	♦ Provides for the prevention of pollution of the sea where oil is being or is likely to be discharged
Prevention and Combating of Pollution of the Sea by Oil Amendment Act (No. 24 of 1991)	♦ Amends the Prevention and Combating of Pollution of the Sea by Oil Act of 1981 to be more relevant to Namibia after independence
Aquaculture Act (2002)	♦ Provides for water quality monitoring to protect aquaculture activities
Marine Traffic Act Act No. 2 of 1981	♦ Regulates marine traffic in Namibia
Water Resources Management Act Act No. 11 of 2013	♦ Provides for management, protection, development, use and conservation of water resources ♦ Prevention of water pollution and assignment of liability
Atomic Energy and Radiation Protection Act Act No. 5 of 2005, Government Notice No. 50	♦ Provides for adequate protection of the environment and of people in current and future generations against the harmful effects of radiation by controlling and

of 2005	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	♦ 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	♦ 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.
National Heritage Act of Namibia Act No. 27 of 2004	♦ Provides for the protection and conservation of places and objects of heritage significance and the registration of such places and objects ♦ Defines as protected any remains of human habitation or occupation that are 50 or more years old found on or beneath the surface on land. ♦ Provides for reporting of heritage finds, issuing of permits, and archaeological impact assessments. ♦ Shark Island declared as a National Heritage site (Government Notice No 23 of 2019).
Local Authorities Act Act No. 23 of 1992	♦ Defines the powers, duties and functions of local authority councils
Regional Councils Act Act No. 22 of 1992	♦ Sets out the powers, duties, functions, rights and obligations of Regional Councils. ♦ Provides the legal basis for the drawing up of Regional Development Plans.
Public and Environmental Health Act Act No. 1 of 2015	♦ Provides a framework for a structured more uniform public and environmental health system, and for incidental matters ♦ The objects of this Act are to - o promotes public health and wellbeing; o prevents injuries, diseases and disabilities; o protects individuals and communities from public health risks; o encourages community participation in order to create a healthy o environment; and o provides for early detection of diseases and public health risks.
Labour Act	♦ Provides for Labour Law and the protection and safety of employees

Act No 11 of 2007	♦ Labour Act, 1992: Regulations relating to the health and safety of employees at work (Government Notice No. 156 of 1997) ♦ Provides for the availability of chemical safety data sheets (material safety data sheets or MSDS) to be available for all hazardous or dangerous goods ♦ Makes provision for regulations on the transport of hazardous substances (regulations not in force yet)
Atmospheric Pollution Prevention Ordinance Ordinance No. 11 of 1976	♦ Governs the control of noxious or offensive gases ♦ Prohibits scheduled process without a registration certificate in a controlled area ♦ Requires best practical means for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled process
Hazardous Substances Ordinance Ordinance No. 14 of 1974	♦ Applies to the manufacture, sale, use, disposal and dumping of hazardous substances as well as their import and export ♦ Aims to prevent hazardous substances from causing injury, ill-health or the death of human beings
Pollution Control and Waste Management Bill (draft document)	♦ Not in force yet ♦ Provides for prevention and control of pollution and waste ♦ Provides for procedures to be followed for licence applications
Integrated Coastal Zone Management Bill (2014)	♦ Aims at coastal management and give effect to Namibia's obligations in terms of international law regulating coastal management ♦ Not adopted yet
Draft Wetland Policy of 2003	♦ Considering the Second Lagoon, the Wetland Policy of 2003 is of importance and includes: o Protection and conservation of wetlands and ecosystems.
National Marine Pollution Contingency Plan of 2017	♦ Coordinated and integrated national system for dealing with oil and other spills in Namibian waters.

Table 6-2 Relevant multilateral environmental agreements for Namibia and the project

Agreement	Key Aspects
Benguela Current Convention of 2013	♦ The Convention is a formal treaty between the governments of Angola, Namibia and South Africa that sets out the countries' intention "to promote a coordinated regional approach to the long-term conservation, protection, rehabilitation, enhancement and sustainable use of the Benguela Current Large Marine Ecosystem, to provide economic, environmental and social benefits."
Convention on Biological Diversity (CBD)	♦ Primary goal is the conservation of biodiversity ♦ Prescribes the precautionary principle ♦ Parties to the convention are obliged to: ♦ Establish a network of protected areas;

	○ Create buffer areas adjacent to these protected areas using environmentally sound and ○ sustainable development practices; and ○ Rehabilitate degraded habitats and populations of species.
UN Convention for the Prevention of Marine Pollution from Land-based Sources	♦ Concerns itself with the protection of marine fauna and flora by preventing marine pollution from land-based sources. ♦ Contracted parties, are committed to take all possible steps to prevent pollution of the sea as well as the direct or indirect introduction of substances or energy by humans into the marine environment resulting in such adverse effects as harm to living resources and to marine ecosystems, hazards to human health, damage to services/ facilities or interference with other legitimate uses of the area.
International Convention on Oil Pollution Preparedness, Response and Cooperation of 1990	♦ International maritime convention establishing measures for dealing with marine oil pollution incidents nationally and in co-operation with other countries.
International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)	♦ Dealing with the prevention of pollution of the sea by oil, sewage and garbage from ships.
United Nations Convention on the Law of the Sea	♦ Namibia is obligated to protect and preserve the marine environment. ♦ Includes the prevention, reduction and control of pollution of the marine environment.
Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter (London Convention, 1972)	♦ Aims at controlling and preventing marine pollution and contains guidelines for dredged material known as the Dredged Material Assessment Framework (DMAF). ♦ Provides guidelines for dredging and disposal operations to minimize environmental damage
IMO Guidelines on Marine Security: International Ship and Port Facility ISPS Code	♦ Legislative framework for maritime security issues. ♦ Aimed at Government, Port Authorities and shipping companies.
IMO Biofouling Guidelines	♦ Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species
Abidjan Convention of 1981	♦ The Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern Africa Region ♦ Provides an overarching legal framework for all marine-related programmes in West, Central and Southern Africa.
Convention Concerning the Protection of the World's Cultural and Natural Heritage, 1972	♦ The objective is that effective and active measures are taken for the protection, conservation and presentation of the cultural and natural heritage.
Convention on the Protection of the Underwater Cultural Heritage, 2001	♦ Aimed at protecting and preserving the underwater cultural heritage. ♦ Underwater cultural heritage" means all traces of human existence having a cultural, historical or

		archaeological character which have been partially or totally under water, periodically or continuously, for at least 100 years such as: (i) sites, structures, buildings, artefacts and human remains, together with their archaeological and natural context; (ii) vessels, aircraft, other vehicles or any part thereof, their cargo or other contents, together with their archaeological and natural context; and (iii) objects of prehistoric character.
Stockholm Declaration on the Human Environment, Stockholm 1972.	♦	Recognizes the need for a common outlook and common principles to inspire and guide the people of the world in the preservation and enhancement of the human environment

7 STAKEHOLDER CONSULTATION

Consultation with stakeholders and the public formed an integral part of the environmental assessment processes. Although only an EMP was prepared in support of the 2019 ECC application, public participation in line with the requirements of the EMA was conducted. Identified stakeholders were invited via e-mail and a public meeting was advertised twice in two separate national newspapers. The public meeting was conducted in Lüderitz.

Views, comments and opinions expressed by I&APs attending the meeting were noted and incorporated into this report. A list of registered stakeholders and I&APs together with proof of the public consultation process as conducted in 2019 are presented in Appendix B and the minutes and attendance lists of the meeting are presented in Appendix C.

Through stakeholder communication and the public meetings it became evident that some of the major expectations and concerns regarding operations of the Port of Lüderitz are:

Positive:

- Jobs are created and contracts sustained through operations of the port and this helps alleviating unemployment and poverty.
- Options for economic diversification through for example the provision of support services for the port.

Negative:

- Deterioration of the marine environment through pollution e.g. mineral ore and chemical dust
- Increased traffic through town.
- Visual impact as a result of abandoned and neglected buildings at Diaz Point.
- Impact on the cultural and heritage value of Shark Island.

8 ENVIRONMENTAL MANAGEMENT PLAN

The purpose of this section is to list the most pertinent environmental impacts that are expected from the operational and possible minor construction and maintenance activities of the Port of Lüderitz. The EMP provides management options to ensure possible negative impacts 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 of / in the port. This section of the report can act as a stand-alone document. All Namport personnel taking part in the operations of the port should be made aware of the contents in this section, so as to plan the operations accordingly and in an environmentally sound manner. In addition, respective tenant EMPs, where required, should take into consideration the conditions stipulated in the overarching Namport EMP and these should be incorporated into lease contracts.

The scope of the EMP are:

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

Various potential and definite impacts will emanate from the construction and operational phases. The majority of these impacts can be mitigated or prevented. Due to the nature of the surrounding areas, cumulative impacts are possible and include surface water contamination, noise and traffic impacts.

8.1 PLANNING

During all phases of planning, operations, construction/maintenance and possible decommissioning of the port, it is the responsibility of Namport to ensure they, and their tenants, remain compliant with all legal requirements. Namport 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 operations, maintenance/construction and possible decommissioning of the port or components of the port:

- Ensure that all necessary permits from the various ministries, local authorities and any other bodies that govern the operations and construction activities in the port are obtained and remain valid throughout project execution. These include permits from the Ministry of Mines and Energy for fuel handling and storage and effluent disposal permits from the Ministry of Agriculture, Water and Land Reform.
- Ensure all appointed contractors, employees and tenants enter into an agreement which includes the need to adhere to the stipulations within the EMP. Ensure that the contents of the EMP are understood by the contractors, sub-contractors, employees, tenants and all personnel present or who will be present on site.
- Make provisions to have an environmental management division to implement the EMP and oversee occupational health and safety as well as general environmental related compliance. Namport's environmental management hierarchy can be seen in Figure 8-1.
- Have emergency plans, equipment and personnel on site, where applicable, to deal with all potential emergencies. Documents and planning related to this include:
  - EMP / risk management / mitigation / Emergency Response Plan and HSE Manuals;
  - Adequate protection and indemnity insurance cover for incidents;
  - Compliance with the provisions of all relevant safety standards;
  - Procedures, equipment and materials required for emergencies, inclusive of firefighting and oil spill contingency plans;
- If one has not already been established, establish and maintain a fund for future ecological restoration of the project site should a spill occur or project activities cease and the site is decommissioned and environmental restoration or pollution remediation is required.
- Establish a reporting system to report on aspects of construction activities, operations and decommissioning as outlined in the EMP.
- Submit monitoring reports bi-annually, as per the requirements of the Department of Environmental Affairs, to ensure compliance and future environmental clearance certificate renewal.
- Regularly review and update the EMP and related documentation to include all new developments or projects where applicable.
- Appoint a specialist environmental consultant to update the EMP and apply for renewal of the environmental clearance certificate prior to expiry.

