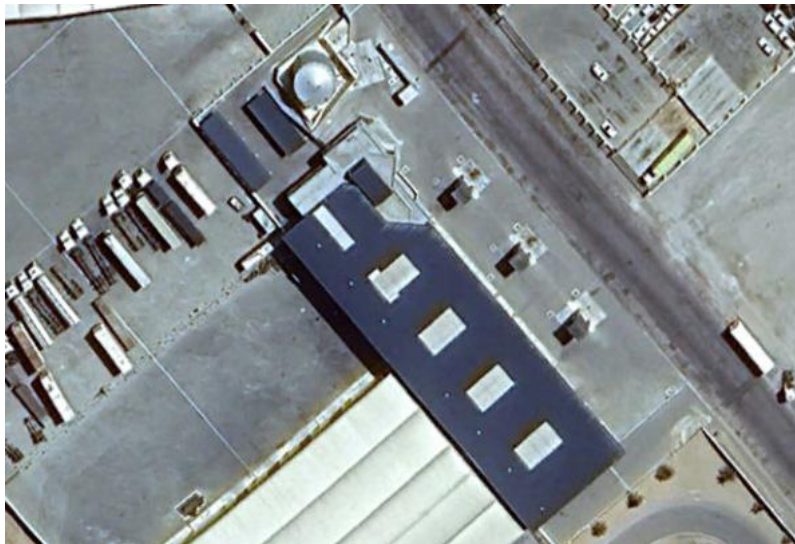


**APP-004034**

**BACHMUS OIL & FUEL SUPPLIES' BULK FUEL STORAGE  
FACILITY IN THE LIGHT INDUSTRIAL AREA OF WALVIS BAY**

**UPDATED ENVIRONMENTAL MANAGEMENT PLAN**



**Prepared by:**




**Prepared for:**

**BACHMUS**

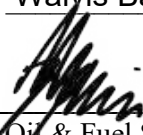
May 2024



<b>Project:</b>	<b>BACHMUS OIL &amp; FUEL SUPPLIES' BULK FUEL STORAGE FACILITY IN THE LIGHT INDUSTRIAL AREA OF WALVIS BAY: UPDATED ENVIRONMENTAL MANAGEMENT PLAN</b>	
<b>Report: Version/Date:</b>	Final May 2024	
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<b>Approval:</b>	 André Faul Conservation Ecologist	

I Jacob Jakobus Marais acting as the representative of Bachmus Oil & Fuel Supplies (Pty) Ltd, hereby confirm that we approve the updated environmental management plan as presented in this document. All material information in the possession of the Proponent that reasonably has or may have the potential of influencing the environmental management plan was provided to the consultant.

Signed at Walvis Bay on the 17th day of May 2024.

  
Bachmus Oil & Fuel Supplies (Pty) Ltd

93/670  
Company Registration Number / ID



## **TABLE OF CONTENTS**

<b>1</b>	<b>INTRODUCTION.....</b>	<b>1</b>
<b>2</b>	<b>INFRASTRUCTURE AND OPERATIONS.....</b>	<b>1</b>
<b>3</b>	<b>ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS .....</b>	<b>2</b>
<b>4</b>	<b>OBJECTIVES OF THE EMP.....</b>	<b>4</b>
<b>5</b>	<b>IMPLEMENTATION OF THE EMP.....</b>	<b>5</b>
<b>6</b>	<b>MANAGEMENT OF IMPACTS.....</b>	<b>5</b>
6.1	CONSTRUCTION AND OPERATIONS .....	5
6.1.1	<i>Planning.....</i>	5
6.1.2	<i>Employment .....</i>	6
6.1.3	<i>Skills, Technology and Development .....</i>	7
6.1.4	<i>Revenue Generation.....</i>	8
6.1.5	<i>Fuel Supply.....</i>	9
6.1.6	<i>Demographic Profile and Community Health .....</i>	10
6.1.7	<i>Traffic .....</i>	11
6.1.8	<i>Health, Safety and Security.....</i>	12
6.1.9	<i>Fire .....</i>	13
6.1.10	<i>Air Quality.....</i>	14
6.1.11	<i>Noise .....</i>	15
6.1.12	<i>Waste Production.....</i>	16
6.1.13	<i>Ecosystem and Biodiversity Impact .....</i>	17
6.1.14	<i>Groundwater, Surface Water and Soil Contamination .....</i>	18
6.1.15	<i>Visual Impact .....</i>	19
6.1.16	<i>Cumulative Impact.....</i>	20
6.2	DECOMMISSIONING AND REHABILITATION .....	21
<b>7</b>	<b>CONCLUSION.....</b>	<b>21</b>
<b>8</b>	<b>REFERENCES.....</b>	<b>21</b>

