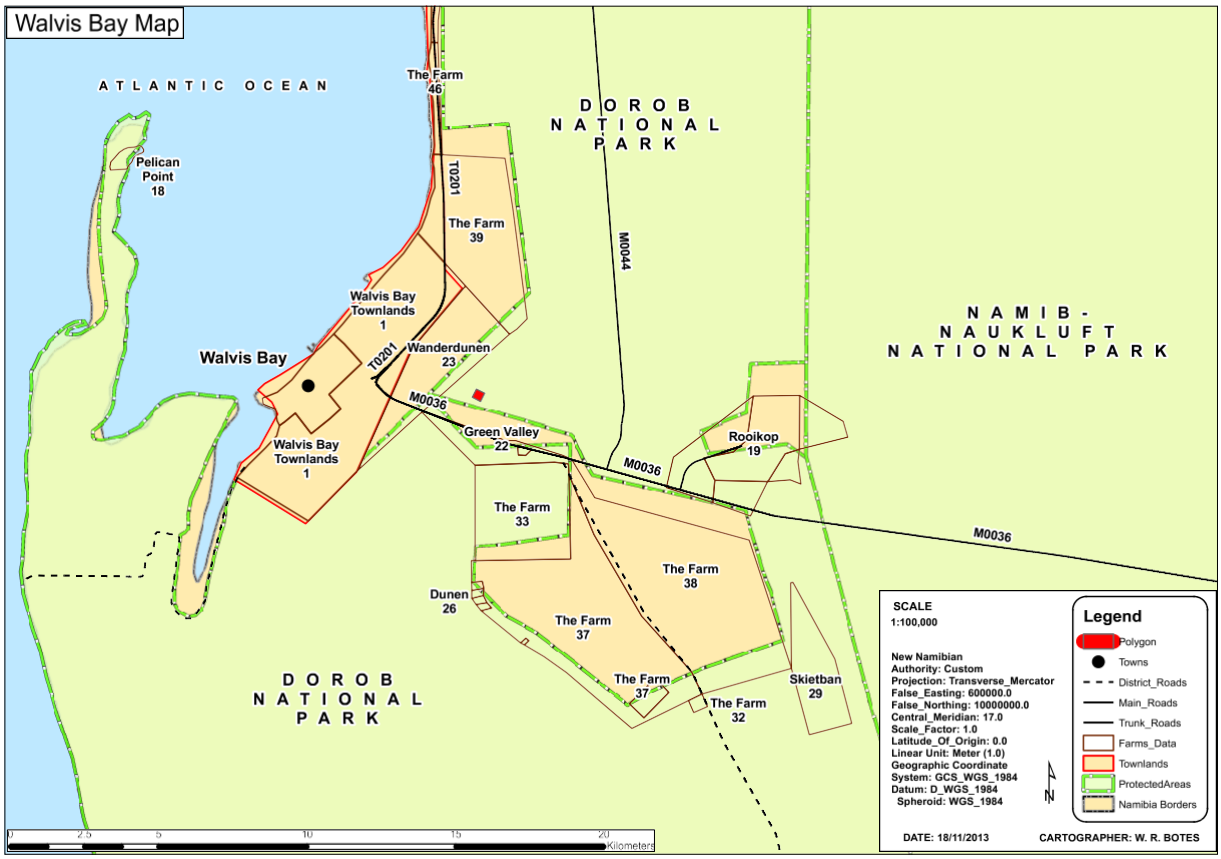
APPLICATION FOR THE RENEWAL OF ENVIRONMENTAL CLEARANCE CERTIFICATE FOR A SAFE STORAGE FACILITY AND HANDLING OF DANGEROUS GOODS, FARM 38, WALVIS MUNICIPAL AREA



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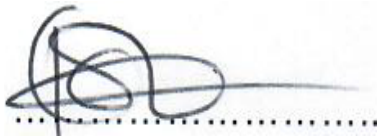
DOCUMENT INFORMATION		
Title	Renewal of Environmental Clearance Certificate for the Safe Storage Facility for the Handling Of Dangerous Goods, Farm 38, Walvis Bay	
ECC Application Reference number		
Listed Activity	Activity 9: Hazardous Substance Treatment, Handling and Storage Activity 1: Energy Generation, Transmission And Storage Activities	
Location	Farm 38 (Eastern Boundary), Walvis Bay	
Proponent	Native Storage Facility cc P.O. Box 80946 Walvis Bay Mr. Thomas Jonas Mobile: +264 812 327 933 Fax No: +264 886 517 450 Email : thomasj@veya.com.na	
Author:	**Signature**	**Date**
Mr. Ipeinge Mundjulu (EAP)[1]		08 June 2020
Reviewer: Mr. Jonas Heita (EAP)		15 June 2020
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1 EAP – Environmental Assessment Practitioner

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

DEA	Department of Environmental Affairs
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner
ECC	Environmental Clearance Certificate
ECO	Environmental Compliance Officer
EIA	Environmental Impact Assessment
EMA	Environmental Management Act (Act No. 7 of 2007)
MET	Ministry of Environment and Tourism
NSF	Native Storage Facility
SM	Site Manager
TEC	Tortoise Environmental Consultants

Executive summary

Native Storage Facility (NSF) Native Storage is a 100% owed Namibian company. The company constructed and is now operating a storage facility for dangerous goods at farm 38 belonging to Walvis Bay Municipality. In accordance to the Environmental Management Act (Act No 7 of 2007), the company obtained an environmental clearance certificate on 30 May 2017 for the storage facility. Under the provision of the EMA, the duration of an environmental clearance certificate remains effective for a period not exceeding three years which is subject to cancellation or suspension. This provision obliges Native Storage to apply for the renewal of environmental clearance certificate which is due to expire on 30 May 2020.

Initially, the company operation did not require electricity, lighting was from solar panel and diesel generator. The company has applied to Erongo Red for electricity. Erongo Red will install electricity power lines from an existing line for a stretch of 3km to the facility. This is the only addendum (amendment) to the environmental management plan. The environmental audit undertaken by Tortoise Consulting did not find non-complying issues. Therefore, TEC recommends for the renewal of the environmental clearance certificate, with the addition of electricity.

1. INTRODUCTION

Native Storage Facility (NSF) is a 100% owed Namibian company. The company specializes in safe storage and handling of dangerous goods. Henceforth, it has constructed and is now operating a storage facility for Ammonium Nitrate at farm 38 belonging to Walvis Bay Municipality Figure 1.

Figure 1. Native storage facility at farm 38

In accordance with accordance to the Environmental Management Act (Act No 7 of 2007), the company obtained an environmental clearance certificate on 30 May 2017 for the storage facility (Appendix E). Under the provision of the EMA, the duration of an environmental clearance certificate remains effective for a period not exceeding three years which is subject to cancellation or suspension.

This document constitutes an updated Environmental Management Plan (EMP) for purpose of renewing the environmental clearance certificate.