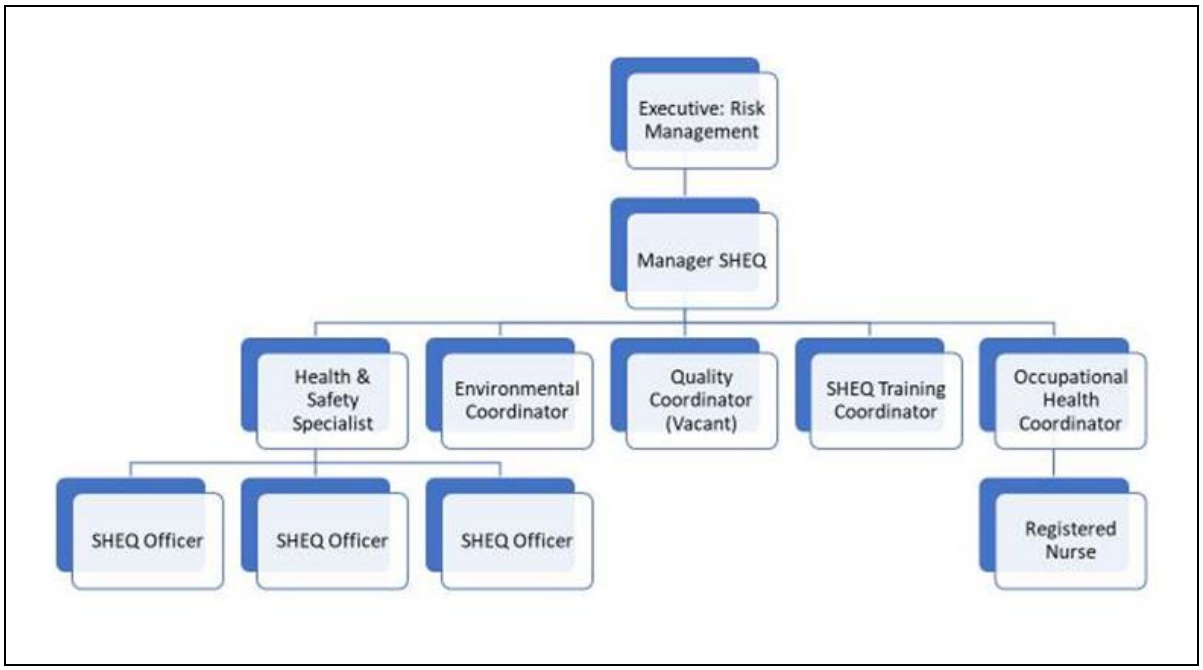


Figure 8-1 Environmental management hierarchy of Namport

8.2 EMPLOYMENT

Skilled and professional labour are required for the operations of the port. Employment should preferably be sourced locally while skilled labour/contractors should be sourced from elsewhere if not locally available.

Desired outcome: 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.
- Local businesses and industries should be supported.

Responsible Body:

- Proponent
- Contractors
- Tenants

Data Sources and Monitoring:

- Namport Operating and System Procedures
- Bi-annual summary report based on employee records.

8.3 SKILLS, TECHNOLOGY AND DEVELOPMENT

The nature of port operations is such that training of the workforce is essential. Skills are transferred to an unskilled workforce for general tasks. The technology required for port related operations continuously improve and new technological developments are introduced. Development of people and technology are key to the economic development of the town and region.

Desired outcome: To see an increase in skills levels of local Namibians, as well as development and technological advancements in the port related industry.

Actions

Mitigation:

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

Responsible Body:

- Proponent
- Tenants
- Contractors

Data Sources and Monitoring:

- Namport Operating and System Procedures
- Record should be kept of all assessments of personnel and requirements for training that are identified.
- All training provided must be recorded and kept on employee files.
- Ensure that all training is certified, or managerial references provided (proof provided to the employees), inclusive of training attendance, completion and implementation.
- Bi-annual summary report based on all training related records kept.

8.4 REVENUE GENERATION

The port supports the fishing and mining industry, two of the major national revenue sources for Lüderitz and Namibia. Export and import of products via the port as well as other port services such as stevedoring further contributes to local, regional and national income.

Desired outcome: Contribution to National Treasury through taxes, as well as, the local and regional economy.

Actions

Mitigation:

- The port should be promoted as part of the vision of Namibia becoming a logistics hub.
- Local businesses and industries should be supported as far as is practically possible.
- Sound financial accounting processes and adherence to all laws pertaining to the payment of revenue.

Responsible Body:

- Proponent
- Tenants
- Contractors

Data Sources and Monitoring:

- Namport Operating and System Procedures
- Financial related legislation governed by the Ministry of Finance.
- Bi-annual summary report based on contributions towards the national economy.

8.5 REVENUE GENERATION

The port supports the fishing and mining industry, two of the major national revenue sources for Lüderitz and Namibia. The Port of Lüderitz also acts as a gateway for international trade for Namibia and the neighbouring landlocked countries. Export and import of products via the port as well as other port services such as stevedoring further contributes to local, regional and national income.

Desired outcome: Contribution to National Treasury through taxes, as well as, the local and regional economy.

Actions

Mitigation:

- The port should be promoted as part of the vision of Namibia in becoming a logistics hub.
- Local businesses and industries should be supported as far as is practically possible.
- Sound financial accounting processes and adherence to all laws pertaining to the payment of revenue.

Responsible Body:

- Proponent
- Tenants
- Contractors

Data Sources and Monitoring:

- Namport Operating and System Procedures.
- Financial related legislation governed by the Ministry of Finance.
- Bi-annual summary report based on contributions towards the national economy.

8.6 DEMOGRAPHIC PROFILE AND COMMUNITY HEALTH

Developments attract job seekers and this may lead to in-migration and growth in informal settlements. The various components of the port are reliant on a relatively large labour force during operational and construction phases. Being an existing port, a change in the demographic profile of the local community is not likely in the immediate future. Community health impacts may include factors such as communicable disease like HIV/AIDS and alcoholism/drug abuse. This is typically associated with trucking and shipping (transport of products to markets). The presence of foreign people in the area may potentially increase the risk of criminal and socially/culturally deviant behaviour.

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

Actions:

Prevention:

- Employ only local people from the area, deviations from this practice should be justified appropriately.
- Provide suitable housing for employees of the port, especially when employing non-local staff.
- Adhere to all municipal by-laws relating to environmental health which includes but is not limited to sanitation requirements.

Mitigation:

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

Responsible Body:

- Proponent
- Tenants

Data Sources and Monitoring:

- Namport Operating and System Procedures
- Port inspection sheets and checklists 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.

8.7 TRAFFIC

An increase in traffic to and from the port may increase congestion in the town and port, increase the risk of accidents, result in deterioration of road surfaces, and cause vibration related damage to historic buildings. This may also negatively impact on the tourism industry. Rail transport to and from the port may blocked road – rail intersections. Train and vehicle accidents may also occur.

The entrance to the Port of Lüderitz is situated in Hafen Street. Due to the way in which the town developed around the port, access to the port is only possible via the centre of town. This presents problems in terms of traffic and its associated impacts like noise, traffic congestion and potential accidents. The most direct route through Lüderitz to the port follows the B4 Main Road and then turns right into Bismarck Street all the way to the entrance of the port. Alternative routes for large trucks are only possible via slight deviations from this route and is presented in Figure 8-2. All three routes have two four way stop intersections, as well as one traffic circle, and pass through sensitive areas with buildings of heritage value. Alternative 2 however, bypasses a section of the small business district in Bismarck Street.

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

Actions

Prevention:

- In cooperation with the local authority, erect clear signage regarding restricted areas and roads, access and exit points to the port, speed limits, traffic rules, railway crossings, etc.
- New and existing operations in the port, which results in high traffic volumes, must be assessed and suitable preventative and mitigation measures explored. This include rail transport impacts.

Mitigation:

- Trucks should not be allowed to obstruct any traffic or access points to any other businesses and facilities on the routes through Lüderitz.
- If any extraordinary traffic impacts are expected, traffic management should be performed in conjunction with local traffic department, to prevent these.
- Should hazardous cargo be transported cognisance should be taken of Namport's operating procedures for Handling and Storage of Dangerous Cargo. This will involve planning of the route as well as arrangements with Town Council and the traffic department of the Namibian Police.
- The placement of signs to warn and direct traffic will mitigate traffic impacts.

Responsible Body:

- Ministry of Works and Transport
- Proponent
- Tenants
- Contractors

Data Sources and Monitoring:

- Namport Operating and System Procedures
- Transport Regulations
- 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 actions taken.

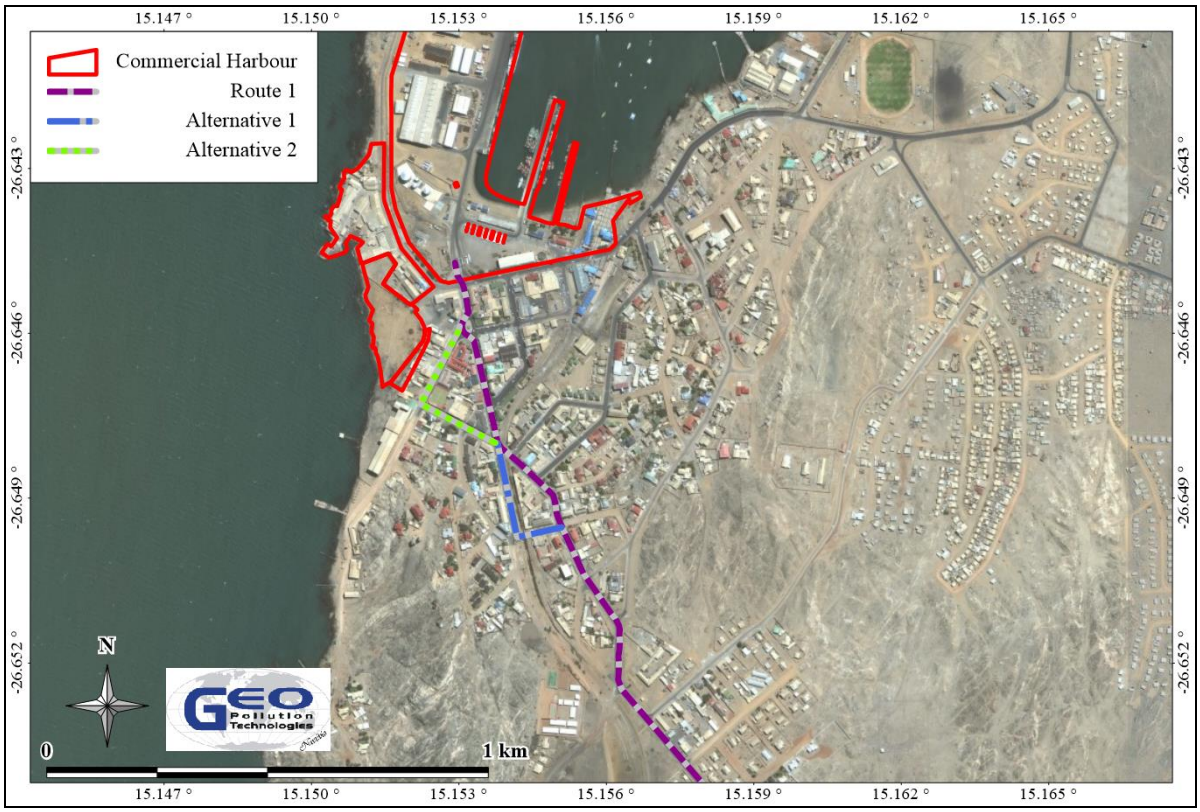


Figure 8-2 Access route and road alternatives

8.8 HEALTH, SAFETY AND SECURITY

Activities associated with the port is reliant on human labour and therefore exposes them to health and safety risks. Injuries can occur due to incorrect lifting of heavy equipment and materials, falling from heights, stacked items tipping over, getting caught in moving parts of machines, accidents involving forklifts and vehicles, and exposure to hot and cold temperatures. Some chemicals handled and stored on site are hazardous with inherent health risks to personnel on site when inhalation, accidental ingestion, eye or skin contact occurs. Security risks are related to unauthorized entry, theft and sabotage.