## **LIST OF FIGURES**

FIGURE 1-1	PROJECT LOCATION .....	1
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## **LIST OF TABLES**

TABLE 3-1	NAMIBIAN LAW APPLICABLE TO THE CONSUMER FUEL INSTALLATION .....	2
TABLE 3-2	MUNICIPAL BY-LAWS, GUIDELINES AND REGULATIONS.....	3
TABLE 3-3	RELEVANT MULTILATERAL ENVIRONMENTAL AGREEMENTS FOR NAMIBIA AND THE DEVELOPMENT.....	4
TABLE 3-4	STANDARDS OR CODES OF PRACTISE .....	4



## 1 INTRODUCTION

Bachmus Oil & Fuel Supplies (Pty) Ltd (the Proponent) requested Geo Pollution Technologies (Pty) Ltd to renew the environmental clearance certificate (ECC) for their bulk diesel storage and wholesale facility in Walvis Bay. The facility is located on Erf 5738, Rössing Street, and is zoned for light industrial use.

In support of the ECC renewal, an updated environmental management plan (EMP) was developed and is represented in this report. The updated EMP is based on the environmental assessment conducted for the facility in 2021 (Faul and Coetzer, 2021).

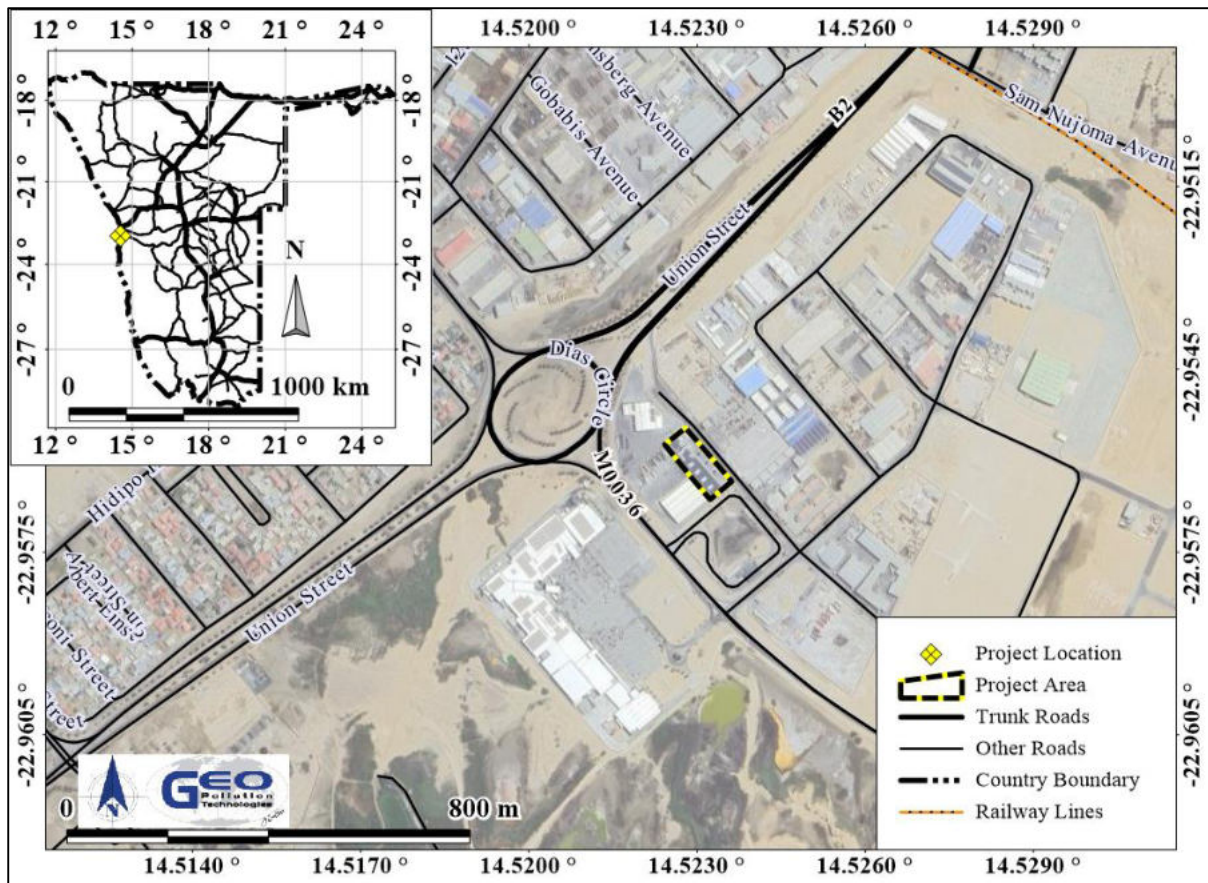


Figure 1-1 Project location

## 2 INFRASTRUCTURE AND OPERATIONS

The Proponent has a 500 m<sup>3</sup> aboveground diesel storage tank. The tank is a vertical steel tank, situated inside a concrete bund area that protects against environmental pollution in the event of a spill or leak at the tank. A gantry for fuel deliveries is situated next to the bund area. It has a concrete spill control slab connected to an oil water separator and fuel is pumped via a pump room to the storage tank. Fuel is dispensed at three dispensing points accessed from Rössing Street. The dispensing area is covered with concrete connected to an oil water separator via spill catchment pits. The separator outflow is into the local sewer network. The fuel installation adheres to SANS requirements for bulk fuel installations.

The facility operates 24 hours a day, seven days a week. Diesel (50 ppm) is received from tanker trucks and stored in the aboveground storage tank. Fuel is dispensed to customers by pump attendants as required. Regular reconciliation of fuel volumes is performed to detect any possible losses. Any contaminated products is disposed of at a registered oil waste recycler or approved hazardous waste disposal facility. Additional operations of the facility include oil and lubricant sales, daily administrative activities as well as general care and maintenance of the property. Any domestic waste

produced is stored in an enclosed, temporary waste storage area. From here it is removed regularly and transported to, and disposed of at, an approved municipal waste disposal facility.

