# ENVIRONMENTAL MANAGEMENT PLAN

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE ESTABLISHMENT & OPERATION OF A FUEL STORAGE AND TRUCK PORT FACILITY IN WALVIS BAY

#### PREPARED FOR:

BIP Service Station and Truck Port CC

#### PREPARED BY:

**Environam Consultants Trading** 



**NOVEMBER 2020** 

Project:	ENVIRONMENTAL IMPACT ASSESSMENT FOR THE ESTABLISHMENT & OPERATIONS OF A FUEL STORAGE AND TRUCK PORT FACILITY IN WALVIS BAY
Report Version/Date	Draft Report / November 2020
Prepared For:	BIP Service Station and Truck Port CC
Prepared By:	Environam Consultants Trading
Coordinated By:	Rauna Nghifikwa
Acknowledgement & Contributors By:	Colin P Namene

# Table of contents

1.	Introduction	4
2.	Objectives of the EMP	5
3.	Scope of an Environmental management plan	5
;	3.1. Dust Impacts	6
;	3.2. Noise Pollution	6
;	3.3 Traffic Impacts	6
;	3.4 Health and Safety Impacts	6
;	3.5 Soil and Underground Water Contamination	6
3	3.6 Socio-economic Impacts	6
4.	The implementation of the Environmental Management Plan	7
5.	Conclusion	22
	<u>List of tables</u>	
Та	ble 1: Management activities for the development	8

#### 1. Introduction

BIP service station and truck port has a mission to develop logistic and petroleum solutions that are safe, profitable and create maximum value with a long-term goal of making sustainability as key goal of the business and to establish longevity in this process, the mixed model is key to the business and its locations.

The Environmental Management Plan (EMP) is a site-specific plan developed to ensure that the project is implemented in an environmentally sustainable manner where all contractors and subcontractors, including consultants, understand the potential environmental risks arising from the proposed project and take appropriate actions for risk management. The EMP also ensures that the project implementation is carried out in accordance with the design by taking appropriate mitigative actions to reduce adverse environmental impacts during its life cycle.

Environam Consultants Trading has been appointed by BIP Service Station & Truck port cc to undertake the EIA process and to apply for an ECC, in terms of Section 32 of the EMA and section 6 of the Environmental Impact Assessment Regulations of 2012.

Walvis Bay itself is a growing town with huge potential, it is currently the third largest town in Namibia, and it has the largest commercial harbor in the country. Over the last number of years Walvis Bay has become the center of development in the country as it has seen several large projects such as the expansion of the port and the new national fuel storage terminal. These projects all have an aim of making Walvis Bay a logistics hub within Southern Africa.

Given the above, the proposed project will not only complement these efforts but add significant value to the logistics industry and much needed employment to the town. This will be the first commercial truck port facility in the town. The development will consist of the following aspects:

- A commercial truck port facility that will be 20 170 m<sup>2</sup> in extend with parking space for up to 45 trucks at any given point in time. There will be a security office, an administration office, and an ablution block. Truck drivers will have access to a cafeteria/shop and shower facilities.
- Fuel station and convenience store that will cater for both light motor vehicles and trucks for filling up. The light motor vehicle section will have a canopy housing 3 pumps with 6 bays and the trucking section will have 2 pump stations that will fill up 4 trucks at a time. The fuel station will have footprint of 500 m² and the convenience store will be 380 m² in size.
- Wheel alignment and balancing center occupying 384 m² and catering both light and heavy motor vehicles.
- Commercial weighbridge facility, with the size of 250 m × 5 m (1250 m<sup>2</sup>) and will enable trucks to check their weight and re-package their load if need be before being weighed at the Roads Authority Weighbridge Walvis Bay to avoid potential fines.

Namibia is set to see a boom in logistics traffic with neighboring countries making more and more use of the port of Walvis Bay for their import and export needs. This is because of several reasons according Namport's 2018 State of Logistics report. These include the following:

- Deepening and expansion of the harbor: As mentioned the container handling capacity was doubled. This will drastically increase the number of trucks visiting the port town.
- Efficiency of the port: Walvis Bay has one of the best turnaround times in the region and this is becoming more and more important to mines particularly.