Asbestos may be present in old buildings. These present a health risk, especially during demolition.

Mining ore that is transported via the port may contain materials that have inherent health risks. This may include for example asbestos. Ore may also have radioactive properties.

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.
- Consider the World Health Organisation: International Health Regulations (2005) with specific reference to Section 4 (no. 3): "Strengthen public health security in travel and transport".
- Strict security control at the entrance gate including alcohol testing and access permit checks.
- For any mining ore that will be transported via the port, the health related risks should be assessed, including whether asbestos is present or whether the ore has radioactive properties. Liaison with the Ministry of Health and Social Services and the National Radiation Protection Authority is essential.
- Clearly label dangerous and restricted areas as well as dangerous equipment and products.
- Clearly demarcate areas where access is prohibited without special permission or areas where specific personal protective equipment (PPE) is required.
- Provide all employees with required and adequate PPE where needed.
- Equipment and products on site must be placed in a way that does not encourage criminal activities (e.g. theft).
- Ensure that all personnel receive adequate training on operation of equipment and handling of hazardous substances.
- Always follow safe stacking and storage methods.
- Implementation of maintenance register for all equipment, fuel and hazardous substance storage areas.
- Lockout / tagout procedures should be followed where applicable.
- Compile and maintain hazard analysis and critical control points (HACCP) program for all activities.

Mitigation:

- Selected personnel should be trained in first aid and a first aid kit must be available on site. The contact details of all emergency services must be readily available.
- Implement and maintain an integrated health and safety management system, to act as a monitoring and mitigating tool, which includes: colour coding of areas, operational, safe work and medical procedures, permits to work, emergency response plans, housekeeping rules, MSDS's and signage requirements (PPE, flammable etc.).
- Security procedures and proper security measures must be in place to protect workers and clients.
- Strict security that prevents unauthorised entry into restricted areas.
- Asbestos structures, if any, must be replaced or made inert. All asbestos demolitions must be performed by accredited contractors.

Responsible Body:

- Proponent
- Tenants
- Contractors

Data Sources and Monitoring:

- Namport Operating and System Procedures
- Applicable legislation and regulations (e.g. health act, labour act, atomic energy act regulations, etc., World Health Organisation (WHO) guidelines)
- Any incidents must be recorded with action taken to prevent future occurrences.
- A report should be compiled every 6 months of all incidents reported. The report should contain dates when training was conducted and when safety equipment and structures were inspected and maintained.

8.9 FIRE

Operational and construction activities may increase the risk of the occurrence of fires. Fuel stored in the bulk fuel storage facility, in tanker ships and in vessels presents a fire risk. Similarly does chemicals imported and exported in bulk via the port such as sulphur. Other flammable chemicals may also be on site in small quantities.

Lüderitz does not have an official firefighting department with permanent staff. The firefighting crew is made up of volunteer residents of the town. The first line of defence against a fire will therefore have to be Namport crew and tenants, as there may be a significant delay in the response time of the firefighting department.

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

Actions:

Prevention:

- Ensure all fuel and chemicals are handled, transported and stored according to MSDS instructions.
- Incompatible chemicals must be segregated at all times.
- Maintain regular site, mechanical and electrical inspections and maintenance.
- Clean all spills / leaks without delay.
- Follow SANS 10089 standards for operations and maintenance of fuel handling and storage.

Mitigation:

- A holistic fire protection and prevention plan is needed. This plan must include an emergency response plan, firefighting plan and spill recovery plan and should be developed in conjunction with all tenants.
- All tenants must submit, to Namport, emergency response plans for firefighting procedures related to the products they handle. These should be concise, to the point and immediately accessible and should outline the firefighting methods relevant to the specific products that may be on fire. This will enable Namport and the town's firefighting department to respond to a fire with the correct firefighting techniques and materials. This is crucial since incompatible materials may aggravate fires and lead to explosions. Where toxic gasses may be generated the appropriate PPE must be recommended.
- Firefighting methods and products must be compatible with the type of fire (i.e. electrical, hydrocarbon, chemical, etc.).
- For fuel storage and handling, special notice 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).
- Maintain firefighting equipment, good housekeeping and personnel training (firefighting, fire prevention and responsible housekeeping practices).

Responsible Body:

- Municipal firefighting department
- Proponent
- Tenant
- Contractors

Data Sources and Monitoring:

- Namport Operating and System Procedures
- A register of all fire related 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.

8.10 AIR QUALITY AND DUST

In the Port of Lüderitz, the major contributor to deteriorated air quality is windblown dust generated during chemical (e.g. sulphur) and mining ore handling. This is aggravated during periods of strong wind (41 to 61 km/h) which is a frequent occurrence in Lüderitz. Dust not only poses health impacts to workers and nearby residents, but can also impact on the fishing industry by contaminating fish from fishing vessels during offloading, and cause deterioration of seawater quality. Deteriorated seawater quality can in turn impact on marine ecology as well as the mariculture industry.

Desired Outcome: To limit generation of airborne dust and thus prevent health impacts, contamination of fish from fishing vessels, and deterioration of the marine environment.

Actions

Prevention:

- Implement dust suppression methods where applicable (e.g. wetting with water, covering loads, netting, etc.) Care should however be taken to limit the volume of water used for dust suppression.
- All bulk cargo on trucks or trains entering and exiting the port must be covered to contain dust.
- Any loading / offloading activities must cease if dust becomes airborne. Loading / offloading can continue after mitigation measures to reduce dust have been implemented.

Mitigation:

- All staff working in dust producing environments must wear dust masks and related PPE.
- Bulk cargo vessels must be loaded / offloaded downwind from fishing vessels.
- A complaints register should be kept for any air quality related issues and mitigation steps taken to address complaints where necessary.

Responsible Body:

- Proponent
- Tenants
- Contractors

Data Sources and Monitoring:

- Namport Operating and System Procedures
- Any complaints received regarding dust or other air quality impacts should be recorded with notes on action taken.
- Real time wind direction and velocity monitoring which can be linked to air quality monitoring should be initiated.
- Dust (air quality) monitoring must be conducted to determine the extent and source of dust pollution.
- All information and reporting to be included in a bi-annual report.

8.11 NOISE

The site is situated in an industrial area where no limitations on the operating hours exist. Noise pollution will exist due to heavy vehicles accessing the site for delivery and collection of products, the use of forklifts (audible warning signs), loading and offloading of ships, construction activities, etc. Noise may impact workers and personnel on site as well as nearby residential areas and tourist establishments.

Offshore construction activities like pile driving for jetty construction may impact on marine mammals if any are nearby.

Desired Outcome: To prevent any nuisance to neighbours, hearing loss in workers and negative impacts on marine mammals.

Actions

Prevention:

- Follow Labour Act Regulations - Noise Regulations (Regulation 197), and / or WHO guidelines on maximum noise levels (Guidelines for Community Noise, 1999), to prevent hearing impairment for workers on site and a nuisance for nearby residential areas / neighbours.
- Minimize or prevent noise producing activities and plan to restrict these to daytime as far as practically possible.
- All machinery must be regularly serviced to ensure minimal noise production.
- The use of low frequency white noise or flashing lights should be considered instead of audible high frequency warning signals for moving forklifts or trucks.

Mitigation:

- Erect temporary or permanent noise barriers / sound baffles, should the need arise.
- Placement of noise producing equipment, e.g. compressors, in such a way that noise is directed away from receptors and / or are attenuated.
- Hearing protectors as standard PPE for workers in situations with elevated noise levels.
- Limit construction activities to daylight hours.
- Obtain specialist input on marine mammal impacts and mitigation thereof when underwater noise will be generated (e.g. pile driving). This may include choosing of methods or equipment that with the least noise generating characteristics.

Responsible Body:

- Proponent
- Tenants
- Contractors

Data Sources and Monitoring:

- Namport Operating and System Procedures
- Labour Act Regulations - Noise Regulations (Regulation 197)
- WHO Guidelines
- Records to be kept where noise surveys or medical examinations (of labourers) are required as per the Labour Act.
- Maintain a complaints register.
- Bi-annual report on complaints and actions taken to address complaints and prevent future occurrences.

8.12 WASTE PRODUCTION

Various waste streams are produced in the port. Waste may include hazardous waste (fuels, oils, hydraulic fluids, chemicals, batteries, contaminated soil or water such as bilge water, etc.), non-hazardous wastes (metal, plastic, paper, glass and other forms of domestic waste, etc.), construction wastes (building rubble), sewage and effluents. Hazardous waste poses a threat to workers on site and to the marine environment. Plastics and other waste entering the ocean and environment may harm marine animals and result in a visual impact that may affect the tourist industry. Although no fish processing takes place within the port, fish offloading occurs. Some fish related waste may be produced.

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 (bins, drums and / or bags) are available and that these are clearly labelled to allow for segregation of wastes into different classes.
- Education of personnel is paramount to create awareness for the proper handling and disposal of waste.
- Ensure waste cannot be blown away by wind.
- Prevent scavenging (human and non-human) at waste storage sites.
- Contaminated bilge water, wash water, etc. should be treated as potentially hazardous waste that must be disposed of at appropriately classified facilities.
- Ships at anchor in the port area must be monitored for any illegal dumping of wastes.
- Waste in the port area, in the harbour water, and on the coastline within port limits must be regularly removed and disposed of.
- No waste streams may be directed into the ocean without a disposal permit and then only under conditions imposed by the permit conditions.

Mitigation:

- Liaise with the municipality or private contractors regarding handling of different waste streams.
- 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) that are collected by authorised and licenced private waste collection and handling companies.
- See the MSDS available from suppliers for disposal of contaminated products and empty containers.
- Waste water and sewage must be disposed of according to their relevant permit requirements.