### 3 ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS

To protect the environment and achieve sustainable development, all projects, plans, programmes and policies deemed to have adverse impacts on the environment require an environmental assessment, as per the Namibian legislation. The legislation and standards provided in Table 3-1 to Table 3-4 govern the environmental assessment process in Namibia and/or are relevant to the facility.

**Table 3-1 Namibian law applicable to the consumer fuel installation**

Law	Key Aspects
<b>The Namibian Constitution</b>	<ul style="list-style-type: none"> <li>◆ Promotes the welfare of people.</li> <li>◆ Incorporates a high level of environmental protection.</li> <li>◆ Incorporates international agreements as part of Namibian law.</li> </ul>
<b>Environmental Management Act</b> Act No. 7 of 2007, Government Notice No. 232 of 2007	<ul style="list-style-type: none"> <li>◆ Defines the environment.</li> <li>◆ Promotes sustainable management of the environment and the use of natural resources.</li> <li>◆ Provides a process of assessment and control of activities with possible significant effects on the environment.</li> </ul>
<b>Environmental Management Act Regulations</b> Government Notice No. 28-30 of 2012	<ul style="list-style-type: none"> <li>◆ Commencement of the Environmental Management Act.</li> <li>◆ Listed activities that requires an environmental clearance certificate.</li> <li>◆ Provides Environmental Impact Assessment Regulations.</li> </ul>
<b>Petroleum Products and Energy Act</b> Act No. 13 of 1990, Government Notice No. 45 of 1990	<ul style="list-style-type: none"> <li>◆ Regulates petroleum industry.</li> <li>◆ Makes provision for impact assessment.</li> <li>◆ Makes provision for licencing of fuel installations</li> <li>◆ Petroleum Products Regulations (Government Notice No. 155 of 2000). <ul style="list-style-type: none"> <li>○ Prescribes South African National Standards (SANS) or equivalents for construction, operation and decommissioning of petroleum facilities (refer to Government Notice No. 21 of 2002).</li> </ul> </li> </ul>
<b>Water Resources Management Act</b> Act No. 11 of 2013	<ul style="list-style-type: none"> <li>◆ Provides for management, protection, development, use and conservation of water resources.</li> <li>◆ Prevention of water pollution and assignment of liability.</li> </ul>
<b>Local Authorities Act</b> Act No. 23 of 1992, Government Notice No. 116 of 1992	<ul style="list-style-type: none"> <li>◆ Defines the powers, duties and functions of local authority councils.</li> <li>◆ Regulates discharges into sewers.</li> </ul>
<b>Public and Environmental Health Act</b> Act No. 1 of 2015, Government Notice No. 86 of 2015	<ul style="list-style-type: none"> <li>◆ Provides a framework for a structured more uniform public and environmental health system, and for incidental matters.</li> <li>◆ Deals with Integrated Waste Management including waste collection disposal and recycling; waste generation and storage; and sanitation.</li> </ul>