Other regional ports becoming less desirable: Traditionally the busiest ports in the
region were the ports of Durban and Dar es Salaam. With the civil unrest in South
Africa that was targeted at foreign truck drivers a number of these trucking companies
are now looking at alternative routes. Dar es Salaam is one of the most congested
ports in Africa and turnaround time has become a major concern as these delays
increase costs significantly.

According to the (Road's Authority annual report 2019) 71 394 trucks were weighed at the town's weighbridge. This is a good indication of the number of trucks that pass through the port town. This translates to at least 200 trucks passing through the town every day.

# 2. Objectives of the EMP

The primary purpose of this EMP is to establish the Environmental Protection Procedures to be implemented by BIP station and truck port staff, consultants, and contractors. BIP station service station and truck port will commit to developing and implementing a comprehensive EMP to help ensure a high level of environmental protection throughout the development. This EMP provides the protection procedures associated with both planned activities anticipated for the construction and operations of the terminal as well as for accidental events.

The purpose of the EMP is to:

- Ensure that commitments to minimize environmental effects are met;
- Document environmental concerns and appropriate protection measures;
- Provide concise and clear instructions to project personnel such as BIP service station & truck port staff and contractors regarding procedures for protecting the environment and minimizing environmental impact;
- Identify a range of mitigation measures which could reduce and mitigate the potential impacts to minimal or insignificant levels;
- To identify measures that could optimize beneficial impacts;
- To create management structures that address the concerns and complaints of stakeholders with regards to the development;
- To establish a method of monitoring and auditing environmental management practices during all phases of development;
- Ensure that the construction and operational phases of the project continues within the principles of Integrated Environmental Management;
- Detail specific actions deemed necessary to assist in mitigating the environmental impact of the project;
- Ensure that the safety recommendations are complied with;
- Propose mechanisms for monitoring compliance with the EMP and reporting thereon;
   and
- Specify time periods within which the measures contemplated in the final environmental management plan must be implemented, where appropriate.

# 3. Scope of an Environmental management plan

The initial focus of the EMP is the protection of the environmental habitats and traffic management due to increase in truck movement as well as those activities under the direct control of BIP Service Station & Truck Port management where activities may give rise to significant environmental impacts, the EMP includes several priority strategies and actions relating to these locations.

# 3.1. Dust Impacts

Dust pollution impacts can be expected on the surrounding environment due to the construction scope. The area also lacks tarred roads and because of movement of heavy vehicles to and from the facility during construction could cause dust pollution. The facility should also have pave blocks that will prevent dust emissions as trucks are moving in and out.

#### 3.2. Noise Pollution

During both the construction and operation phases is it important to maintain the noise level within the maximum allowed decibels for the safety and health of residents and users. Smooth flow of traffic will be ensured on the internal road to avoid idling of vehicles.

# 3.3 Traffic Impacts

The impact on traffic during the operation phase will be due to movement of trucks and other vehicles into the facility for dispensing of fuel and other vehicles.

# 3.4 Health and Safety Impacts

The fuel attendant must be aware of proper fuel handling procedures to minimize the risk of a spill and shall continuously scan the area adjacent to the fueling operation for possible leaks or spills. The attendant must know all the procedures to be followed when dispensing fuel to avoid risks that may affect their health.

# 3.5 Soil and Underground Water Contamination

The operations of a fuel storage tanks have the possibilities of a spillage which could contaminate the soil and could get drained into the ground and contaminate the underground water. There will be pavements around the tanks that prevents oil spillages and avoids contamination to the soil and to the underground water.

# 3.6 Socio-economic Impacts

During the operation phase, precautions will be taken to ensure the health and safety of the residents and the users and operators. Firefighting systems should be provided closer to the fuel storage facility and proper training should be given to operators on how to handle the products.