1.1 Addendum to the EMP.

During the initial phase, the project operation did not require electricity. The company is using solar panel to generate electricity for lighting purposes. The frequent occurrence of heavy fog c often compromises the performance of solar energy. Hence, the company applied to Erongo Red, the electricity distributor to supply electricity to the project (Figure 2).

The nearest electrical power line is 3km west of the project. Hence, Erongo Red, will construction electrical power line on a stretch of 3km to the project. A total of 23 poles will be constructed. The construction of power lines is not expected to cause damage to the environment. The digging of holes will be filled up after the pole is erected, the line is not going through a vegetated area and is not in near to any aviation route or bird migration route.

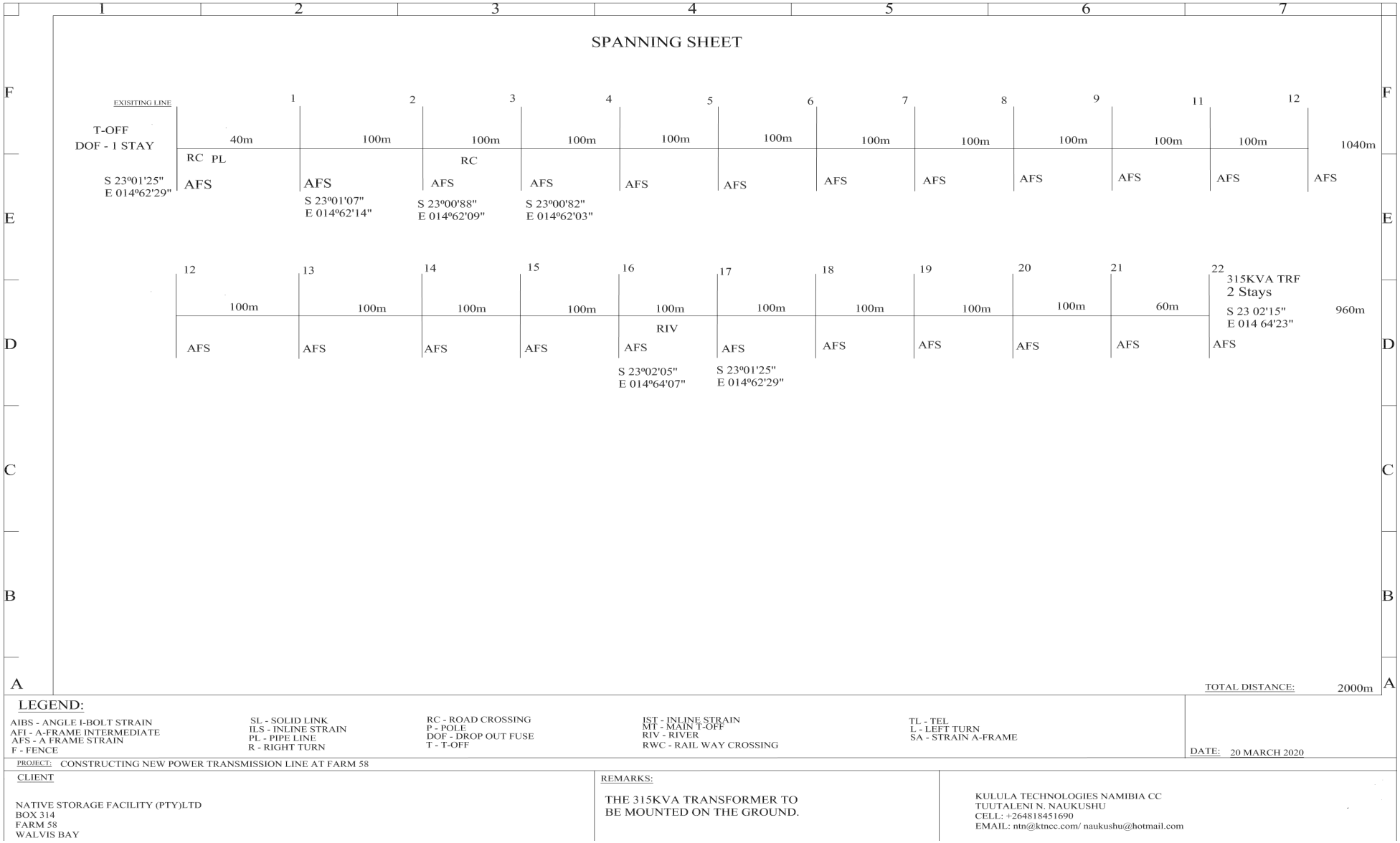


Figure 2. Drawing for the electrical poles.

2. The Environmental management plan (EMP)

The EMP outlines mitigation measures against specific activities, steps, stages or processes of the proposed development. Thus, the EMP can be defined as the tool to prevent / minimize the impacts identified during the EIA process. Furthermore, the EMP outlines specific roles and responsibilities for role-players against which they can be evaluated and non-compliance is punishable.

2.1 Purpose

The aim of the EMP is to ensure that the continued operation of the Storage Facility is conducted in accordance with the following:

i. Environmental Management Act (No. 7 of 2007),
ii. EIA regulations of 2012 (GN: 30), and
iii. Best environmental practices (benchmarks)
iv. Any other applicable legislation *(as presented in Table 2.2, page 6)*

The EMP provides environmental guidelines to be followed during the operational phase of the Storage Facility. The guideline comprise of the following:

a) Environmental Aspects,
b) Management Objective,
c) Mitigation Measures / Actions Required,
d) Monitoring Indicators, and
e) Party Responsible

2.2 Objective

In a nutshell, the objective of the EMP is to prevent / minimize (where possible), unacceptable and adverse environmental, social or economic impacts that may arise from the proposed development. Overall, the EMP aims to prevent any negative impact/s (real, potential or perceived) that may result from the proposed development.

2.3 Scope

The scope of this document study was to undertaken an environmental audit as guided by the existing EMP in order to ensure that the existing EMP is properly implemented and that the project is in compliance to all statutory requirements.

2.4 Possible adjustments to the EMP

The EMP is an open-ended document and maybe considered inconclusive. In other words, the EMP should allow room for adjustments if new information becomes available at a later stage, in which new / additional mitigation measures may become necessary. The added activities are highlighted in yellow.

The necessity of possible adjustments to the EMP at a later stage may be attributed to:

a) Lack of information at the time of drafting the initial EMP,
b) Evolution or addition of new activities, or
   - The addition of the electricity
c) Unintended omission of potential impacts during the initial project design and development of the initial EMP.

2.5 Implementation Framework and Accountability to the EMP

The content of this document is binding to all parties who have a role to play in the **Design, Construction, Operation, Rehabilitation and Decommissioning** of the Storage Facility1[1].

With respect to the implementation of the EMP, the Institutional Framework is presented below. However, the specific roles and responsibilities are defined and broken down as presented in Sections 5 and 6, respectively.