<b>Law</b>	<b>Key Aspects</b>
<b>Labour Act</b> Act No 11 of 2007, Government Notice No. 236 of 2007	<ul style="list-style-type: none"> <li>◆ Provides for Labour Law and the protection and safety of employees.</li> <li>◆ Labour Act, 1992: Regulations relating to the health and safety of employees at work (Government Notice No. 156 of 1997).</li> </ul>
<b>Atmospheric Pollution Prevention Ordinance</b> Ordinance No. 11 of 1976	<ul style="list-style-type: none"> <li>◆ Governs the control of noxious or offensive gases.</li> <li>◆ Prohibits scheduled process without a registration certificate in a controlled area.</li> <li>◆ Requires best practical means for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled process.</li> </ul>
<b>Hazardous Substances Ordinance</b> Ordinance No. 14 of 1974	<ul style="list-style-type: none"> <li>◆ Applies to the manufacture, sale, use, disposal and dumping of hazardous substances as well as their import and export.</li> <li>◆ Aims to prevent hazardous substances from causing injury, ill-health or the death of human beings.</li> </ul>
<b>Pollution Control and Waste Management Bill (draft document)</b>	<ul style="list-style-type: none"> <li>◆ Not in force yet.</li> <li>◆ Provides for prevention and control of pollution and waste.</li> <li>◆ Provides for procedures to be followed for licence applications.</li> </ul>

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

<b>Municipal By-laws, Guidelines or Regulations</b>	<b>Key Aspects</b>
<b>Integrated Urban Spatial Development Framework for Walvis Bay</b>	<ul style="list-style-type: none"> <li>◆ Overall vision to transform Walvis Bay to being the primary industrial city in Namibia.</li> <li>◆ Aims to ensure that appropriate levels of environmental management is enforced for all developments in Walvis Bay.</li> </ul>
<b>Town Planning Scheme No. 35</b>	<ul style="list-style-type: none"> <li>◆ Makes provision for primary and consent uses on erven within the Town Council's area of jurisdiction.</li> </ul>
<b>Integrated Environmental Policy of Walvis Bay (Agenda 21 Project)</b>	<ul style="list-style-type: none"> <li>◆ Indicates the directions that the Municipality of Walvis Bay will move towards in the forthcoming years to fulfil its responsibilities to manage the environment of Walvis Bay together with the town's residents and institutions.</li> <li>◆ Strong focus on conservation and protection of environment.</li> </ul>
<b>Municipal By-law 19 and 20 on Effluents Entering Sewers</b>	<ul style="list-style-type: none"> <li>◆ Regulates the discharge of effluent into sewers and prohibits the introduction of certain wastes or products including steam into the sewers system.</li> </ul>

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

<b>Agreement</b>	<b>Key Aspects</b>
<b>Stockholm Declaration on the Human Environment, Stockholm 1972.</b>	<ul style="list-style-type: none"> <li>◆ 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.</li> </ul>
<b>1985 Vienna Convention for the Protection of the Ozone Layer</b>	<ul style="list-style-type: none"> <li>◆ Aims to protect human health and the environment against adverse effects from modification of the Ozone Layer are considered.</li> <li>◆ Adopted to regulate levels of greenhouse gas concentration in the atmosphere.</li> </ul>
<b>United Nations Framework Convention on Climate Change (UNFCCC)</b>	<ul style="list-style-type: none"> <li>◆ The Convention recognises that developing countries should be accorded appropriate assistance to enable them to fulfil the terms of the Convention.</li> </ul>
<b>Convention on Biological Diversity, Rio de Janeiro, 1992</b>	<ul style="list-style-type: none"> <li>◆ Under article 14 of The Convention, EIAs must be conducted for projects that may negatively affect biological diversity.</li> </ul>

**Table 3-4 Standards or codes of practise**

<b>Standard or Code</b>	<b>Key Aspects</b>
<b>South African National Standards (SANS)</b>	<ul style="list-style-type: none"> <li>◆ The Petroleum Products and Energy Act prescribes SANS standards for the construction, operations and demolition of petroleum facilities.</li> <li>◆ SANS 10089-1 (2008): The petroleum industry Part 1: Storage and distribution of petroleum products in above-ground bulk installations. <ul style="list-style-type: none"> <li>○ Provide requirements for spill control infrastructure.</li> </ul> </li> </ul>

## **4 OBJECTIVES OF THE EMP**

The EMP provides management options to ensure impacts of the operations 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 EMP acts as a stand-alone document, which can be used during the various phases (planning, construction, operational and decommissioning) of any proposed activity or development.