Responsible Body:

- Proponent
- Tenants
- Contractors

Data Sources and Monitoring:

- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter
- Namport Operating and System Procedures
- Town Council and / or Ministry of Agriculture Water Affairs and Forestry permit requirements for sewage and effluents.
- Conduct monthly sampling and analysis of both industrial effluents released into the ocean (e.g. fish factories) and sewage. This is to ensure compliance to the Model Sewerage and Drainage Regulations or relevant effluent disposal permits issued by the Town Council or Ministry of Agriculture Water Affairs and Forestry. Should

compliance be ascertained, the monitoring regime can be adapted to bi-annually. Where non-compliance is found measures should be implemented / enforced to rectify the situation.

- Copies of valid permits of authorised hazardous waste collection and handling companies should be kept on file.
- A register of hazardous waste disposal activities should be kept (e.g. disposal certificates). 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.

8.13 GROUNDWATER, SURFACE WATER AND SOIL CONTAMINATION

Operations in the port entail the storage and handling of various potential pollutants that may present a contamination risk of the environment. These include hydrocarbon and synthetic fuels, oils and hydraulic fluids, chemicals, mineral ores, waste products not contained, effluent discharges, etc.

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

Actions

Prevention:

- Spill control structures and procedures related to fuel installations including the bulk fuel storage facility must be in place according to SANS 10089 standards or better.
- All fuel installations and tanks must conform to relevant SANS standards.
- Regular inspection and maintenance of pipelines, sumps, separators, vehicles, forklifts, cranes, etc. should take place.
- Any leaks detected must be repaired without delay and any maintenance that must occur within the port area must be performed on spill containment slabs or over drip trays.
- Hazardous waste and contaminated water and soil must be disposed of at an appropriately classified facility or by approved contractors. Hazardous waste disposal certificates must be kept on file.
- Warehouses for mineral ore and chemical storage must remain closed with adequate dust suppression systems to limit or prevent the formation of windblown dust.
- Any mineral ore and / or chemicals trapped in tyres must be cleaned prior to vehicles leaving warehouses or bulk storage areas of these products. The use of rumble grids and physical inspection of tyres should be implemented.
- For bulk bags the stacking heights must be observed to prevent bag damage and product spillage.

Mitigation:

- Any fuel spillage of more than 200 litre must be reported to the Ministry of Mines and Energy.
- Emergency response plans and spill contingency plans must be in place and include all fuels, chemicals or hazardous substances being handled. In the case of tenants, copies of these documents must be submitted to Namport.
- Spill containment equipment such as booms and absorbents must be readily accessible. Training in the use of these are paramount.
- During bulk fuel offloading, temporary booms must be installed around the offloading area to prevent the spread of fuel, should a spill or leak occur.
- All chemicals and fuels must be handled according to their respective MSDS instructions.
- For any chemicals that may form part of effluent to be discharged into the ocean, environmental effects must be considered and alternative chemicals investigated if needed. Effluent must meet standards as per the effluent discharge permits.
- Any mineral ore, chemical dust (e.g. sulphur), hydrocarbon spills or any other hazardous substance spill on the quay area must be cleaned and disposed of to prevent it from entering the ocean either by wind or water runoff.
- Use of reputable and well trained contractors are essential.

Responsible Body:

- Proponent
- Tenants
- Contractors

Data Sources and Monitoring:

- Namport Operating and System Procedures
- Petroleum Products Act regulations, SANS, MARPOL, National Marine Pollution Contingency Plan, MSDS, and related legislation.

- Conduct monthly sampling and analysis of both industrial effluents released into the ocean (e.g. fish factories) and sewage. This is to ensure compliance to the Model Sewerage and Drainage Regulations or relevant effluent disposal permits issued by the Town Council or Ministry of Agriculture Water Affairs and Forestry. Should compliance be ascertained, the monitoring regime can be adapted to bi-annually. Where non-compliance is found measures should be implemented / enforced to rectify the situation.
- A report should be compiled bi-annually of all spills or leakages reported and any monitoring results. 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 if available) with post remediation data (e.g. soil/groundwater hydrocarbon concentrations) and a copy of documentation in which the spill was reported to Ministry of Mines and Energy (where required for hydrocarbon spills).

8.14 ECOLOGICAL IMPACTS

Being in an urban environment, ecological impacts from the port would mostly be limited to the marine environment. Impacts include deterioration of water and sediment quality as a result of pollutants, introduction of alien species through ballast water or biofouling on ships' hulls, mammal strikes by ships, underwater noise and potential habitat loss during additional construction events.

On land, birds flying at night (e.g. flamingos) can get disorientated by bright lighting and this can result in bird strikes with manmade structures.

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

Actions.

Mitigation:

- Report any extraordinary fauna sightings to the Ministry of Environment, Forestry and Tourism and / or Ministry of Fisheries and Marine Resources.
- Mitigation measures related to waste handling, air quality and the prevention of groundwater, surface water and soil contamination should limit ecosystem and biodiversity impacts.
- Ensure waste cannot be blown away by wind.
- The establishment of habitats and nesting sites for birds in the port area must be prevented where possible.
- Namport to enforce ballast water exchanges by ships at required distances from the coast to prevent alien species introduction.
- No hull cleaning of foreign vessels that may contain alien species may take place inside the water in the port.
- Lights used at the site should be directed downwards to the working surfaces and only be switched on when and where necessary.

Responsible Body:

- Proponent
- Tenants
- Contractors
- Shipping lines

Data Sources and Monitoring:

- Namport Operating and System Procedures
- MARPOL, IMO and related legislation
- Ships logs on ballast water exchanges
- All information and reporting to be included in a bi-annual report.

8.15 MARICULTURE IMPACTS

Deterioration of water and sediment quality as a result of pollutants may impact the mariculture industry. Many pollutants may through bioaccumulation and / or biomagnification increase in the flesh of molluscs like abalone and oysters. These include heavy metals like lead and cadmium, which can result in health impacts in consumers of the products, and bans on the export of the mariculture products to international markets. Significant pollution by chemicals like sulphur may reach mariculture areas and can have detrimental effects resulting in financial losses.

Desired Outcome: To avoid pollution of the marine environment and subsequent impacts on the mariculture industry.

Actions.

Mitigation:

- Mitigation measures related to waste handling, air quality and the prevention of water contamination should limit marine and thus mariculture impacts.
- Installation/Implementation of a warning system for mariculture farms to notify them of any spills or pollution events that occurs in port limits

Responsible Body:

- Proponent
- Tenants
- Contractors

Data Sources and Monitoring:

- Namport Operating and System Procedures
- MARPOL, IMO and related legislation
- All information and reporting to be included in a bi-annual report.

8.16 VISUAL IMPACT

This is an impact that not only affects the aesthetic appearance, but also the integrity of the port and all infrastructure. This includes all port related infrastructure and properties, like for example the infrastructure at Diaz Point, an area popular with tourists.

Desired Outcome: To minimise negative aesthetic impacts associated with the port and all infrastructure.

Actions

Prevention:

- Regular waste collection and disposal, good housekeeping and routine maintenance on infrastructure will ensure a low visual impact is maintained.
- Ships at anchor in the port area must be monitored for any illegal dumping of waste that may have a visual impact.

Mitigation:

- Routine maintenance on infrastructure and buildings will ensure low visual impact as well as that the longevity of structures are maximised.
- Waste in the port area and on the coastline must be regularly removed.

Responsible Body:

- Proponent
- Tenants
- Contractors

Data Sources and Monitoring:

- Namport Operating and System Procedures
- A report should be compiled every 6 months of all complaints received and actions taken.

8.17 IMPACTS ON UTILITIES AND INFRASTRUCTURE

Any damage caused to existing infrastructure and services like water or electricity where present.

Desired Outcome: No impact on utilities and infrastructure.

Actions

Prevention:

- Appointing qualified and reputable contractors is essential.
- The contractor must determine exactly where services amenities and pipelines are situated before construction / maintenance commences (utility clearance e.g. ground penetrating radar surveys).
- Liaison with the municipality and suppliers of services is essential.

Mitigation:

- Emergency procedures available on file.

Responsible Body:

- Proponent
- Tenants
- Contractors

Data Sources and Monitoring:

- Namport Operating and System Procedures
- Drawings indicating where all linear infrastructure, reticulation, etc. is present throughout the port area.
- A report should be compiled every 6 months of all incidents and actions taken.

8.18 SEABED SCOURING AND MAINTENANCE OF WATER DEPTH

Through sedimentation/siltation the entrance channel and areas adjoining the quay and jetties will become shallower with time. This poses a risk to vessels as it can lead to vessel grounding. Ships with deeper drafts are more at risk.

In addition scouring of the seabed can be caused by vessel propellers. This is typically more pronounced adjacent to quay walls.

Desired Outcome: Water depth maintained at safe vessel manoeuvring depths.

Actions

Prevention:

- Scour protection should be installed where necessary to protect the seabed from scouring and to prevent siltation of adjacent berthing areas.
- Dredging activities must comply with the capital and maintenance dredging EIA and EMPs of Namport.
- Regular water depth inspections / surveys.

Mitigation:

- Emergency procedures available on file.
- Regular maintenance dredging to be performed when necessary.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Namport Operating and System Procedures
- A report should be compiled of all surveying data and actions taken.

8.19 IMPACTS ON SERVICES

Expansion of port operations has the potential to place additional pressure on the supply of potable water and electricity as well as the provision of services by the authorities (e.g. waste removal, sewage handling and transport infrastructure).

Desired Outcome: No water and electricity shortages or interruptions. Regular and efficient supply of services. Road and rail networks suitable to handle traffic generated.

Actions

Prevention:

- Regular and pre-emptive communication and updates provided to the suppliers of services to ensure they plan for, and upgrade where necessary, for additional pressure expected from port operations.
- Investigating alternative sources, modes of transport, disposal options, etc., should it become necessary (e.g. desalination plants and renewable energy).

Mitigation:

- Water and electricity saving strategies to be employed at all times (even if shortages are not expected).

Responsible Body:

- Proponent
- Tenants
- Contractors

Data Sources and Monitoring:

- Various national and local master plans and structure plans.
- Maintain a database of water and electricity use, waste production, transport figures, etc. (these will also guide future planning).
- Annual reporting.

8.20 VESSEL NAVIGATION

Accurate navigation of ships are crucial to prevent accidents and ships running aground.

Desired Outcome: No accidents and damage to vessels and infrastructure.

Actions

Prevention:

- All navigational aids such as leading lights, lighthouses, buoys, etc. to be in place, maintained and in working order.
- Maintain communication between port control and all seagoing traffic.
- Suitably qualified skippers and crew.

Mitigation:

- Emergency procedures available on file.
- Installation of a VTS (Vessel Tracking System).
- In-situ weather/wave monitoring.

Responsible Body:

- Proponent
- Tenants
- Contractors

Data Sources and Monitoring:

- Namport Operating and System Procedures
- IMO Guidelines on Marine Security
- A report should be compiled every 6 months of all incidents and actions taken.