Table 1 Role players, Institutional Framework

Role-player	Company / Institution	Role
Proponent	Native Storage Facility (NSF)	Owner, Business Plan and compliance to EMP
Contractor/s		Construction, repairs and compliance to the EMP
Environmental Consultant	Tortoise Environmental Consultants (TEC)	Development of the EMP
Environmental Compliance Officer/s (ECO)	1) Ministry of Environment &Tourism (MET) – Department of Environmental Affairs (DEA), 2) Walvis Bay Municipality – Environmental Department 3) NACOMA – Namibia Coast Conservation & Management	Monitoring Compliance to EMP: ➢ Un-announced spot checks, ➢ Warning, penalties / fines, license suspension, etc
Public	Interested and affected parties (I&APs)	Report to the ECOs, any activity of environmental concern (e.g Pollution, safety risks, etc)

2.6 Land Tenure / Ownership, Registration and Operating Licenses

Table 2. Required Permits and Operational Licenses

Institution	Requirement	Status	Proof / Evidence
Walvis Bay Municipality	Lease of Land (20 ha)	Granted (7 April 2017)	Appendix (A)
NACOMA	Consent for the development	No objection letter granted (22 May 2017)	Appendix (B)
Walvis Bay Municipality	Public / Legal Notices in the Newspaper	No objections received	Appendix (C)
Ministry of Safety and Security	Registration as a Consumer of Explosives	Granted (19 May 2014)	Appendix (D)
Environmental Commissioner	ECC	Granted in May 2017, EMP Reviewed	Appendix (E)

[1] The phrase *"Storage Facility"* is shortened and represents the full description, which is *"Safe Storage and Handling Facility for dangerous goods"*

3. COMPLIANCE AND LEGAL REQUIREMENTS

3.1 Compliance to the EMP

The EMP is binding to the proponent, and all contractors / sub-contractors that has to do any work at the Storage Facility. This implies that each and every entity that may have any kind of engagement or involved in / with the operations of the storage facility should comply with the EMP throughout the project lifespan. Non-compliance may have serious consequences e.g withdrawal of licenses by the authorities, which means project closure.

The EMP provides an index and step-by-step guidelines to be adhered to.

3.2 Environmental Management Act (No.7 of 2007)

The EMP should conform to the provisions of the Environmental Management Act (EMA), Act No. 7 of 2007 and EIA regulations of 2012 (Government Notice: 30).

The EIA Regulations defines a '*Management Plan*' as:

"…a plan that describes how activities that may have significant environments effects on the environment are to be mitigated controlled and monitored."

3.3 EMP Requirements

Table 3. EMP Requirements as outlined in Section 8 of the EIA Regulations

Requirement
(j) a draft management plan, which includes – *(aa) information on any proposed management, mitigation, protection or remedial measures to be undertaken to address the effects on the environment that have been identified including objectives in respect of the rehabilitation of the environment and closure;* *(bb) as far as is reasonably practicable, measures to rehabilitate the environment affected by the undertaking of the activity or specified activity to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development; and* *(cc) a description of the manner in which the applicant intends to modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation remedy the cause of pollution or degradation and migration of pollutants.*

3.4 Listed Activities

Listed Activities may not be undertaken without an Environmental Clearance Certificate (ECC), and hence an Environmental Impact Assessment (EIA) is required.

The proposed project triggers a number of Listed Activities as set out in the Environmental Management Act, 2007 (Act No. 7 of 2007) (herein referred to as the EMA) and the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011) (herein referred to as the EIA Regulations).

Table 2-4: Listed Activities triggered by the project

Listed Activity	Regulation (Activity Description)	Relevance to the activity
Activity 9 Hazardous Substance Treatment, Handling and Storage	9.4 The storage and handling of a dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters at any one location.	Safe storage facility and handling of dangerous goods
Activity 1 Energy Generation, Transmission And Storage Activities	1.1 The construction of facilities for - (b) the transmission and supply of electricity;	Addition of electricity connection to the existing facilities

3.5 Legal Framework relevant to the EMP

In addition to the EMA and the Environmental Assessment Policy, there exists a host of legal and policy documents and guidelines that govern environmental management as presented in table 4 below: The proponent has the responsibility to ensure that the construction activities conforms to all relevant legal requirements.

Table 5: Relevant legislation and applicability thereof

Legal Requirements		
Legislation considered	***Relevant Organ of State / authority***	***Aspect of Project***
Pollution Control and Waste Management Bill *(in preparation)*	**MET, MHSS and others**	The Pollution Control and Waste Mangement Bill, intents to regulate and prevent the discharge of pollutants to air and water as well as providing for general waste management. The Bill will repeal the Atmospheric Pollution Prevention Ordinance (11 of 1976) (below) when it comes into force. The Bill also provides for noise, dust or odour control that may be considered a nuisance. The Bill would repeal the Atmospheric Pollution Prevention Ordinance (11 of 1976) (below) when it comes into force. Furthermore, the Bill advocates for duty of care with respect to waste management affecting humans and the environment and calls for a waste management licence for any activity relating to waste or hazardous waste management.
Public Health Act (Act No. 36 of 1919)	**Ministry of Health and Social Services**	The Public Health Act serves to protect the public from nuisance and states that no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health. The proponent should ensure that the site workers are provided with protective gear to safeguard their wellbeing. The activities

		should also be conducted in a manner that does not pose any danger to the general public and that any emissions which could be considered a nuisance should be contained at acceptable levels.
Atmospheric Pollution Prevention Ordinance (Act No.11 of 1976)	**Ministry of Health and Social Services**	This Ordinance serves to control air pollution from point sources, but it does not consider ambient air quality. Any person carrying out a 'scheduled process' which are processes resulting in noxious or offensive gases typically pertaining to point source emissions have to obtain a registration certificate from the Department of Health.
Water Resources Management Act (Act No. 11 of 2013)	**Ministry of Agriculture, Water and Forestry**	This Act provides a framework for managing water resources based on the principles of integrated water resources management. It provides for the management, development, protection, conservation, and use of water resources. Furthermore, any watercourse on/or in close proximity to the site and associated ecosystems should be protected in alignment with the listed principles. Water is one of the most important resources, and determinant factor for any development. For the propsed Storage Facility, Water is required during construction and operation of the Storage Facility. Therefore, water abstraction should satisfy the provisions of the water act (water abstraction / borehole permit should be applied from the respective ministry).
Labour Act (Act No. 11 of 2007)	**Ministry of Labour and Social Welfare**	The provisions of the Labour Act relating to the Health and Safety of employees at work sets out the duties of the employer, welfare and facilities at the workplace, safety of machinery, hazardous substances, physical hazards, medical provisions, construction safety and electrical safety. The regulations states that, no employer shall require or permit an employee to work in an

		environment that is deemed unfit without protective measures in place. The Storage Facility should adhere to the requirements of the Act and associated regulations. Schedule 135 of the Act states that appropriate measures shall be maintained to ensure that noise levels do not increase by more than 7 dB(A)Leq above residual background sound levels. Similarly in habituated areas adjacent to access roads maximum noise levels shall not exceed 85 dB(A).
Regional Councils Act, 1992 (Act No. 22 of 1992)	**Ministry of Regional and Local Government, Housing and Rural Development**	The Regional Councils Act legislates the establishment of Regional Councils that are responsible for the planning and coordination of regional policies and development. The main objective of this Act is to initiate, supervise, manage and evaluate regional development. Erongo Regional Council is considered to be an I&AP and reserve the right to comment on the project and EMP.