# 4. The implementation of the Environmental Management Plan

The construction phase of the project implements and places into action all of the planning and scheduling which has been previously discussed. The construction activities required to complete a job and the orderly flow of work associated with those activities should be clearly shown on the construction schedule of the process as shown in **Table 1** below. The operational phase is the most critical component of Environmental Management because it is normally associated with several impacts. The phase comprises of the actual operation of the fuel storage facility. There will be several impacts that will occur daily or other sequential routine. The operational phase forms the basis of an Environmental Management Plan and it will be followed by the decommissioning phase. The major impacts identified by this study for the operational and decommissioning phase are also detailed below (**Table 1**). All monitoring results must be reported on as indicated.

Table 1: Management activities for the development

Potential Impact	Mitigation measures	Monitoring	Responsibility	
CONSTRUCTION PHASE				
Noise, dust, and vibration and air pollution generation by earth moving vehicles	Where possible, manual labour is recommended in the construction phase for some activities to reduce the noise and dust emitted by construction machinery e.g. land clearing.	Regular visual inspection.	Director	
	<ul> <li>Construction works to be carried out only during the day (i.e. 06:00 -18:00).</li> <li>Placement of billboards at the construction site notifying of the construction activity and timings.</li> <li>Sensitize construction vehicles drivers and machinery operators to switch off engines of vehicles when not in use.</li> </ul>	Regular visual inspection and supervision.	Contractor	
Interrupt groundwater resources due to excavation works	<ul> <li>All excavation works limited to 4.5 m below ground surface</li> <li>Should groundwater table be intercepted at any depth less than expected, all works to stop. The excavated area backfilled to at least 1m of prior depth and construction</li> </ul>	<ul> <li>Measurements to be done whenever excavation is done to make sure it does not go beyond 4.5 m.</li> <li>Regular inspections and supervision</li> </ul>	Contractor	

	of containment floor to proceed.		
Safety of local community from earth moving machinery	<ul> <li>Construction activities should be done only during the day during prescribed hours.</li> <li>Place signage to inform and caution the public when works starts and when it will be completed.</li> <li>No unauthorised persons should be allowed onsite</li> <li>Barricade the construction area where possible.</li> </ul>	Regular inspections on the schedules.	Contractor
Accidental oil or fuel spill or leakage from the earth moving machinery and equipment's used onsite	<ul> <li>Daily inspection of all machinery before use for any signs of leaks for oil or fuels and continuous observation during operations to avoid excess leakages to the ground</li> <li>The following spill control plan to implement to manage emergencies that may occur/arise in the event of accidental spills or leakage.         <ul> <li>Prioritize the containment of the source of the leak or spill</li> <li>Removal or scooping of the contaminated soils to demarcated area with undelaying containment lining e.g. plastic lining disposal area to allow for volatilization of excess hydrocarbons.</li> <li>Conduct trainings on operators on spill prevention</li> </ul> </li> </ul>	Monitoring control checks     Refresher awareness on the operators.	Contractor

	measures and accidental spill handling measures.		
	<ul> <li>Any spillage of more than 200 litres must be reported to the relevant authorities and remediation instituted as per section 49 of the Petroleum Products and Energy Act, 1990 (Act No. 13 of 1990).</li> </ul>		
Obstruction of hydrological drainage flow paths	<ul> <li>A 10 - 15m buffer zone created between the first culvert on west of the proposed site.</li> <li>No placement of materials and compacting should be done within the established buffer zone.</li> </ul>	<ul> <li>Continuous inspection and monitoring</li> </ul>	Contractor
Creation of temporary labour	<ul> <li>Prioritize locals for employment</li> </ul>	Positive impact	Director
Increase prevalence of STD/HIV in the area from flow of people looking for temporary employment	<ul> <li>Contractor should allocate time for the employees to visit their families.</li> <li>Sensitize employees on HIV/AIDS and STDs.</li> <li>Prioritize the hire of locals for any temporary works</li> </ul>	<ul> <li>Regular awareness on HIV/AIDS</li> </ul>	Contractor
Generation of solid waste	<ul> <li>Establish a controlled solid waste collection point.</li> <li>Non-combustible waste collected to be channeled to the approved Municipality of Walvis Bay's landfill site.</li> </ul>	<ul> <li>Collection point to be regularly monitored and inspected to make sure that there is no buildup of solid waste.</li> </ul>	Contractor
Damage to existing infrastructure/Utility lines	<ul> <li>Place warning signs and ensure construction teams operates responsibly in the area.</li> </ul>	<ul> <li>Inspection and monitoring checks to make sure that construction taking place does not damage any existing infrastructure.</li> </ul>	Director