All contractors and sub-contractors taking part in the operations associated with the facility should be made aware of the contents of the EMP, so as to plan the relevant activities accordingly in an environmentally sound manner.

The objectives of the EMP are:

- ◆ to include all components of the various activities;
- ◆ to prescribe the best practicable control methods to lessen the environmental impacts associated with the both construction and operation activities;
- ◆ to monitor and audit the performance of the operational personnel in applying such controls; and
- ◆ to ensure that appropriate environmental training is provided to responsible personnel and contractors.

## 5 IMPLEMENTATION OF THE EMP

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Section 6 outlines the management of the environmental elements that may be affected by the different activities. Impacts addressed and mitigation measures proposed are seen as minimum requirements which have to be elaborated on by the client where required. Delegation of mitigation and reporting activities should be determined by the proponent and included in the EMP. The EMP is a living document that must be prepared in detail, and regularly updated, by the Proponent as the project progress and evolve.

The EMP and ECC must be communicated to the site managers. All monitoring results must be reported on as indicated. These are important for any future renewals of the ECC and must be submitted in accordance with the conditions of the ECC to the Ministry of Environment, Forestry and Tourism.

## 6 MANAGEMENT OF IMPACTS

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### 6.1 CONSTRUCTION AND OPERATIONS

The following section provide management measures for both the operational phase as well as construction activities related to maintenance upgrades of the facility. All monitoring results must be reported on as indicated

#### 6.1.1 Planning

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

- ◆ Ensure that all necessary permits from the various ministries, local authorities and any other bodies that governs the construction activities and operations of the project are in place and remains valid. This includes the petroleum products licence.
- ◆ Ensure all appointed contractors and employees enter into an agreement which includes the EMP. Ensure that the contents of the EMP are understood by the contractors, sub-contractors, employees and all personnel present or who will be present on site.
- ◆ Make provisions to have a health, safety and environmental (HSE) coordinator to implement the EMP and oversee occupational health and safety as well as general environmental related compliance at the site.
- ◆ Have the following emergency plans, equipment and personnel on site where reasonable to deal with all potential emergencies:
  - EMP / risk management / mitigation / emergency response plan and HSE manuals
  - Adequate protection and indemnity insurance cover for incidents;
  - Comply with the provisions of all relevant safety standards;
  - Procedures, equipment and materials required for emergencies.
- ◆ If one has not already been established, establish and maintain a fund for future ecological restoration of the project site should project activities cease and the site is decommissioned and environmental restoration or pollution remediation is required.
- ◆ Establish and / or maintain a bi-annual reporting system to report on aspects of construction activities, operations and decommissioning as outlined in the EMP.
- ◆ Submit bi-annual reports to the MEFT to allow for ECC renewal after three years. This is a requirement by MEFT.
- ◆ Appoint a specialist environmental consultant to update the EIA and EMP and apply for renewal of the ECC prior to expiry.

### **6.1.2 Employment**

Operations and maintenance of the facility relies on employment. Skilled and unskilled labourers are employed or contracted for various tasks of operations, construction and maintenance. Unskilled labour may be sourced locally while it is expected that skilled contractors within Namibia will be used for specialised work. The presence of the facility therefore contributes to employment creation in the skilled and unskilled labour sector.

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

#### **Actions**

##### **Enhancement:**

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

##### **Responsible Body:**

- ◆ Proponent

##### **Data Sources and Monitoring:**

- ◆ Bi-annual summary report based on employee records.

### **6.1.3 Skills, Technology and Development**

Training is provided to a portion of the workforce to be able to perform their duties according to the required standards. Skills are transferred to an unskilled workforce for general tasks. Development of people and technology are key to economic development of the town, region and nationally.

**Desired Outcome:** To see an increase in skills of local Namibians, as well as development and technological advancements in the petroleum industry.

#### **Actions**

##### **Enhancement:**

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

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

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

#### **6.1.4 Revenue Generation**

The sale of fuel contributes to revenue generation which is paid to the national treasury while also contributing to the local economy in terms of increased spending power of employees as well as through the sourcing of goods and services.

**Desired Outcome:** Generation of revenue for the town and Namibia as a whole.

##### **Actions**

##### **Enhancement:**

- ◆ Goods and services must be sourced locally, if available.
- ◆ Payment of salaries, taxes, levies, etc. in accordance with Namibian legislation and requirements.