4. PROJECT INFORMATION

4.1 Project Description / Activities

The proponent is not in the import business, but would like to provide storage services for items classified as dangerous goods that are shipped through the Walvis Bay harbor on a daily basis, for both domestic (use within the country) and those in transit to other countries (particularly the land locked countries). The proposed storage facility aims to fill the gap in the harbor supply chain services, and thereby ensuring environmental safety.

The project is not a waste storage facility, but a storage facility for valuable items that are classified as dangerous goods (e.g industrial chemicals, fire arms, ammunition, mining explosives etc). At present, Namport provides limited service for the storage of dangerous goods and fully supports the proposal for the establishment of the facility in context.

4.2 Project Site / Location

The site is located between -23 degrees (latitude) and 14 degrees (longitude), respectively. The GPS coordinates are presented in degrees, minutes and second

Table 6: GPS co-ordinates

Beacon / Point	Latitude	Longitude
A	-23 00 33.78375	14 38 21.85214
B	-23 00 29.80393	14 38 37.80934
C	-23 00 42.73937	14 38 42.23105
D	-23 00 46.87201	14 38 25.66131

For the bird's view of Farm 38 location, please refer to the location map ***(Figure 3)***.

4.3 Land survey

The land survey indicates that the proposed lease No. 9 over the farm No. 38 is situated in the registration division F, Erongo Region, Namibia. See attached Land Survey report ***(Figure 4).***

4.4 Land Zonation – Dorob Park Management Plan

According to the Park Management Plan for the Dorob National Park, farm 38 falls within an area that is classified as "Low Sensitive". The classification has been confirmed by the Namibian Coast Conservation Management (NACOMA). See attached site assessment report ***(Appendix B)*.**

4.5 Land Zonation – Walvis Bay Municipality

According to the Walvis Bay Municipality documentation, Farm 38 is zoned as Heavy Industrial. See attached zonation map ***(Figure 4).***

4.6 New site / Project Location (Farm 38)

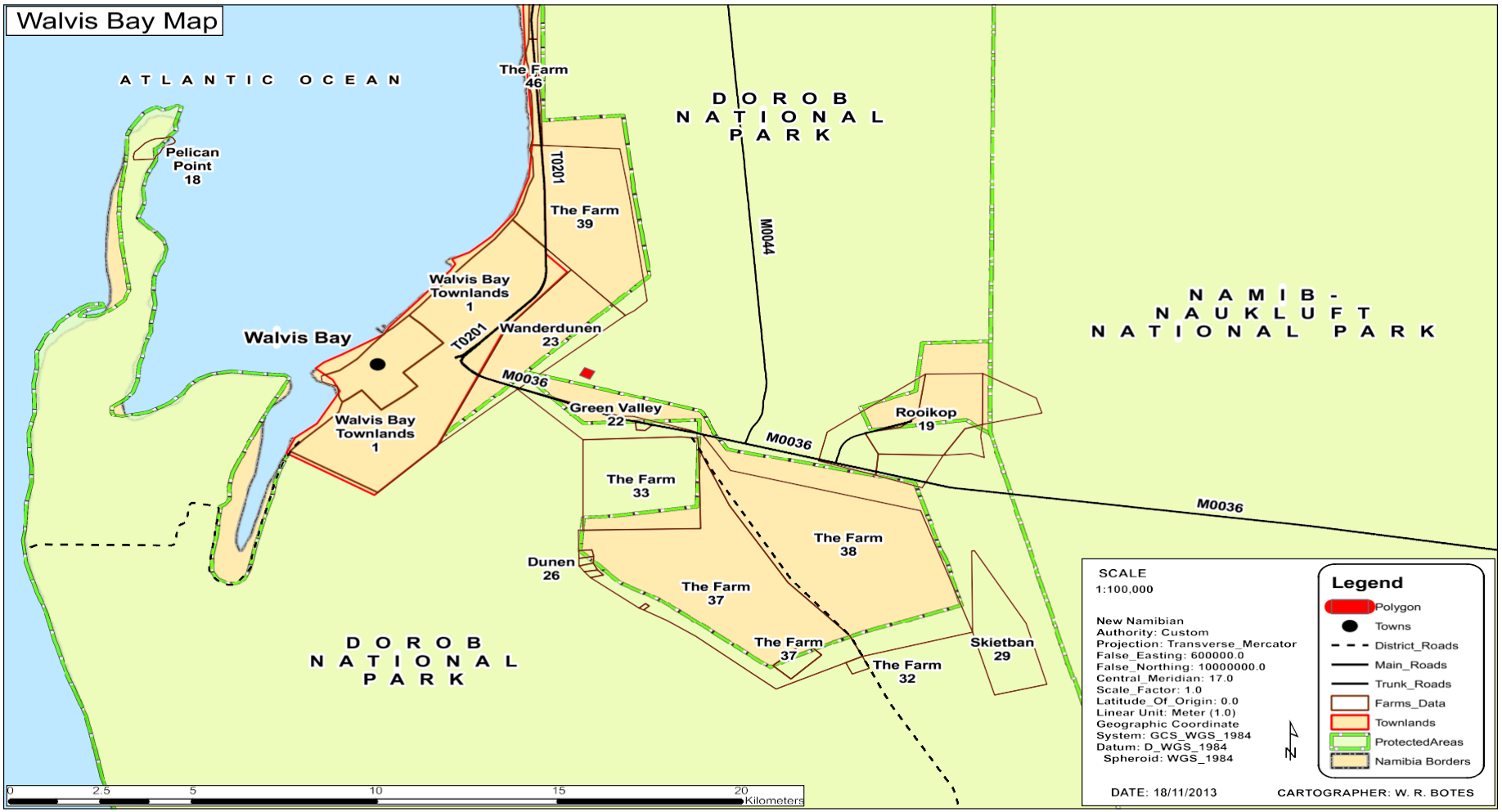


Figure 3: Location Map (farm 38)