8.21 HERITAGE

Protection of cultural resources falls under the National Heritage Act (Act 27 of 2004) and the National Monuments Act No 28 of 1969 as amended until 1979 - Ministry of Youth, National Service, Sport and Culture. Construction activities may lead to the discovery / accidental destruction of archaeological or culturally important sites. This includes shipwrecks that may be present within port limits.

Being surrounded by historic buildings, any activities in the port and transport activities through town, that is expected to cause significant vibrations, must be assessed by a specialist prior to onset of the activity.

Desired Outcome: Prevent the disturbance of any site or object of national heritage or archaeologically importance.

Actions

Prevention:

- Appoint reputable contractors.
- If any archaeological or culturally important sites are expected within areas where construction activities will occur, a survey of the site should be performed prior to construction.

Mitigation:

- If such a site or any other archaeologically important artefact is found during the development phase any work in that area must be halted and the relevant authorities must be informed.
- If human remains or burial sites are uncovered, the matter has to be immediately reported to the nearest Namibian Police Office. No work may continue at the site until the relevant authority has issued permission to do so. Secondly, the National Monuments Council dealing with heritage should be informed.
- Construction may only continue at that location once permission has been granted.
- For vibration impacts on old buildings a specialist consultant must advise on potential impacts and mitigation measures.

Responsible Body:

- Proponent
- Tenants
- Contractors

Data Sources and Monitoring:

- Lüderitz Structure Plan
- National Heritage Act and National Monuments Act
- Record of any discoveries and proof of notifications to authorities on file.
- Specialist reports
- All information and reporting to be included in a final report

8.22 CUMULATIVE IMPACT

Cumulative impacts are mostly related to the operations of the various port tenants and the fishing industry. As the port is optimized and promoted as avenue for export of mineral ore and agricultural products impacts can be expected to increase. This includes traffic, noise and possible pollution of the environment. Also, additional pressure on services provision will realise.

Desired Outcome: To minimise cumulative impacts associated with the port operations.

Actions

Mitigation:

- It is recommended that Namport and all industries in the area, utilising seawater and discharging effluent into the ocean, implement a joint monitoring program to ensure the water quality of the harbour does not deteriorate. The same holds for air quality (dust) and noise monitoring where required.
- Regular planning and communication with suppliers of services and updating of master plans are essential.
- Reviewing biannual and annual reports for any new or re-occurring impacts or problems would aid in identifying other cumulative impacts and help in planning if the existing mitigations are insufficient.

Responsible Body:

- Proponent
- Tenants
- Contractors
- Fishing industry
- Authorities (Town Council, Roads Authority, NamWater, NamPower, TransNamib, etc.

Data Sources and Monitoring:

- Namport Operating and System Procedures
- Master plans and annual reports
- Monitoring reports
- Annual summary report based on all other impacts must be created to give an overall assessment of the impact of the port and its tenants.

9 LEGAL REGISTER

Table 9-1 presents an overview of the specific legal documents, as discussed in section 5.8, and their link to the various impacts. It should be noted that the various acts may have regulations and various amendments that must be taken into consideration.

Table 9-1 Legal register and applicability to impacts

	General (All Impacts)	Employment	Skills, Technology and Development	Revenue Generation	Demographic Profile and Community Health	Traffic	Health, Safety and Security	Fire	Air Quality and Dust	Noise	Waste Production	Groundwater, Surface Water and Soil Contamination	Ecological Impacts	Mariculture Impacts	Visual Impact	Impacts on Utilities and Infrastructure	Seabed Scouring and Maintenance of Water Depth	Impacts on Services	Vessel Navigation	Heritage
The Namibian Constitution	x																			
Environmental Management Act	x																			
Namibia Ports Authority Act	x																			
Territorial Sea and Exclusive Economic Zone of Namibia	x																			
Marine Resources Act											x	x	x							
Dumping At Sea Control Act											x	x	x							
Petroleum Products and Energy Act							x	x	x		x	x	x							
Prevention and Combating of Pollution of the Sea by Oil Act											x	x	x							
Aquaculture Act														x						
Marine Traffic Act							x				x	x	x						x	
The Water Act												x	x	x				x		
Water Resources Management Act												x	x	x				x		
Atomic Energy and Radiation Protection Act							x													
Road Traffic and Transport Act						x	x									x				
National Heritage Act of Namibia									x						x	x				x

	General (All Impacts)	Employment	Skills, Technology and Development	Revenue Generation	Demographic Profile and Community Health	Traffic	Health, Safety and Security	Fire	Air Quality and Dust	Noise	Waste Production	Groundwater, Surface Water and Soil Contamination	Ecological Impacts	Mariculture Impacts	Visual Impact	Impacts on Utilities and Infrastructure	Seabed Scouring and Maintenance of Water Depth	Impacts on Services	Vessel Navigation	Heritage
The National Monuments Act of Namibia									x						x	x				x
Local Authorities Act	x																			
Regional Councils Act	x																			
Public Health Act					x		x		x	x										
Public and Environmental Health Act					x		x		x	x										
Labour Act		x	x				x													
Atmospheric Pollution Prevention Ordinance							x		x											
Hazardous Substances Ordinance							x		x		x	x	x	x						
Pollution Control and Waste Management Bill (draft document)											x	x	x	x	x					
Integrated Coastal Zone Management Bill													x	x						
Draft Wetland Policy													x	x						
National Marine Pollution Contingency Plan											x	x	x	x						
Benguela Current Convention				x									x							
Convention on Biological Diversity													x							
UN Convention for the Prevention of Marine Pollution from Land-based Sources											x	x	x							
International Convention on Oil Pollution Preparedness, Response and Cooperation											x	x	x							
International Convention for the Prevention of Pollution from Ships (MARPOL)											x	x	x							
United Nations Convention on the Law of the Sea													x						x	

	General (All Impacts)	Employment	Skills, Technology and Development	Revenue Generation	Demographic Profile and Community Health	Traffic	Health, Safety and Security	Fire	Air Quality and Dust	Noise	Waste Production	Groundwater, Surface Water and Soil Contamination	Ecological Impacts	Mariculture Impacts	Visual Impact	Impacts on Utilities and Infrastructure	Seabed Scouring and Maintenance of Water Depth	Impacts on Services	Vessel Navigation	Heritage
Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter (London Convention)											x	x	x							
IMO Guidelines on Marine Security: International Ship and Port Facility ISPS Code	x																			
IMO Biofouling Guidelines													x	x						
Abidjan Convention													x							
Convention Concerning the Protection of the World's Cultural and Natural Heritage																				x
Stockholm Declaration on the Human Environment		x	x		x															

10 NAMPORT OPERATING AND SYSTEMS PROCEDURES AND PLANS

Namport has a number of operating and systems procedures as well as emergency response plans. Some of these are relevant to Namport only, while other are relevant to tenants as well. These documents have to undergo periodic review to ensure continued relevance to existing and potential new activities within the port. All tenants should be provided with those documents relevant to them in order to allow them to incorporate the requirements into their own management plans and operating procedures.

The following list of system procedures are Namport specific:

- Aspects Identification and Prioritization
- Control of Documents
- Emergency Preparedness and Response Plan for the Port of Lüderitz
- Environmental Objectives Targets and Programmes
- External Documents
- Internal and External Communication
- Internal Audits
- Legal and other Requirements
- Management Review
- Marine Accident and Incident Reporting
- Monitoring & Measurements
- Non Conformance, Quality Improvement, Non-conforming Service & Customer Complaint - Investigation and Reporting
- Record keeping
- Training and Development

A list of operating procedures can be found in Table 10-1.

Table 10-1 Namport operating procedures

Operating Procedure	Applicability			
	Port of Walvis Bay	**Port of Lüderitz**	**Namport**	**Tenants / Port Users / Contractors**
Assurance that external mobile cranes entering the port are mechanically sound - Prevention of oil leakage	x	x	x	x
Ballast water declaration	x	x	x	x
Berth clearance	x	x	x	x
Bunkering of fuel from tankers	x	x	x	x
Capital and maintenance dredging	x	x	x	x
Cargo empty rail returns	x	x	x	x
Cleaning of equipment wash slab	x	x	x	x
Demolition and renovation	x	x	x	x
Discarding of fluorescent tubes	x	x	x	x
Employee induction	x	x	x	
Equipment washing	x	x	x	x
Fuelling of vehicles with mobile fuel tank	x	x	x	x
Fuelling of vehicles	x	x	x	x
Fuelling of vessels	x	x	x	x
Grit blasting	x		x	x
Handling and storage of dangerous cargo	x	x	x	x
Handling of asbestos material	x	x	x	x
Handling of dry bulk	x	x	x	x
Handling of oil and chemicals in drums	x	x	x	x
Housekeeping during loading and off-loading at commercial cold storage	x	x	x	x
Invoicing miscellaneous revenue services	x	x	x	
Material safety data sheets and purchasing of chemicals	x	x	x	x
Measuring equipment	x	x	x	
Monitoring of oil separators	x	x	x	x
Namport waste management plan	x	x	x	x
New projects	x	x	x	x
OHSE instructions for Syncrolift users	x		x	x
Painting of wharf cranes	x	x	x	x
Pilot pilotage	x	x	x	
Pilot-pilot passage, berthing and unberthing	x	x	x	
Pollution tariff	x	x	x	x
Purchasing	x	x	x	
Reach Stacker operation to aid the minimization of hydraulic pipe bursts and mitigation of pollution.	x	x	x	x
Safety, Health & Environmental Recognition Program	x	x	x	
Small craft harbour ship repairs	x		x	x
Synchrolift monitoring electricity meters for illegal connection	x		x	
Syncrolift convenience	x		x	
Syncrolift operations	x		x	
Syncrolift undocking inspection list	x		x	
Usage of cargo mobile harbour appliances	x	x	x	x
Usage of reach stackers and mobile cranes	x	x	x	x
Usage of tarpaulins netting during loading off-loading of loose articles or bulk commodities.	x	x	x	x
Water sampling for chemical analysis	x	x	x	
Water treatment (Syncrolift)	x		x	x
Reefer monitoring procedure Lüderitz Port		x	x	x
Oil Spill Contingency Plan Lüderitz		x	x	x
Oil Spill Contingency Plan Walvis Bay	x		x	x

11 EXISTING ENVIRONMENTAL ASSESSMENTS AND PLANS

The following existing documentation are relevant to the Port of Lüderitz and its current and future potential impacts on the environment:

- **National Marine Pollution Contingency Plan (2017):** Sets forth and defines Namibia's oil and hazardous and noxious substances (HNS or chemicals) pollution preparedness and response system. Replaces the National Oil Spill Contingency Plan of 2007. Its purpose is to:
    - Set out national policies, principles and arrangements for the management of maritime environmental emergencies including potential and actual oil and chemical pollution in the marine environment.
    - It provides for a comprehensive response to all oil and chemical pollution emergencies in the marine environment regardless of how costs might be attributed or ultimately recovered.
- **Lüderitz Structure Plan: Towards a Model Town Volume 1 (SPC 2015)**: The Lüderitz Structure Plan highlights certain constraints with regard to the port operations and industry in general. These are:
    - The challenge associated with upgrading of the Port of Lüderitz without negatively affecting the architectural heritage, the functionality of the town, and increasing traffic related impacts.
    - The area of greatest harbour activity is adjacent to the most historically valuable area of the town. The plan outlines that "*this resource is of historical interest, is of heritage value, is of cultural value, is of aesthetic value, has economic value as a result of tourism and contributes enormously to the unique character of Lüderitz*."
    - Port expansion [optimisation] that contributes to significant increases in the level of activity of the port will create a nuisance at the townlands scale.
    - Irregular street patterns of Lüderitz results in inherent problems in terms of clashes between vehicle and pedestrian traffic.
- **The Master Plan for Development of an International Logistics Hub for SADC Countries in the Republic of Namibia (NPC 2015)**: Aims at developing a logistics hub in Namibia and highlights the Port of Lüderitz's role in this venture. Recognizes the constraints in terms of adequate transport infrastructure linking the Port of Lüderitz to potential markets.
- **Strategic Environmental Assessment (SEA) for the Karas Integrated Regional Land Use Plan (KIRLUP) (Koch et al. 2011)**: It highlight the importance of tourism within the region with specific emphasis also on "*Historic relicts of diamond mining in the Sperrgebiet and outstanding coastal landscapes*". The SEA highlights mining operations as a strong economic driver in the region. Linked to mining is the port services currently offered by the Port of Lüderitz for export of mining products.
- **Rapid Assessment of the Development Plans, Biodiversity Conservation Projects and Socio-Economic Situation of the Namib Coastal Regions (NACOMA 2004)**: Highlights the importance of tourism and mariculture in Lüderitz and surroundings and acknowledges the potential impacts of increased movement and industrial and infrastructure development on environmentally sensitive areas.

12 IMPLEMENTATION OF THE EMP

This EMP is meant to be an overarching document that encompass all potential environmental impacts that can potentially originate from any port related activities and provides a general guideline for mitigating the impacts of operations in the port. The EMP must become a contractual obligation that all Namport employees and contractors, as well as tenants and their respective contractors, must adhere to. However, since a port is a dynamic enterprise, which is continuously changing as demands for port related services change, regular updating of the EMP may be required.

This will allow for the addition of management actions and strategies that are not currently included in the EMP.

It should be realised that from port management side (Namport), not all impacts with their management actions might be relevant. Similarly not all impacts may be relevant to each of the tenant operations. Therefore, each tenant is responsible for extracting from the overarching EMP, those impacts and management actions relevant to their operations. These should then be elaborated on to be specific to the nature of their own operational activity impacts. Depending on the nature and magnitude of operations of each tenant, respective EMPs will vary in size and complexity. Monitoring of impacts and management actions is essential to allow for future environmental clearance applications and to assess the environmental responsibility of Namport and its tenants.

It is recommended that an environmental committee be established that includes the environmental managers of Namport as well as a representative from each of the tenants of the port and possibly their major contractors. The committee will be responsible for providing feedback on the practicality of implementing the EMP, as well as possible improvements and changes to be made. Furthermore the committee can investigate a joint, holistic environmental monitoring programme that will ensure long term, scientific environmental monitoring. This will be a proactive approach that will highlight environmental problems originating as a result of the cumulative impact of port operations in time and allow the development of proactive and sensible mitigation measures.

13 CONCLUSION

The Port of Lüderitz plays a very important role in the livelihoods of a significant portion of the town's population and contributes to revenue generation for the National Treasury. It has long been an objective of Namport and related stakeholders to explore avenues of increasing utilisation of the port as a major export avenue of mineral resources. However, the nature of the town and environment surrounding the port places constraints on the potential development of the port. These constrains mostly relate to the heritage value of the historic built-up environment, the terrain, the existing transport network, as well as the sensitive nature of the natural environment.

The development of an overarching EMP for the Port of Lüderitz is important in terms of managing the environment in light of existing and potential future operations of the port. It is imperative that all stakeholders involved in operations within the port has access to and adheres to the conditions as stipulated in the EMP. If properly implemented, this will help to minimise adverse impacts on the environment. Where impacts occur, immediate action must be taken to reduce the escalation of effects associated with these impacts. To ensure the relevance of this document to the specific stage of projects being implemented in the port, it needs to be reviewed and updated throughout all phases.

The EMP should be used as an on-site reference document during all phases of the proposed project, and auditing should take place in order to determine compliance with the EMP. Parties responsible for transgression of the EMP should be held responsible for any rehabilitation that may need to be undertaken. Monitoring reports must be kept available for possible submission with future renewal applications for environmental clearance certificates.

As landowner it is important that Namport keep relevant tenants responsible for pollution clean-ups as the landowner can ultimately be held responsible where such tenants move away. It is important that clean-up goals are agreed on where clean-ups / rehabilitation is needed and that proper monitoring be conducted to ensure clean-up goals are met within reasonable timeframes.

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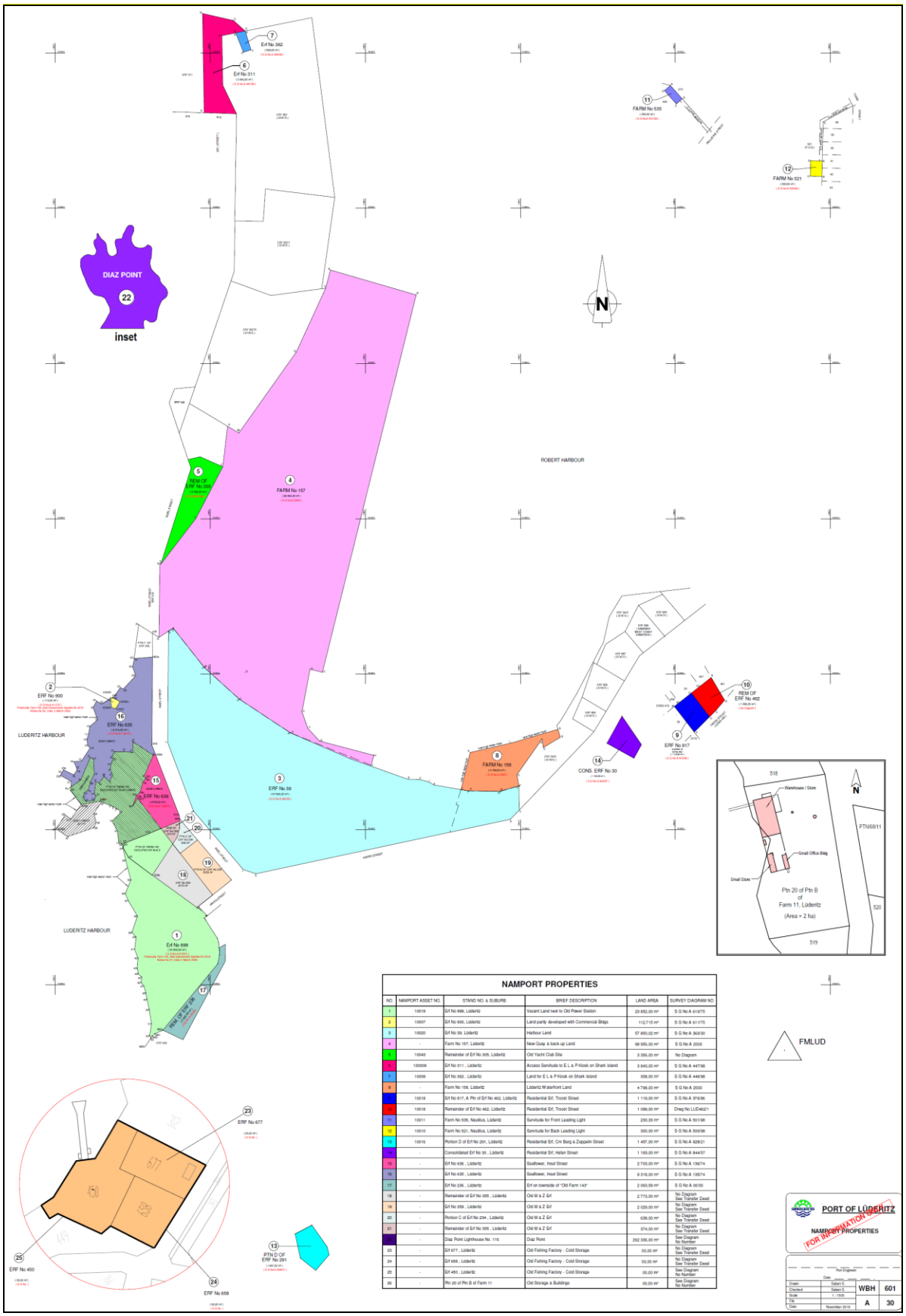
Appendix A: Namport Properties



NAMPORT PROPERTIES

NO.	NAMPORT ASSET NO.	STAND NO. & SUBURB	BREF DESCRIPTION	LAND AREA	SURVEY DIAGRAM NO
1	10019	Erf No 899, Lüderitz	Vacant Land next to Old Power Station	29 852,00 m²	S G No A 61/975
2	10007	Erf No 900, Lüderitz	Land partly developed with Commercial Bldgs	112,715 m²	S G No A 61/175
3	10020	Erf No 39, Lüderitz	Harbour Land	57 850,02 m²	S G No A 360/30
4	-	Farm No 157, Lüderitz	New Quay & back-up Land	99 956,00 m²	S G No A 2003
5	10043	Remainder of Erf No 305, Lüderitz	Old Yacht Club Site	3 956,00 m²	No Diagram
6	100009	Erf No 311 , Lüderitz	Access Servitude to E L a P Kiosk on Shark Island	3 843,00 m²	S G No A 447/98
7	10009	Erf No 362 , Lüderitz	Land for E L a P Kiosk on Shark Island	308,00 m²	S G No A 446/98
8	-	Farm No 158, Lüderitz	Lüderitz Waterfront Land	4 796,00 m²	S G No A 2003
9	10018	Erf No 817, A Ptn of Erf No 462, Lüderitz	Residential Erf, Troost Street	1 119,00 m²	S G No A 379/96
10	10018	Remainder of Erf No 462, Lüderitz	Residential Erf, Troost Street	1 099,00 m²	Dwg No LUD/462/1
11	10011	Farm No 535, Nautilus, Lüderitz	Servitude for Front Leading Light	230,33 m²	S G No A 92/198
12	10010	Farm No 521, Nautilus, Lüderitz	Servitude for Back Loading Light	300,00 m²	S G No A 93/98
13	10016	Portion D of Erf No 291, Lüderitz	Residential Erf, Cnr Barg a Zoppolin Strost	1 497,00 m²	S G No A 92/821
14	-	Consolidated Erf No 30 , Lüderitz	Residential Erf, Hafen Street	1 189,00 m²	S G No A 844/97
15	-	Erf No 636 , Lüderitz	Seaflower, Insel Strost	2 705,00 m²	S G No A 139/74
16	-	Erf No 635 , Lüderitz	Seaflower, Insel Street	9 318,00 m²	S G No A 139/74
17	-	Erf No 236 , Lüderitz	Erf on townside of "Old Farm 143"	2 063,59 m²	S G No A 00/00
18	-	Remainder of Erf No 355 , Lüderitz	Old M a Z Erf	2 773,00 m²	No Diagram See Transfer Deed
19	-	Erf No 359 , Lüderitz	Old M a Z Erf	2 029,00 m²	No Diagram See Transfer Deed
20	-	Portion C of Erf No 234 , Lüderitz	Old M a Z Erf	636,00 m²	No Diagram See Transfer Deed
21	-	Remainder of Erf No 355 , Lüderitz	Old M a Z Erf	374,00 m²	No Diagram See Transfer Deed
22	-	Diaz Point Lighthouse No. 116	Diaz Point	252 336,00 m²	See Diagram No Number
23	-	Erf 677 , Lüderitz	Old Fishing Factory - Cold Storage	00,00 m²	No Diagram See Transfer Deed
24	-	Erf 658 , Lüderitz	Old Fishing Factory - Cold Storage	00,00 m²	No Diagram See Transfer Deed
25	-	Erf 450 , Lüderitz	Old Fishing Factory - Cold Storage	00,00 m²	See Diagram No Number
26	-	Ptn 20 of Ptn B of Farm 11	Old Storage a Buildings	00,00 m²	See Diagram No Number