Obstructing traffic flow on the M36 highway	<ul> <li>Place temporary construction signage by the M36 highway roadside to caution road users in both directions.</li> <li>Contractor must ensure that there is always a supervisor on site to ensure that no driver under the influence of alcohol or narcotics is driving company vehicles.</li> <li>Ensure all drivers employed have valid driver's licenses of vehicle types they are employed for and that they have experience in driving those vehicles.</li> </ul>	Inspection checks through supervisory controls.	Contractor
Health and safety risk exposure	<ul> <li>Contractor to ensure that all staff on site are provided with protective equipment (helmets, gloves, respirators, work suits, earplugs, goggles, and safety shoes where applicable).</li> <li>Safety talks to be done every day before commencement of work.</li> <li>Ensure provisions of immediate accident/incident reporting, investigation and rectification of faults and closeout.</li> <li>Provide onsite first aid kit and training for minor incidents.</li> </ul>	Continuous inspection	Contactor

	Ensure arrangement for timely access to medical treatment where incidents are beyond first aid and local clinic level.		
Obstruction of road traffic flow along the M36 highway	<ul> <li>Transportation of materials should be undertaken during off-peak hours for traffic to prevent substantial traffic flow disturbance.</li> <li>Where possible source basic construction materials from locals and consideration for local materials in the construction process.</li> </ul>	In cases where materials are needed between peak hours, transportation to be done at a slow pace.	Directors
OPERATIONAL PHASE			

Spillage of Petroleum Products due to road accident	<ul> <li>Ensure the supplier drivers are well trained with valid driver's license for specific vehicles used.</li> <li>Ensure truck drivers are well trained on spill handling protocol.</li> <li>Ensure that supplier continuously monitors the delivery vehicles throughout the route i.e. speed and location at all times</li> <li>Any spillage of more than 200 liters must be reported to the relevant authorities and remediation instituted as per section 49 of the Petroleum Products and Energy Act, 1990 (Act No. 13 of 1990).</li> <li>Refresher trainings to be given to the drivers more often.</li> </ul>
Risk of fire and explosion	<ul> <li>Ensure supplier has fitted adequate firefighting equipment's on all delivery Directors Contracting of supplier's vehicles.</li> <li>Ensure all vehicle drivers are adequately trained on firefighting.</li> <li>Ensure suppliers regularly require drivers to update their firefighting skills through regular drills and maintain records</li> <li>Refresher training safety to be given to operators more often.</li> <li>Directors</li> </ul>

Leakage or spillages to adjacent soils and possibly groundwater	Develop procedures that includes all aspects of the	regular basis to refresh the	ectors and Station managers
	includes all aspects of the delivery or loading operation from arrival to departure, including wheel blocking to avoid vehicle movement, connection of grounding systems, verification of proper hose connection and disconnection, adherence to no-smoking and no-naked light policies for visiting drivers, among other considerations.  • All fuel transfers to be undertaken on concrete bounded/paved areas.  • Fuel pipes should have suitable fittings to ensure a secure, leak-proof connection with the hoses from delivery trucks.  • Such fittings should have provision for a locking device that prevents unauthorized	•	ectors and Station managers
	<ul> <li>access.</li> <li>Deliveries should be conducted by properly trained personnel according to established formal procedures.</li> </ul>		
	<ul> <li>Nozzles fitted with automatic shut off devices.</li> <li>Where fuel pipes are above ground, the height should be below the minimum height of the delivery tanker's bottom loading adaptor to ensure</li> </ul>		