4.7 Farm 38 Zonation – Heavy Industrial

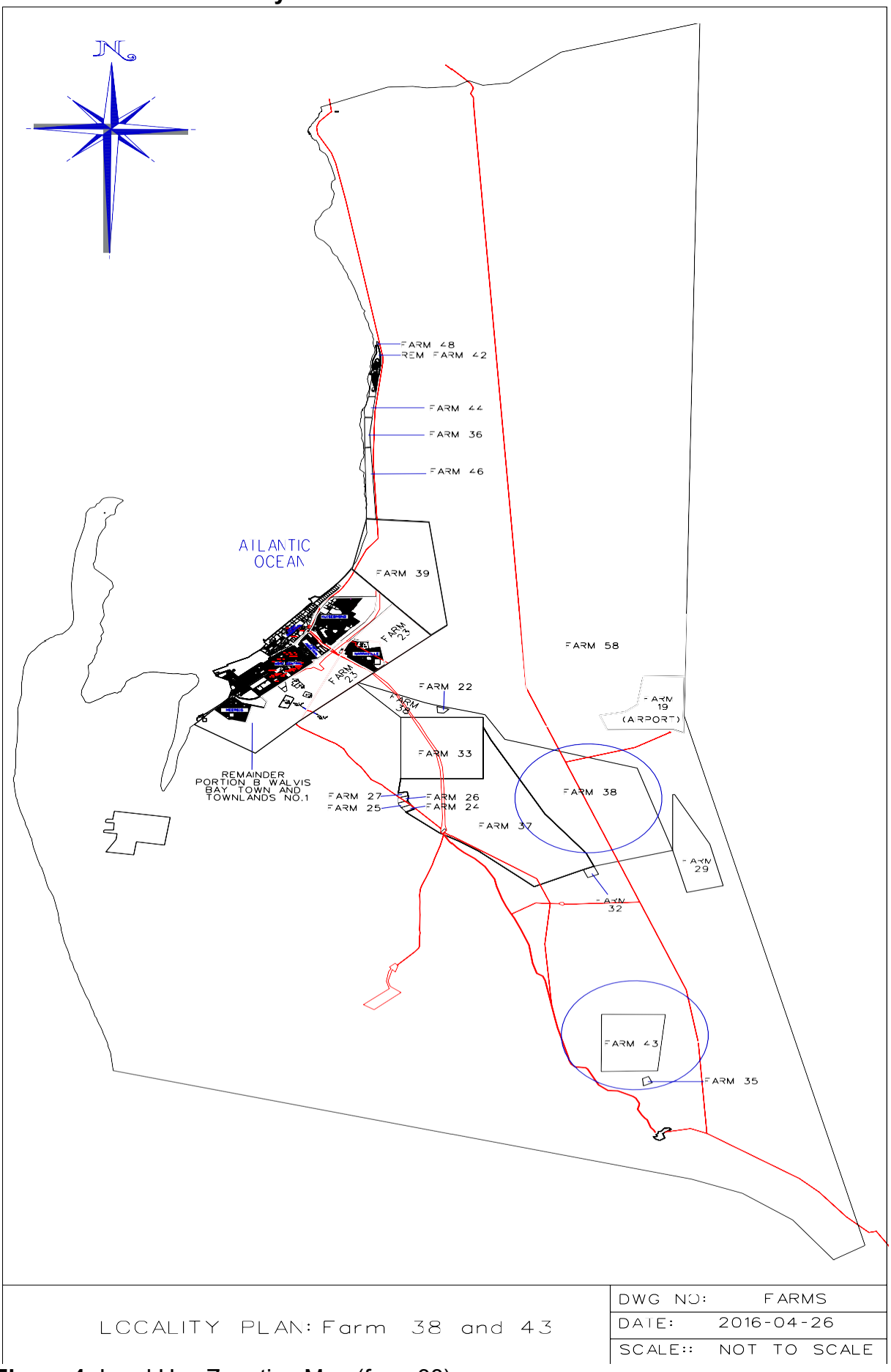


Figure 4: Land Use Zonation Map (farm 38)

4.8 Proposed Lease Area (Farm 38, Portion 20)

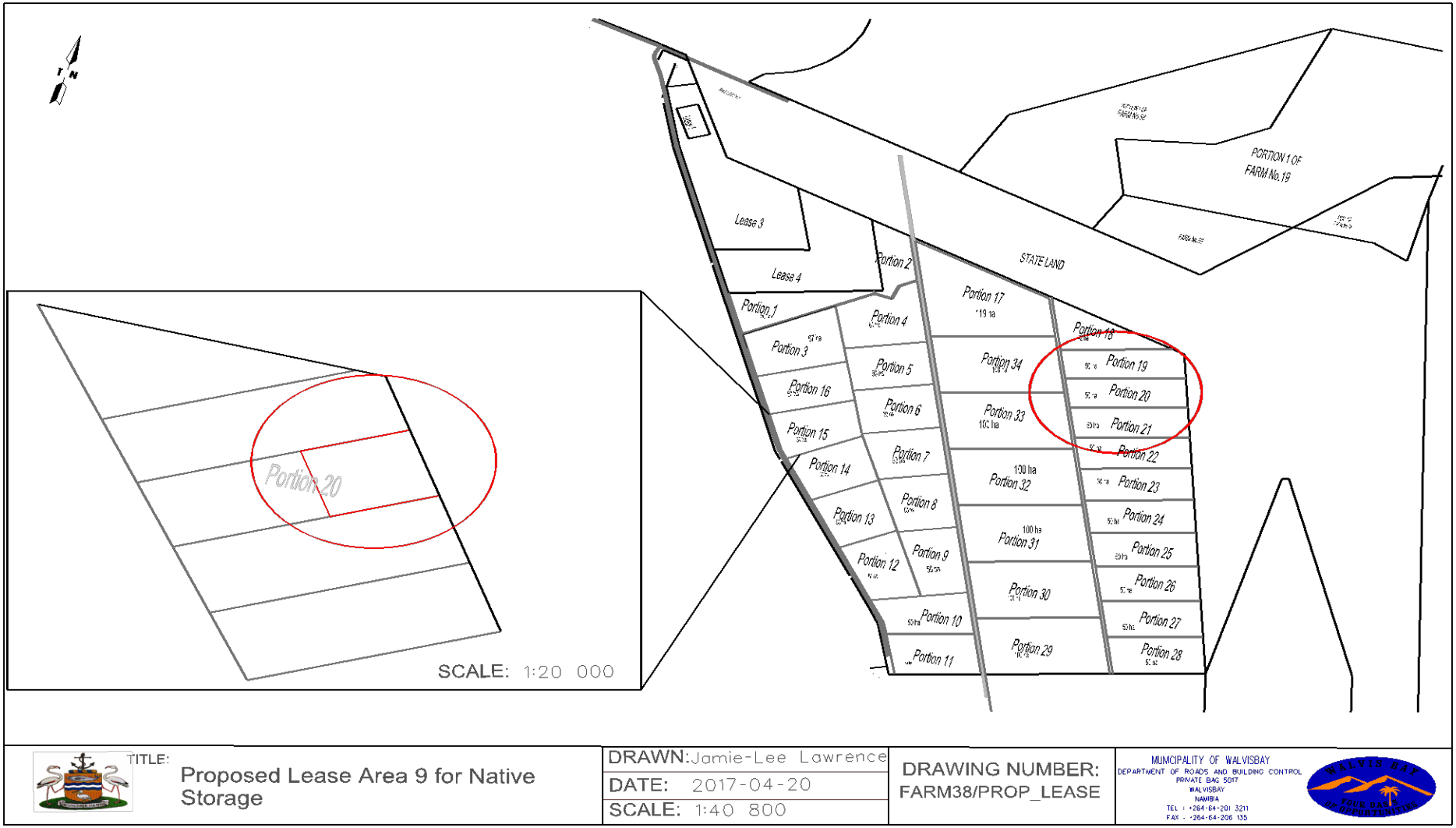


Figure 5: Proposed Lease Area (Farm 38, Portion 20)