PORT OF LÜDERITZ
NAMPORT PROPERTIES
FOR INFORMATION ONLY

Drawn	Fabian S.	WBH	601
Checked	Fabian S.		
Scale	1 : 1500	A	30
File			
Date	November 2019		

Appendix B: Public Participation

Registered Interested and Affected Parties

Name	Position	Organization
Anja Kreiner	Senior Fisheries Biologist	Ministry of Fisheries and Marine Resources
Ann Scott		African Conservation Services CC
Crispin Clay	Chairman	Lüderitzbucht Foundation
Elton Kuruseb		Ministry of Environment and Tourism
Erich Maletzky		Ministry of Fisheries and Marine Resources
Eugene de Paauw	Specialist Road Legislation, Advice & Compliance	Roads Authority
Ezechiel Nsabibaruta		Roads Authority
G.A. Kessler	Director	Fiver Roses Aquaculture
Hendrik Maritz		Roads Authority
Ingrid Wiesel	Senior Scientist	Brown Hyena Research Project
Jessica Kemper		Conservation Biologist and Lüderitz Resident
Johan Blaauw		Roads Authority
Jolanda Murangi	Environmentalist In-Training	NamWater
Jürgen Fleidl	Director	Five Roses Aquaculture
Lewis Druker		Coastway Tours
Lima Maartens	Environmental Practitioner	LM Environmental Consulting
Manfred Burth		Roads Authority
Michael Rumsey		K&A Partnership
Mike Scott		African Conservation Services CC
Monique Laubscher	Field Technician	Namibia Dolphin Project
NP du Plessis	Senior Environmentalist	NamWater
Rassie Erasmus	General Manager	Hangana Abalone
Richard Fryer	Chief Warden	Ministry of Environment and Tourism
Rodney Braby	Regional Technical Adviser	Marine Spatial Management and Governance Project - MARISMA
Simon Elwen	Director	Namibia Dolphin Project
Tim Eiman	Coordinator EMS/QMS	Namport
Victor Libuku	Biologist	Ministry of Fisheries and Marine Resources
Wayne Handley		Ministry of Environment and Tourism
Johannes Isaaks	Shreq Officer	Namport
Victor Musungo	Resident Engineer	K&A Engineers
Desmond Tom		Ministry of Fisheries and Marine Resources
Wetupa Nakathingo	Environmental Health Practitioner	Lüderitz Town Council
Ian Wingate		L.M.S
Elmareen Snyders	Fisheries Inspector	Ministry of Fisheries and Marine Resources
Andreas Iipinge	IT	Ministry of Fisheries and Marine Resources
Lukas Shivela	Operations	Ministry of Fisheries and Marine Resources
J-P Roux	Scientist	Ministry of Fisheries and Marine Resources
Emma Natanael		Ministry of Fisheries and Marine Resources
Gustaf Hanghome		Ministry of Fisheries and Marine Resources
Aoxamubeb		Nampol
Hilma Imene		Nampol
Nicodemus Nambala		Nampol
Shanyde Oranje		Nampol
Jacky Bester		Ministry of Fisheries and Marine Resources
HJ Shiimukweni		Ministry of Fisheries and Marine Resources

Notification Letters

RECEIVED 22 OCT 2018 Saima 22/10/18

GEO Pollution Technologies
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To: **The Permanent Secretary** **19 October 2018**
Ministry of Agriculture, Water & Forestry
P/Bag 13184
Windhoek

Re: **Environmental Management Plans for the Operations of the Port of Walvis Bay and Port of Lüderitz**

Dear Sir/Madam

The Namibian Port Authority, Namport, requested Geo Pollution Technologies (Pty) Ltd to prepare environmental management plans for the Ports of Walvis Bay and Lüderitz respectively. The environmental management plans will be prepared according to the Environmental Management Act of 2007 and its regulations as published in 2012.

Project: Drafting of Environmental Management Plans for the Operations of the Port of Walvis Bay and Port of Lüderitz

Proponent: Namibian Port Authority (Namport)

Environmental Assessment Practitioner: Geo Pollution Technologies (Pty) Ltd

All Interested and Affected Parties (I&APs) are invited to register with the environmental consultant to receive further documentation and communication regarding the project. By registering, I&APs will be provided with an opportunity to provide input that will be considered in the drafting of the environmental management plans.

Two information sharing meetings will be held, one in Lüderitz (06 November 2018) and one in Walvis Bay (13 November 2018). Please register as an I&AP and confirm your attendance to the meetings by **02 November 2018**. Venue details and related information will be made available to registered I&APs. Reports for review and comment periods will also be communicated to all registered parties.

To register, please complete the attached form and return it to:

Fax: 088-62-6368

E-Mail: namport@thenamib.com

We would also like to request your office, or relevant delegated directorates or departments, to provide us with any legislation, regulations, policies, etc., that may be applicable for the drafting of the port related environmental management plans. Your assistance in this regard will be highly appreciated.

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

Thank you in advance.

Sincerely,
Geo Pollution Technologies

André Faul
Conservation Ecologist

Page 1 of 2
Directors:

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Emmie

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To: **The Permanent Secretary**
Ministry of Health and Social Services
P/Bag 13198
Windhoek

19 October 2018

Re: **Environmental Management Plans for the Operations of the Port of Walvis Bay and Port of Lüderitz**

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MINISTRY OF SAFETY AND SECURITY
RECEIVED
Sarry
2018 -10- 22
PERMANENT SECRETARY WINDHOEK

To: **The Permanent Secretary**
Ministry of Safety and Security
P/Bag 13281
Windhoek

19 October 2018

Re: **Environmental Management Plans for the Operations of the Port of Walvis Bay and Port of Lüderitz**

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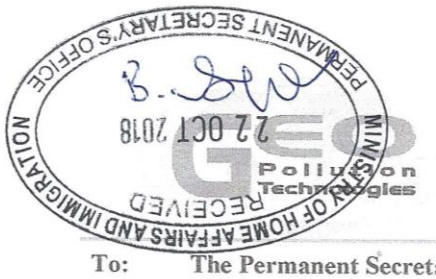

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To: **The Permanent Secretary**
Ministry of Home Affairs & Immigration
P/Bag 13200
Windhoek

19 October 2018

Re: **Environmental Management Plans for the Operations of the Port of Walvis Bay and Port of Lüderitz**

Dear Sir/Madam

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To: **The Permanent Secretary** **19 October 2018**
Ministry of Fisheries and Marine Resources
P/Bag 13355
Windhoek

Re: **Environmental Management Plans for the Operations of the Port of Walvis Bay and Port of Lüderitz**

Dear Sir/Madam

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Thank you in advance.

Sincerely,
Geo Pollution Technologies

MINISTRY OF FISHERIES & MARINE RESOURCES
OFFICE OF THE PERMANENT SECRETARY
22-10-2019
RECEIVED
BY: TShapaka

André Faul
Conservation Ecologist

Laurencia Himumune
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To: **The Permanent Secretary** **19 October 2018**
Ministry of Environment and Tourism
P/Bag 13306
Windhoek

Re: **Environmental Management Plans for the Operations of the Port of Walvis Bay and Port of Lüderitz**

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Proponent: Namibian Port Authority (Namport)

Environmental Assessment Practitioner: Geo Pollution Technologies (Pty) Ltd

All Interested and Affected Parties (I&APs) are invited to register with the environmental consultant to receive further documentation and communication regarding the project. By registering, I&APs will be provided with an opportunity to provide input that will be considered in the drafting of the environmental management plans.

Two information sharing meetings will be held, one in Lüderitz (06 November 2018) and one in Walvis Bay (13 November 2018). Please register as an I&AP and confirm your attendance to the meetings by **02 November 2018**. Venue details and related information will be made available to registered I&APs. Reports for review and comment periods will also be communicated to all registered parties.

To register, please complete the attached form and return it to:

Fax: 088-62-6368

E-Mail: namport@thenamib.com

We would also like to request your office, or relevant delegated directorates or departments, to provide us with any legislation, regulations, policies, etc., that may be applicable for the drafting of the port related environmental management plans. Your assistance in this regard will be highly appreciated.

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

Thank you in advance.

Sincerely,
Geo Pollution Technologies

André Faul
Conservation Ecologist

GEO Pollution Technologies

TEL.: (+264-61) 257411 ♦ FAX.: (+264) 88626368
CELL.: (+264-81) 1220082
PO BOX 11073 ♦ WINDHOEK ♦ NAMIBIA
E-MAIL: gpt@thenamib.com

To: **The Permanent Secretary**
Ministry of Works and Transport
P/Bag 13341
Windhoek

19 October 2018

Re: **Environmental Management Plans for the Operations of the Port of Walvis Bay and Port of Lüderitz**

Dear Sir/Madam

The Namibian Port Authority, Namport, requested Geo Pollution Technologies (Pty) Ltd to prepare environmental management plans for the Ports of Walvis Bay and Lüderitz respectively. The environmental management plans will be prepared according to the Environmental Management Act of 2007 and its regulations as published in 2012.

Project: Drafting of Environmental Management Plans for the Operations of the Port of Walvis Bay and Port of Lüderitz

Proponent: Namibian Port Authority (Namport)

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Thank you in advance.