Hydrocarbon gaseous escapes	proper draining of the hose contents into the storage tanks.  Install sand bucket to clean minor spillages at the Service Station.  Nozzles fitted with automatic	Regular maintenance	Station Managers and Operators
	shut off devices. Station Manager available during all delivery times.  Provide gas masks for people offloading the fuel.  Ensure that vent pipes for pressure release of fuels in the tanks are high enough and placed far from people activities.	checks	
Nozzle drippings, accidental spills, and vehicle tank overflows	<ul> <li>Nozzles fitted with automatic shut off mechanism devices.</li> <li>The entire fueling area to be constructed with containment concrete slabs cover/floor designed with U-shape surfaces to prevent petroleum products meeting soils.</li> <li>Ensure that all fuel attendants are well trained to operate fuel pumps to prevent excessive spillages.</li> <li>Use of sand buckets to treat minor spills with proper after use handling of contaminated sand.</li> </ul>	Regular maintenance checks and monitoring	Directors and Station managers
USTs and connecting system failures inclusive of corrosive effects or damage to piping's and associated	Underground Storage Tanks (USTs) whether constructed from steel or fiberglass reinforced plastic, should be	Proper painting to be done at construction phase	Directors

fittings	designed, and built according to recognized industry standards. SANS 10089-3:2010 as recognized by MME recommended.  • USTs should have secondary containment systems to prevent the uncontrolled release of fuel. Secondary containment systems may consist of:  • Double wall construction for Underground Storage Tanks (USTs)  • Connection to a continuous leak detection strategy that includes groundwater monitoring downstream of the USTs, these shall be established upon final design of the location of the USTs.  • All storage tanks should undergo periodic inspection for corrosion and structural integrity and be subject to regular maintenance and replacement of equipment (e.g. pipes, seals, connectors, and valves).
Risk of fire and explosion	<ul> <li>Install an automatic fire alarm system with heat and smoke detectors in all buildings.</li> <li>Ensure that all firefighting equipment are strategically</li> <li>Regular inspections on the risks of fire explosions and safety trainings</li> </ul>

	positioned, regularly maintained, and serviced.  Provide for emergency fire hydrants/piping connections with direct link to water storage tanks for firefighting. Provide fire hazard signs such as 'No Smoking' signs, direction to exit in case of any fire incidence and emergency contact numbers, fire assembly point and no cell phone usage close to fueling pumps.  Conduct regular fire drills/simulations to sensitize workers and maintain records.  Provisions of marked fire exits and ensure that these exits are always unobstructed.  Ensure customer switch off their engine while refueling
Solid waste generation	<ul> <li>Set up waste bins for solid waste collection at various points of the station.</li> <li>Establish waste separation protocols to ensure separate handing and management.</li> <li>Seek opportunities for private companies handling recyclable waste.</li> <li>Engage existing local authorities on disposal of non-combustible and non-recyclable waste.</li> <li>Inspections of whether the bins area is clean and they are being used.</li> <li>Station manager</li> </ul>

Permanent employment opportunities	<ul> <li>Consider the application of the labour Act in hiring and welfare of Employees</li> </ul>	Positive impact	Directors
Risk to health and safety of workers	<ul> <li>A first aid kit should be provided within the site and should be fully equipped with essential first aid supplies.</li> <li>Provide employees with personal protective clothing where possible in accordance with specific designated tasks.</li> <li>At least one to two employees trained in first aid to handle minor incidental cases.</li> <li>Ensure timely access to local or regional health facility for cases beyond first aid level.</li> <li>Encourage regular health check-ups for employees at local clinic to establish health status.</li> <li>Adhere to existing Covid-19 health protocols.</li> </ul>	Refresher trainings on Health and Safety	Station Manager
Contaminated wastewater from wash bays and paved area	<ul> <li>All wash bays designed with U-shape concrete floors to allow draining of wastewater towards treatment point.</li> <li>Car wash areas and other places handling oil activities within the site should be well managed and drains from these areas controlled and inspected regularly for blockages.</li> </ul>	Inspections on the handling of oil and the areas.	Directors