4.9 Land survey diagram

APPROVED

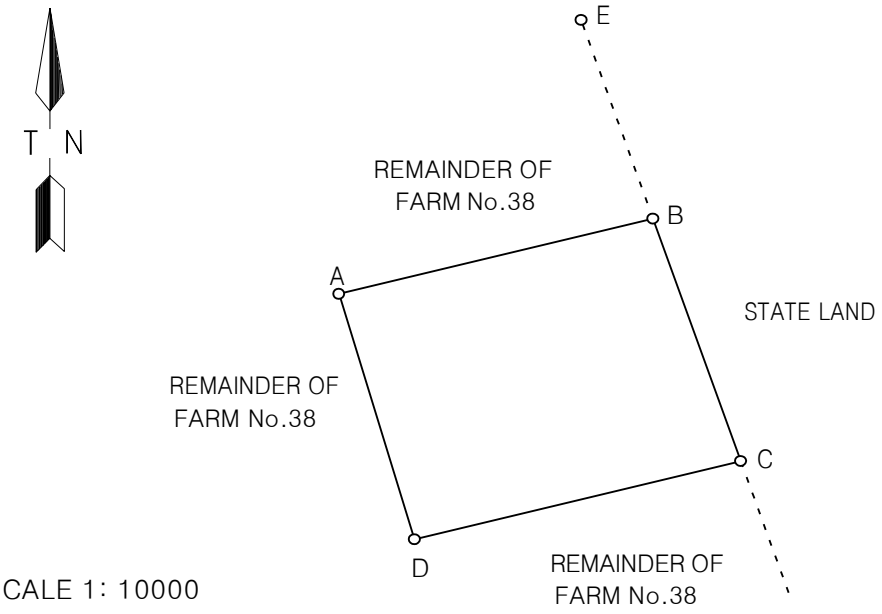
PROVISIONAL DIAGRAM

No. A /2017

SURVEYOR-GENERAL

SIDES metres		ANGLES OF DIRECTION		CO-ORDINATES Y System: 22 / 15 X		DESIGNATION
A B	470,62	254.46.52	A	+36 906,71	+111 769,97	L9A
B C	417,37	342.18.09	B	+36 452,60	+111 646,43	L9B
C D	488,67	74.46.52	C	+36 325,72	+112 044,05	L9C
D A	416,98	164.46.52	D	+36 797,25	+112 172,33	L9D
CONNECTING DATA:						
B E	341,86	162.18.07	E	+36 556,52	+111 320,75	38F15
			T055	+34 756,34	+108 574,68	Rooikop
			T065	+36 134,06	+127 437,62	Schwarzekuppe

DESCRIPTION OF BEACONS:
A,B,C,D ..... 16mm iron peg in concrete
E ..... 16mm iron peg in cairn



SCALE 1: 10000

The figure A B C D
represents 20,0000 hectares of land, being
LEASE No.9 OVER THE FARM No.38
Situate in the Registration Division F
Erongo Region, Namibia

Surveyed between October 2014 and April 2017 by me

R.K.Munyonga
Professional Land Surveyor

This diagram is annexed to No. d. d. Registrar of Deeds	The original diagram is Nr.A.72/73 annexed to D/T No.	S.R. No. E /2017 Noting Plan: LD-N,MD-S File No. F 38

Figure 6: Land survey diagram

4.10 Pictures illustrating the current site status (Farm 38, Walvis Bay)

Figure 7: Current Site status (pictures)

5. ROLES AND RESPONSIBILITIES

This section outlines the roles and responsibilities of the respective key personnel responsible for the day to day activities to ensure effective implementation of the EMP.

5.1 Roles and Responsibilities

For accountability, it is necessary to assign responsibilities in-order to ensure accountability. The key role-players for project implementation are;

a) The **Environmental Compliance Officer (ECO)** representing the Ministry of Environment and Tourism (MET), NACOMA or Walvis Bay Municipality. The ECO can be a representative of any of the aforementioned institutions, or an appointed independent environmental officer, who is responsible for environmental monitoring and auditing.

b) **The Contractor** (entity carrying out the actual construction).

c) **The Site Manager (SM),** the person responsible for the day-to-day management during construction and operation of the Storage Facility. Often, the site manager during the construction is different from the site manger during operation.

4.1.1 The Environmental Compliance Officer (ECO):

The ECO refers to the party responsible for the environmental monitoring and auditing to ensure that the provisions of the EMP are complied with.

The ECO shall have adequate environmental knowledge to understand and interpret the EMP and pertaining environmental aspects associated with the project. The specific tasks of the ECO are as follows:

- To undertake all monitoring and auditing activities in-order to ensure compliance with the EMP.
- Conduct site inspection prior to the commencement of activities; and at least once (1) every 2nd or 3rd month, through out the duration of the project. Depending on the risks, some projects maybe inspected daily.
- Shall compile Progress Reports immediately after site inspections, Compliance Reports, pertaining to any non-compliance incident/s, and a Rehabilitation Report following the conclusion a specific activity.
- The ECO shall liaise closely with all key stakeholders i.e the **Site Manager**, **MET – DEA, NACOMA** and the **Walvis Bay Municipality.**

- Shall provide guidance on any environmental management issues, incidents or emergencies that that may arise thorughout the project lifespan.
- Shall assist in providing recommendations for remedial action in the event of non-compliance.
- Auditing or monitoring activities may involve investigation, as well as structured observation, measurement, and evaluation of environmental data over a period of time.
- The ECO shall contact regular inspections (unannounced spot checks) and shall compile compliance on non-compliance report to the respective authorities (MET, Walvis Bay Municipality or any other relevant authority).

4.1.2 The Contractor:

The following are the specific responsibilities of Contractor:

- Appoint a Site Manager (SM) to oversee the daily onsite activities.
- Liaise closely with the SM and ECO on any environmental management issues, incidents or emergencies.
- Ensure that all activities on and around the site are conducted in accordance with the requirements of the EMP at all times.
- Ensure that all sub-contractors and visitors to the site are conversant with the requirement of the EMP, relevant to their roles on site.
- Shall develop a **communication strategy** between the contractor, Site Manager, workers, the ECO and any other relevant stakeholder.
- Shall develop an **organisational structure** to ensure that:

  - There are clear channels of communication;
  - There is an organisational hierarchy for effective implementation of the EMP; and
  - Conflicting or contradictory instructions are eliminated;
  - Ensure that all instructions and official communications regarding environmental matters shall follow the organisational structure as determined
  - Ensure that that EMP requirements are assigned to specific people / positions with the capacity and experience required to implement the EMP.