##### **Responsible Body:**

- ◆ Proponent

##### **Data Sources and Monitoring:**

- ◆ Financial records on file.

### **6.1.5 Fuel Supply**

The operations of the facility will continue to aid in securing fuel supply to the transport industry and businesses in Walvis Bay.

**Desired Outcome:** Ensure a secure fuel supply remains available.

#### **Actions**

##### **Enhancement:**

- ◆ Ensure compliance to the petroleum regulations of Namibia.
- ◆ Proper fuel management to ensure a constant, secure supply of fuel.
- ◆ Record supply problems and take corrective actions when needed.

##### **Responsible Body:**

- ◆ Proponent

##### **Data Sources and Monitoring:**

- ◆ Record supply problems and corrective actions taken.

### **6.1.6 Demographic Profile and Community Health**

The project relies on labour for operations and maintenance. Job seekers often flock to urban centres with the hope of being employed. This can lead to increased unemployment in the urban centres with associated development of informal settlements. Exposure to factors such as communicable disease like HIV/AIDS as well as alcoholism/drug abuse may impact the local community. This is often associated with unemployment as well as the trucking industry.

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

#### **Actions:**

##### **Prevention:**

- ◆ Employ only local people from the area, deviations from this practice should be justified appropriately.
- ◆ Adhere to all municipal by-laws relating to environmental health and sanitation requirements on site.
- ◆ Educational programmes or information sessions for employees on prevention of communicable diseases and general upliftment of employees' social status.
- ◆ Appointment of reputable contractors when needed.
- ◆ Prohibit illegal parking and loitering on and around the site.

##### **Responsible Body:**

- ◆ Proponent

##### **Data Sources and Monitoring:**

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



### **6.1.7 Traffic**

The presence of the facility may have increased the traffic flow to the light industrial area through the provision of fuel. However, the bulk of the clients operate from the light industrial area and are thus present regardless of the Proponent's operations. An increase in traffic to the and from the site may increase congestion in Rössing Street and this may increase the risk of incidents and accidents. The presence of the facility near the clients, reduces the need for trucks to enter the town where traffic impacts will be more profound.

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

#### **Actions**

##### **Prevention:**

- ◆ Erect and maintain clear signage regarding access and exit points at the facility.
- ◆ Tanker trucks delivering fuel and trucks collecting fuel should not be allowed to obstruct any traffic or entrances/exits of facilities in Rössing Street or surrounding streets.
- ◆ Trucks entering and exiting the facility should not be allowed to make sharp turns on Rössing Street, as this may result in traffic issues and damage to the road infrastructure.

##### **Mitigation:**

- ◆ If any traffic impacts are expected, traffic management should be performed to prevent these.

##### **Responsible Body:**

- ◆ Contractors
- ◆ Proponent

##### **Data Sources and Monitoring:**

- ◆ Any complaints received regarding traffic issues should be recorded together with action taken to prevent impacts from repeating itself.
- ◆ A bi-annual report should be compiled of all incidents reported, complaints received, and action taken.

### 6.1.8 Health, Safety and Security

Activities associated with the facility are reliant on human labour and therefore exposes them to health and safety risks. Activities such as the operation of machinery and handling of hazardous chemicals (inhalation and carcinogenic effect of some petroleum products), poses the main risks to employees. Security risks are related to unauthorized entry, theft and sabotage.

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

#### **Actions**

##### **Prevention:**

- ◆ Clearly label dangerous and restricted areas as well as dangerous equipment and products.
- ◆ Provide all employees with required and adequate personal protective equipment (PPE).
- ◆ Ensure that all personnel receive adequate training on operation of equipment/handling of hazardous substances.
- ◆ All health and safety standards specified in the Labour Act should be complied with.
- ◆ Implementation of maintenance register for all equipment and fuel/hazardous substance storage areas.
- ◆ Pedestrian management and safe walkways should be present to prevent safety risk to pedestrians travelling along Rössing Street.
- ◆ Equipment that will be locked away on site must be placed in a way that does not encourage criminal activities (e.g. theft).

##### **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 pipes, 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, especially during cash in transit activities.
- ◆ Reduce the amount of cash kept on site to reduce the risk of robberies.
- ◆ Strict security that prevents unauthorised entry during construction phases.

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

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

### 6.1.9 Fire

Operational and maintenance activities may increase the risk of the occurrence of fires. The site is located in a developed area which may increase the difficulty of fighting fires. The facility will only store diesel which is not as flammable as more volatile fuels.