		1	
	<ul> <li>Oil interceptors should be installed along the drains leading from such areas with regular removal of accumulated oily residues to waste collection point for use in managed incineration of combustible waste.</li> <li>Treated water can be reused for dust suppression or other.</li> <li>All paved areas to be fitted with drainages to allow channel flow of water to treatment point prior discharge or re-use</li> </ul>		Directors
Oil or petroleum drips or leaks from parked large and small vehicles	<ul> <li>All parking bays for trucks partially lined with a mixture of gravel stones and sand to prevent contamination of undelaying soils and groundwater.</li> <li>All parking and loading bays for smaller vehicles should be paved to prevent all possible leaks from contaminating adjacent soils.</li> </ul>	General area inspections on oil leaks.	Directors
Contamination of adjacent soils from repairs and maintenance of buildings and other infrastructure onsite	<ul> <li>Any maintenance work should be carried out in a designated area (protected service bays) and where oil spills are completely restrained from reaching the ground.</li> </ul>	Maintenance to be monitored always.	Station Manager
Disposal of defunct equipment's and replaced items as well as contaminated products	<ul> <li>Continuously look for opportunities for re-use of defunct items for other purposes or uses in other areas than disposal.</li> </ul>	Continuous checks on the defunct equipment	Station Manager

Monitoring and evaluation	<ul> <li>Where items may not be re- usable ensure safe disposal at appropriate disposal site</li> <li>Submit bi-annual monitoring</li> </ul>	Regular inspections and	
	and evaluation reports timely to the Ministry of Environment Forestry and Tourism	subsequent reporting.	
	DECOMMISSION	ONING PHASE	
Air pollution, noise and dust generation	<ul> <li>Same mitigation measures as construction phase applies.</li> </ul>	Same monitoring as in the construction phase	Contractor
Spillage of remnant oils and fuels onto the soils	<ul> <li>Adhere to established standards on decommissioning of fuel facilities relating to removal of tanks and handling of all related activities to prevent contamination of adjacent soils.</li> <li>All such removals to be carried out prior the dismantling of containment pavement to prevent remnant petroleum from encountering adjacent soils.</li> </ul>	Monitoring of activities that could cause contamination to the soil	Contractor
Risk to health and safety of workers	<ul> <li>Same mitigation measures as construction phase applies.</li> </ul>	Same monitoring as in the construction phase	Contractor
Degradation of the local environment	<ul> <li>Demolished and excavated materials will be used as backfills for trenches.</li> <li>Wastes should be properly separated to encourage recycling of some useful items</li> <li>All contaminated soils be handled according to the</li> </ul>	Monitor the environmental effects that could be caused by the demolishing.	Contractor

	established spill handling protocol to avoid further contamination of adjacent areas and other natural resources.		
Risk to health and safety of the community	<ul> <li>Consider safe re-use of certain items in other ways</li> <li>All items and materials that are non-reusable to be disposed safely at appropriate disposal sites</li> </ul>	Make sure that all waste is well disposed.	Directors

### 5. Conclusion

There will be minimized unfavorable impacts on the environment if the Environmental Management Plan is followed and implemented accordingly. Where impacts occur, immediate action must be taken to reduce the increase of effects associated with these impacts. To ensure the relevance of this document to the specific stage of project, it needs to be reviewed throughout all phases especially when there is a change in activities to enhance mitigation measures.

The Environmental Management Plan should be used as a reference document during operational and decommissioning phases. Auditing should take place to determine compliance with the EMP for the proposed facility. Parties responsible for any wrongdoing of the EMP should be held responsible for any rehabilitation that may need to be undertaken.

It is thus recommended for BIP Service Station and Truck Port CC to consider implementing an EMS fit for their operations considering the above key elements for an effective monitoring and evaluation purposes. Bi-annual monitoring reports must be submitted timely to the Ministry of Environment Forestry and Tourism.