Sincerely,
Geo Pollution Technologies

André Faul
Conservation Ecologist

OFFICE OF THE PERMANENT SECRETARY
2018 -10- 22
RECEIVED.....
MINISTRY OF WORKS AND TRANSPORT

GEO Pollution Technologies

TEL.: (+264-61) 257411 ♦ FAX.: (+264) 88626368
CELL.: (+264-81) 1220082
PO BOX 11073 ♦ WINDHOEK ♦ NAMIBIA
E-MAIL: gpt@thenamib.com

To: **The Permanent Secretary**
Ministry of Mines and Energy
P/Bag 13297
Windhoek

19 October 2018

Re: **Environmental Management Plans for the Operations of the Port of Walvis Bay and Port of Lüderitz**

Dear Sir/Madam

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Project: Drafting of Environmental Management Plans for the Operations of the Port of Walvis Bay and Port of Lüderitz

Proponent: Namibian Port Authority (Namport)

Environmental Assessment Practitioner: Geo Pollution Technologies (Pty) Ltd

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Thank you in advance.

Sincerely,
Geo Pollution Technologies

MINISTRY OF MINES AND ENERGY
OFFICE OF THE PERMANENT SECRETARY
22 OCT 2018
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André Faul
Conservation Ecologist

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CELL.: (+264-81) 1220082
PO BOX 11073 ♦ WINDHOEK ♦ NAMIBIA
E-MAIL: gpt@thenamib.com

To: **The Permanent Secretary**
Ministry of Defence
P/Bag 13307
Windhoek

19 October 2018

Re: **Environmental Management Plans for the Operations of the Port of Walvis Bay and Port of Lüderitz**

Dear Sir/Madam

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PUBLIC PARTICIPATION NOTICE

ENVIRONMENTAL MANAGEMENT PLANS FOR THE OPERATIONS OF THE PORT OF WALVIS BAY AND PORT OF LÜDERITZ

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Telephone: +264-61-257411
Fax: +264-88626368
E-Mail: namport@thenamib.com

20 MONDAY 29 OCTOBER 2018 ARTS & ENTERTAINMENT THE NAMIBIAN

PUBLIC PARTICIPATION NOTICE

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ComiCon a hit

• JONATHAN SOLOMONS

THE Warehouse Theatre was a comedic hub on Friday night thanks to some of Namibia's finest funny men.

In partnership with the theatre, Windhoek Comedy Club (WCC) put up a great show featuring four comics Ujandja 'Jandjie the Comic' Zatjirua, Barry B, Uncle Mike and Alex Madjarov.

Kicking off ComiCon 2018, rapper Ali That Dude entertained a fully packed venue before the first comic stepped on the stage.

Jandjie, founder of WCC and host of the night eased the audience into what was coming for the night. Taking hits at relationships, the economy and Coloured people, Jandjie held his own and made for a promising host as he kept the crowd amused in between sets.

Second on stage, funny man Barry B continued taking a few jabs at Coloureds and talked about the workplace and having to endure certain colleagues. Clearly one of the favourites of the night, I think it's safe to say Barry B is paving his way to the comedy hall of fame – it's sad that we don't see more of him on stage.

Uncle Mike, dressed in gwerrie socks, vellies and and awkward hat personified 'uncle' as he stepped on stage. Talking about being a husband and father, Uncle Mike brought a new perspective to family life. While at it, he took the crowd on a journey back a couple millennia to when Adam first met Eve, with his own unique spin on the story of creation.

Unfortunately, the show took a terrible turn south as Alex took to the stage to close off proceedings. Slow-paced, flat and uninspiring are a few words that describe his performance. While he did garner a handful of laughs from a few audience members, he got none from me. Making jokes about Coloured people, Kanye West and slavery, Alex lost the plot and was quite offensive throughout his set. As he drowned behind the crowd's detachment, there was opportunity to leave early and cut the suffering short.

Overall, ComiCon was a great initiative which brought some not often seen faces back to the stage.

China se ekonomiese groei is van groot belang vir Suid-Afrika, aangesien dié land Suid-Afrika se grootste handelsvennoot is.

Suid-Afrika voer nagenoeg R73 miljard se goedere per maand – 9% van alle uitvoer – na China uit, luidens die Suid-Afrikaanse Inkomstediens se handelsyfers vir Augustus.

Die grootste kategorieë is minerale (R50,5 miljard), yster- en staalprodukte (R10,9 miljard), tekstiele (R2,4 miljard), houtpulp en papier (R2,3 miljard) en vrugte en groente (R2 miljard).

Suid-Afrika is in 'n resessie. Moody's het Dinsdag sy verwagting vir Suid-Afrika se ekonomiese groei vir die hele 2018 tot net 0,5% afgeskaal.

- Netwerk24

Afrox is die enigste van vyf gasmaatskappye wat nie 'n administratiewe boete gaan kry weens oortredings van die Mededingingswet nie. FOTO NETWERK24/AFROX

PUBLIC PARTICIPATION NOTICE
ENVIRONMENTAL MANAGEMENT PLANS FOR THE OPERATIONS OF THE PORT OF WALVIS BAY AND PORT OF LÜDERITZ

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Appendix C: Attendance and Minutes of Public Meeting

Minutes of Meeting

Re: Public Meeting: Drafting of an Environmental Management Plan for the Port of Lüderitz

Date: Tuesday, 06 November 2018

Time: 15h00-16h30

Venue: Ministry of Fisheries and Marine Resources Boardroom, Lüderitz

In attendance:

Erich Maletzky	Ministry of Fisheries and Marine Resources
Rassie Erasmus	Hangana Abalone
Wayne Handley	Ministry of Environment and Tourism
Johannes Isaaks	Namport
Victor Musungo	K&A Engineers
Desmond Tom	Ministry of Fisheries and Marine Resources
Wetupa Nakathingo	Lüderitz Town Council
Ian Wingate	L.M.S
Elmareen Snyders	Ministry of Fisheries and Marine Resources
Andreas Iipinge	Ministry of Fisheries and Marine Resources
Lukas Shivela	Ministry of Fisheries and Marine Resources
J-P Roux	Ministry of Fisheries and Marine Resources
Emma Natanael	Ministry of Fisheries and Marine Resources
Gustaf Hanghome	Ministry of Fisheries and Marine Resources
Aoxamubeb	Nampol
Hilma Imene	Nampol
Nicodemus Nambala	Nampol
Shanyde Oranje	Nampol
Jacky Bester	Ministry of Fisheries and Marine Resources
HJ Shiimukweni	Ministry of Fisheries and Marine Resources
Cecil Kamupingene	Namport

André Faul of Geo Pollution Technologies welcomed the audience to the meeting and proceeded with a presentation to introduce the different parties involved and to explain the purpose of the environmental management plan (EMP) and the meeting. After the presentation the audience was invited to provide input to be considered in the drafting of the EMP.

Dr. Jean-Paul Roux enquired about the responsibilities of the tenants versus Namport with regard to the EMP for the port. André explained that although Namport will be ultimately responsible for implementing the EMP, as it is their area of jurisdiction, each tenant that triggers a listed activity in the Environmental Management Act, may also have their own EMPs. The Namport EMP and tenant EMPs will have to be compatible and will take into account Namibian legislation.

Mr. Erich Maletzky enquired about the previous stakeholder meeting [public meeting as part of the scoping assessment for the proposed Angra Point Deepwater Port] Geo Pollution Technologies conducted in Lüderitz, and what the outcome of that project was. He further noted that he would

have thought that project would feed into the current drafting of the EMP project. André explained to the audience what meeting Mr. Maletzky referred to. He mentioned that the scoping report for that project was finalised and that it is now with the relevant competent authorities for review. He elaborated a bit on the findings of the document and further explained that the Angra Point study was only for Angra Point's development and does not include the existing port. The current EMP project thus does not have any bearing on the Angra Point project.

Mr. Crispin Clay informed the audience that over the years many environmental assessments have been conducted, but nowhere has he seen that some form of compensation has been provided for local inhabitants and potential tourists for recreational areas that are lost due to development. He mentioned the Angra Point development as one such example where beaches will be lost that are currently available for fishing purposes. André recognised the concern for developments outside of the existing port. He explained that the Angra Point study did emphasise the potential loss in recreational areas and that the specialist studies proposed are aimed at addressing these issues. A short discussion ensued regarding what is allowed at Angra Point. Mr Roux confirmed it is a recreational area where fishing is allowed. Mr. Ferdi de Villiers confirmed the recreational areas that will be in conflict with the Angra Point development. Since this discussion falls outside the scope of the meeting, André directed the meeting back to the EMP project.

Mr. Ian Wingate enquired if everybody is aware where the port limits are. André proceeded to show a map on which he indicated the port limits. He explained that the EMP will focus mainly on the commercial port but will also look at the entire port area. It is only dredging activities that is excluded since it has its own environmental assessment and EMP which are updated as required.

Mr. Ian Wingate asked if the EMP includes offshore fuel bunkering. André explained that the EMP has not been drafted yet. He noted that Namport will be engaged with regarding fuel bunkering and whether it is something that must be included in the EMP. He explained that fuel bunkering companies are supposed to have their own EIAs and EMPs and if bunkering occur outside port limits it will fall outside the scope of the EMP for Namport. Dr. Roux explained that there are legislation for offshore bunkering and that the bunkering companies can ask for special permission to bunker closer to land. The problem in the Lüderitz area is that there are many stakeholders and authorities involved and there are little communication between them. He requested the EMP to address this issue of bunkering since spills has occurred in the past, very close to Halifax Island.

Mr. Clay asked whether the EMP will include Angra Point development. André explained that since Angra Point is a long term plan, it will not be included at this stage. He explained that and EMP is a living document that is updated regularly and as operations change. He explained how the environmental clearance application and renewal process works and that renewals must currently be done every three years.

Mr. Roux enquired about the Namport land around Dias Point. There are facilities that were leased to tenants who now left. He mentioned that the waste bins are overflowing and there are waste going into the sea. He wanted to know who takes responsibility for that especially since Dias Point is a major tourist attraction. André explained that it will be Namport's responsibility and will be included under waste management and visual impact.

Mr. Ian Wingate asked whether there are any specific developments that are planned for the port area. André said that there are plans to construct a store for manganese ore on the existing harbour and Mr. Cecil Kamupingene stated that the fuel storage will be upgraded and that the a new jetty will be constructed to extend the existing quay northwards. André explained that such activities will likely require their own environmental impact assessments.

No further comments were received and the meeting was adjourned.

Appendix D: Consultant's Curriculum Vitae

ENVIRONMENTAL SCIENTIST **André Faul**

André entered the environmental assessment profession at the beginning of 2013 and since then has worked on more than 220 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	:	23
Nationality	:	Namibian
Position	:	Environmental Scientist
Specialisation	:	Environmental Toxicology
Languages	:	Afrikaans – speaking, reading, writing – excellent
		English – speaking, reading, writing – excellent

EDUCATION AND PROFESSIONAL STATUS:

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

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

PROFESSIONAL SOCIETY AFFILIATION:

Environmental Assessment Professionals of Namibia (Learner 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		+220
Research Reports & Manuals:		5
Conference Presentations	:	1