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

**Actions:**

**Prevention:**

- ◆ Ensure all chemicals are stored according to MSDS and SANS instructions.
- ◆ Maintain regular site, mechanical and electrical inspections and maintenance.
- ◆ Clean all spills/leaks.
- ◆ Special note must be taken of the regulations stipulated in sections 47 and 48 of the Petroleum Products and Energy Act, 1990 (Act No. 13 of 1990).
- ◆ Follow SANS standards for the operation and maintenance of the facility.
- ◆ All dispensers must be equipped with devices that cut fuel supply during fires.
- ◆ The proponent should liaise with the local Fire Brigade to ensure that all fire requirements are met. This includes, but is not limited to SANS 10400 T: 2011.

**Mitigation:**

- ◆ A holistic fire protection and prevention plan is needed. This plan must include an emergency response plan, firefighting plan and spill recovery plan.
- ◆ Maintain firefighting equipment, good housekeeping and personnel training (firefighting, fire prevention and responsible housekeeping practices).

**Responsible Body:**

- ◆ Proponent

**Data Sources and Monitoring:**

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

### **6.1.10 Air Quality**

Fuel vapours are released into the air during refuelling of bulk storage tanks as well as at filling points. Prolonged exposure may have carcinogenic effects. Dust may be generated during construction.

**Desired Outcome:** To prevent health impacts and minimise the dust generated.

#### **Actions**

##### **Mitigation:**

- ◆ Personnel issued with appropriate masks where excessive dust or vapours are present.
- ◆ A complaints register should be kept for any dust related issues and mitigation steps taken to address complaints where necessary e.g. dust suppression.
- ◆ Employees should be coached on the dangers of fuel vapours.
- ◆ Venting must be as per SANS requirements.

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

- ◆ Any complaints received regarding dust or fuel vapours should be recorded with notes on action taken.
- ◆ All information and reporting to be included in a bi-annual report.

### 6.1.11 Noise

Construction activities related to maintenance and upgrades may generate noise. Hearing loss of workers on site may occur when very noisy activities related to maintenance and upgrades are performed. During operations, noise pollution will exist due to vehicles accessing the site to offload fuel or refuel. The facility is however situated in a light industrial area, thus noise impacts is not expected to negatively affect neighbouring businesses.

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

#### **Actions**

##### **Prevention:**

- ◆ Follow health and Safety regulations of the Labour Act for permissible noise exposure in the work environment. World Health Organization (WHO) guidelines on maximum noise levels (Guidelines for Community Noise, 1999) to nuisances at neighbours should also be considered.
- ◆ All machinery must be regularly serviced to ensure minimal noise production.
- ◆ Manage noise caused by clients refuelling at the facility e.g. loud music etc.

##### **Mitigation:**

- ◆ Hearing protectors as standard PPE for workers in situations with elevated noise levels.

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

- ◆ Labour Act and WHO Guidelines.
- ◆ Maintain a complaints register.
- ◆ Report on complaints and actions taken to address complaints and prevent future occurrences.

### **6.1.12 Waste Production**

Waste is produced during the maintenance, upgrades and the operational phase. Waste may include hazardous waste associated with the handling of hydrocarbon products etc. Domestic waste is generated by the facility and related operations. Waste presents a contamination risk and when not removed regularly may become a fire hazard. Construction waste may include building rubble and discarded equipment contaminated by hydrocarbon products. Contaminated soil and water is considered as a hazardous waste.

**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 temporary waste storage facilities are available.
- ◆ Ensure waste cannot be blown away by wind.
- ◆ Prevent scavenging (human and non-human) of waste.
- ◆ All regulation and by-laws relating to environmental health should be adhered to.

##### **Mitigation:**

- ◆ Waste should be disposed of regularly and at appropriately classified disposal facilities, this includes hazardous material (empty chemical containers, contaminated rugs, paper water and soil).
- ◆ The spill catchment traps should be cleaned regularly and waste disposed of appropriately. Surfactants (soap) may not be allowed to enter the oil water separator.
- ◆ See the material safety data sheets available from suppliers for disposal of contaminated products and empty containers.
- ◆ Liaise with the municipality regarding waste and handling of hazardous waste.

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

- ◆ A register of hazardous waste disposal should be kept. This should include type of waste, volume as well as disposal method/facility.
- ◆ Any complaints received regarding waste should be recorded with notes on action taken.
- ◆ The oil water separator must be regularly inspected and all hydrocarbons removed once detected. Outflow water must comply with effluent quality standards.
- ◆ All information and reporting to be included in a bi-annual report.