4.1.3 The Site Manager:

The **Site Manager (SM)** should:

- Ensure that each team recruited to work at the construction site (including staff members, contractors / sub-contractors of Native Storage Facility – NSF), adheres to the EMP;
- Ensure that a **copy of the EMP is kept on site at all times and should be furnished to authorities at any given time**.
- Ensure that all staff attend an induction session before commencement of any work on site and that they are adequately informed of the requirements of the EMP;
- Shall take special care to prevent irreversible damage to the environment;
- Ensure that construction works are within the boundaries of the construction site as specified Site Map and boundary markings (visible pegs, tape etc).

4.2 EMP Context

Environmental management is not only concerned with the final results of the Contractor's operations to carry out the Works, but also with how such operations are carried out. Tolerance with respect to environmental matters applies not only to the finished product but also to the standards of the day-to-day operations required to complete the Works.

The EMP is an important tool and necessary to mitigate / counter negative environmental or social impacts that may arise from the project. However, in the absence of audits and monitoring, it will become ineffective.

4.3 Disciplinary Action

The EMP is a legally binding document and non-compliance with the EMP shall result in disciplinary action being taken against the perpetrator/s. Such action may take the form of (but is not limited to):

- ✓ Fines / penalties,
- ✓ Legal action,
- ✓ Withdrawal of license/s
- ✓ Suspension of work.

The disciplinary action shall be determined according to the nature and extend of the transgression / non-compliance, and penalties are to be weighed against the severity of the incident.

4.4 Non-Compliance

The Contractor and Site Manager shall be deemed to have **not** complied with the EMP if:

- There is evidence of contravention of the EMP and its associated indicators.
- The Contractor and SM have failed to comply with corrective or other instructions issued by the ECO or qaulified authority.
- The contractor and SM fail to respond to complaints from the public.

6. POTENTIAL IMPACTS & MITIGATION MEASURES

The EMP has been structured to provide mitigation measures in accordance with the scope of work for the continued operation of the Storage Facility.

6.1 Impact Themes and Mitigation Measures

The EMP has been categorized into different socio-economic and environmental themes. Themes serve as a quick guide to the recommended EMP remedial actions (Table 6).

6.2 Addendum and Non-Compliance

Added aspects to the EMP are highlighted in yellow, and non-compliance in red.

Table 7. EMP Impact Identification Themes and Associated Aspects

EMP Themes	Specific Aspects
A – Staff induction	Induction
	Site Demarcation
	Communication
B – Health and Safety	General safety at work place
	Road Safety
	Ablution facilities
	Dust and Noise
C – Pollution and Waste Management	General waste: *Material waste (off cuts), concrete rubble, garden & domestic waste,*
	Vehicle emissions (smoke)
	Oil Spills
	Any other waste
D – Environment	Access roads
	Ecology
	Water
	Rehabilitation
E – Cultural Heritage	Heritage resources / artefacts
F – Socio economic	Employment opportunities for Locals
	Alcohol and Drug use at construction site
	Working hours
	HIV / AIDS
	Security

SECTION A: STAFF INDUCTION

Table 8: Mitigation measures pertaining to staff Recruitment and Induction

Potential Sources of Impacts:

- ✓ Employees working without employment contracts (recipe for labour disputes)
- ✓ Lack of adequate induction to inform the workers the Do's and Dont's
- ✓ No formal orientation of the construction process and workers are often disoriented
- ✓ Poor Communication
- ✓ No presentation of the EMP and workers are not aware of the content and risks associated with the activities / actions

Impact	Environmental and Social Management Objective	Mitigation Measures	Indicators for Monitoring and Compliance	Responsible Party
Recruitment	To ensure that all workers have employment contracts (Labour Act No. 11 of 2007)	Formalize recruitment of all staff with Contracts, stating nature of employment, duration and remuneration to protect both parties and avoid labour disputes later on	Copy of staff contracts	Contractor
Staff Induction	To ensure that all staff / employees are conversant with the requirements of the EMP	Induction for all workers on the provisions of the EMP before work commencement, covering but not limited to: Safety, Health and Environmental (SHE) measures, emergency response, reporting of incidents, HIV/AIDS awareness, alcohol and substance abuse, etc Staff operating equipment (such as trucks, loaders, jack hammers, compressors etc.) shall be adequately trained and sensitised against potential hazards	Induction Minutes and Attendance Register, Signed by each and every staff member Staff members appointed at a later stage should also undergo induction	Site Manager

		Conduct Quarterly induction reviews and reflect on workers conduct	Quarterly minutes	
	Availability of the EMP on site for ease of reference	Ensure that a copy of the EMP is kept on site and accessible by team leaders	Availability of EMP on site and accessibility by team leaders	Site Manager
	Punitive measures for staff, to ensure compliance	Adopt a disciplinary system to discipline staff for non-compliance, for offences such as littering, speeding, safety risk both to themselves and to others, not using ablution facilities, etc.	Number of fines issued daily / per month	Site Manager
Communication	Ensure effective communication throughout the construction period (project lifespan)	Develop a communication strategy (Chanel & medium of communication) All correspondence should be written and signed off by witnesses (e.g Site Manager / team leaders) The contact numbers for the Site Manager and Team Leaders must be available onsite (displayed) in case of emergencies.	Communication Strategy Letters, e-mail, Notices, Minutes List of contact numbers available on site	Site Manager
Site Demarcation	To contain all project activities within the site boundaries and prevent construction activities from extending to or impacting on adjacent plots / ervens	Demarcate the construction site with visible marking (e.g. fence, pegs, tape etc.) If need be, obtain permission from relevant authorities to use adjacent ervens e.g for temporary holding of construction materials	Temporary fencing or any other visible site demarcation in place Construction activities are contained within the project site	Site Manager
Notice Board	To warn the public of the construction site	Erect a notice board at the site entrance to notify the public of the construction activities on site	Visible notice board	Site Manager