### **6.1.13 Ecosystem and Biodiversity Impact**

The nature of the operational activities is such that the probability of creating a habitat for flora and fauna to establish is low. No significant impact on the biodiversity of the area is expected from normal operations. Impacts are therefore mostly related to pollution of the environment as well as potential impacts of bright lights on birds flying at night.

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

#### **Actions.**

##### **Mitigation:**

- ◆ Report any extraordinary animal sightings to the MEFT.
- ◆ Mitigation measures related to waste handling and the prevention of groundwater, surface water and soil contamination should limit ecosystem and biodiversity impacts.
- ◆ Avoid scavenging of waste by fauna.
- ◆ Direct all lights down to working surfaces and use minimal lighting at night.
- ◆ The establishment of habitats and nesting sites at the facility should be prevented where possible.

##### **Responsible Body:**

- ◆ Proponent

##### **Data Sources and Monitoring:**

- ◆ All information and reporting to be included in a bi-annual report.

#### **6.1.14 Groundwater, Surface Water and Soil Contamination**

Operations entail the storage and handling of diesel which presents a contamination risk. Contamination may either result from failing storage facilities, or spills and leaks associated with fuel handling.

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

##### **Actions**

##### **Prevention:**

- ◆ Spill control structures and procedures must be in place and maintained according to SANS standards or better.
- ◆ All fuelling should be conducted on surfaces provided for this purpose. E.g. Concrete slabs with regularly maintained seals between slabs.
- ◆ The procedures followed to prevent environmental damage during service and maintenance, and compliance with these procedures, must be audited and corrections made where necessary.
- ◆ Proper training of operators must be conducted on a regular basis (fuel handling, spill detection, spill control).

##### **Mitigation:**

- ◆ Any spillage of more than 200 l must be reported to the Ministry of Mines and Energy.
- ◆ Spill clean-up means must be readily available on site as per the relevant MSDS.
- ◆ Any spill must be cleaned up immediately.
- ◆ The spill catchment traps should be cleaned regularly and waste disposed of at a suitably classified hazardous waste disposal facility.
- ◆ Surfactants (soap) may not be allowed to enter an oil water separator e.g. soap usage on spill control surfaces.
- ◆ Inspections and fuel volume reconciliations should be performed daily in order to allow for timely detection of any leakages.

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

- ◆ A report should be compiled bi-annually of all spills or leakages reported. The report should contain the following information: date and duration of spill, product spilled, volume of spill, remedial action taken, comparison of pre-exposure baseline data (previous pollution conditions survey results) with post remediation data (e.g. soil/groundwater hydrocarbon concentrations) and a copy of documentation in which spill was reported to Ministry of Mines and Energy.



### **6.1.15 Visual Impact**

This impact is not only associated with the aesthetics of the site, but also the structural integrity. The facility forms part of the industrial landscape associated with the area. The site is kept clean, tidy and maintained to ensure it remains aesthetically pleasing and does not add the urban decay.

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

#### **Actions**

##### **Mitigation:**

- ◆ Regular waste disposal, good housekeeping and routine maintenance on infrastructure will ensure that the longevity of structures are maximised and a low visual impact is maintained.

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

- ◆ A maintenance record should be kept.
- ◆ A report should be compiled of all complaints received and actions taken.

### **6.1.16 Cumulative Impact**

Possible cumulative impacts associated with the operational phase include increased traffic in the area. This will have a cumulative impact on traffic flow on surrounding streets. The overall ambient noise levels will also be elevated during operational times, but this is expected within industrial type areas.

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

#### **Actions**

##### **Mitigation:**

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

##### **Responsible Body:**

- ◆ Proponent

##### **Data Sources and Monitoring:**

- ◆ Bi-annual summary report based on all other impacts must be created to give an overall assessment of the impact of the operational phase.

## **6.2 DECOMMISSIONING AND REHABILITATION**

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

## **7 CONCLUSION**

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The EMP should be used as an on-site reference document for all the operational activities. Parties responsible for transgression of the EMP should be held responsible for any rehabilitation that may need to be undertaken. The Proponent should use / develop their own in-house safety, health and environmental policies and standards in conjunction with the EMP. It is imperative that all construction and operational personnel are taught the contents of these documents to ensure better environmental practises all round.

## **8 REFERENCES**

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Faul A, Coetzer W. 2021 September. Construction and operational activities of Bachmus Oil & Fuel Supplies' Proposed Depot in the New Light Industrial Area of Walvis Bay.