SECTION B: OCCUPATIONAL HEALTH AND SAFETY

Table 9*: Mitigation measures pertaining to Health and Safety*

Potential Sources of Impacts: ✓ Inadequate training of employees or contractors on risks associated with construction activities ✓ Safety hazards may occur if equipment is not handled in the correct manner ✓ Employees not receiving the correct Personal Protective Equipment (PPE) for their specific responsibilities. ✓ Employees not adhering to safety rules implemented at the site ✓ Noise generated by construction vehicles and equipment during the construction activities				
Impact	**Environmental Management Objective**	**Mitigation Measures**	**Indicators for Monitoring and Compliance**	**Responsibility**
General Occupational Health and Safety of the employees (injuries)	To ensure safe working conditions and adhere to the Health and Safety Regulations, Government Notice 156/1997 (GG 1617)	Develop a Health and safety Plan Identify potential hazards and develop responses to eliminate sources of risk or minimize workers' exposure to hazards Provide adequate and appropriate personal protective equipment for all workers Provide training to all workers on relevant aspects of occupational health and safety associated with their daily work Provide sufficient fire extinguishers	Hazard risk report Safe work condition audit *On-going* Personal protective equipment issue (Distribution register) Adequate protective gear for all staff Training schedule and attendance register	Site Manager

		and train staff on how to use them and the applications thereof Assign designated area for storage of construction material so that it does not pose danger to the staff	Availability fire extinguishers and evidence training (e.g minutes, training pictures etc	
Accidents and incidents	To ensure safe working conditions Installation of electricity	Document and report occupational injuries, illness and fatalities, including near misses. Investigate causes and take appropriate action to eliminate risks where possible Provide adequate access to first aid and medical assistance in cases of work related accidents or injuries Erongo Red must ensure that the installation of electricity is done by qualified and licensed persons	Accidents and incidents register (including near misses) Root causes analysis report Incident review (cause and elimination of hazard) First aid kit availability and adequacy audit report	Site Manager
Physical Hazards to workers	To ensure safe working conditions	Eliminate physical hazards to workers and mitigate any residual risks	Hazards risk report	Site Manager

Road Safety	To prevent traffic hazards / inconveniences from earth moving machinery during construction period	Signage to warn motorists about construction activities and presence of earth moving machinery (heavy vehicles) All trucks transporting construction materials (e.g sand / gravel) should be covered with suitable material (e.g net, tarpaulin, canvas etc) Adhere to traffic rules and speed	Public Complaints / Incident report/s	Site Manager

		limits both on and off the construction site		
Ablution Facilities	To reduce health risks and environmental pollution and ensure healthy working environment with appropriate and user friendly ablution facilities	Ensure adequate, hygienic (clean) and user-friendly ablution facilities for all staff. Mobile chemical toilets are recommended Waste should be discharged in accordance with the Walvis Bay effluent discharge regulations. No faecal waste should be discharged on site Acts of excretion and urination, other than at the toilet facility provided, shall be strictly prohibited. Appoint a cleaner or rotate cleanig responsibities among workers. If necessary, designate Male and female toilets Ablution facility should be environmental friendly	Inspect ablution facilities regularly (daily) Availability of toilets, cleanliness and hygienic ablution facilities Incidents or complaints of waste discharge into the environment	Site Manager
Dust and Noise	To mitigate dust and noise impacts to both employees and the public To minimise noise disturbances during the construction phase.	Adopt applicable dust suppression measures to mitigate dust impacts, Provide dust masks and ear muffs to all employees operating in a dusty or noisy environment Alert the public / neighbors of dust or	Incident Report ECO to verify implementation of the mitigation measures proposed in this EMP and compile the report	Site Manager

		noisy undertakings prior to carrying out such activity Schedule activities that will generate the most noise during times of the day/ normal working hours that will result in least disturbance to adjacent industries. Regular maintenance of vehicles and equipment. Working hours should be restricted to normal working hours		
Fire Risk / Hazard	To mitigate fire risk	NO fires should made on site Provide / install Fire extinguishers and Fire hydrants in accordance with safety regulations	Staff induction to demonstrate the use of fire extinguishers and fire hydrants Adequate and Service record	Site Manager

SECTION C: POLLUTION AND WASTE MANAGEMENT

Table 10: Mitigation measures pertaining to waste management

Potential Sources of Impacts:

- ✓ Generallly, construction sites generate considerable amounts of waste, with no proper waste management and disposal systems
- ✓ Disregard of the pollution impacts (often considered insignificant e.g littering, oil spills etc)
- ✓ Poor management, storage and disposal of concrete and cement or spillages from equipment used for construction (e.g. cement mixers), and general spillage of contaminated wash or wastewater
- ✓ Oil spills (includes fuel, grease, etc)
- ✓ Leaking or broken sewerage pipes
- ✓ Storage of unwanted waste (e.g old / waste tyres) and poor disposal systems dispose

Impact	Environmental and Social Management Objective	Mitigation Measures	Indicators for Monitoring and Compliance	Responsible Party
Vehicle emissions	Reduce greenhouse gas (GHG) emissions from poorly maintained or malfunctioning equipment (vehicles / machinery	All vehicles and equipment shall be kept in good working order and serviced regularly (in accordance with the servicing frequency of the specific machinery), in order to prevent emission of poisonous smoke etc	Vehicle servicing records Reports of smoke emissions from machinery	Site Manager
Oil Spills	Ensure waste oil is managed appropriately and pollution is prevented at all costs	Provide concrete bunding for fuel storage and transfer on site. The bunding should be bigger than the fuel storage tank/s to allow a bit of working space around tank/s (e.g 20% bigger than the tank/s) Use of sheeting to prevent soil	Concrete bunding at all fuel storage and handling locations and sheeting	Site Manager

		contamination (e.g during vehicle servicing) The fuel tanks should stand on a concrete slab to prevent the leakage of contaminants into the soil. Bunding and concrete slabs should be installed at each point where hazardous materials are handled. Waste oil should not be stored onsite indefinitely and should be recycled (transfer to oil recycling companies) If an oil spill occurs, collect the contaminated soil, store in drums and dispose at appropriate waste disposal site (e.g Municipal disposal site) All vehicles and machinery should be fitted with oil drip trays to prevent oil dripping to the ground	Drums or containers for oil recycling and proof of oil transfer to recycling companies Oil drip trays for each vehicle	
Solid Waste	To prevent pollution and maintain a clean environment	Classify waste into different categories e.g Material waste (wood, steel, corrugated iron etc), Building rubble (concrete), Garden Waste (tree stumps, branches etc), and Domestic Waste (Litter – cans, plastics, tissues etc) Each category should be disposed off in accordance with the Municipal	Scattered waste, Littering and any other unsightly waste at the site (eyesore)	Site Manager / dedicated Waste Disposal Officer

		Regulations and in the most suitable and environmentally acceptable manner All waste produced on site should be contained and disposed as per Municipal regulations No onsite burying, dumping or burning of waste material shall be permitted. Ensure appropriate waste collection and removal from the site and dispose at appropriate municipal waste disposal sites		
Waste Water	To avoid effluent discharge into the environment	Refer to the Walvis Bay Municipal regulations on effluent disposal Connect toilets to the municipal sewer system Be on the look out and repair any leaking or broken sewer pipes (regardless of how small it maybe perceived)	Connection to Municipal Sewer Systems No leakage of sewer pipes	Site Manager or dedicated Plumber

SECTION D: ENVIRONMENT

Table 11. Impacts pertaining to environment and cultural heritage

Potential Sources of impacts: ✓ Uncontrolled routes (everyone drives wherever they want) ✓ Disregard of environmental values, concerns and recommendations ✓ Lack of awareness amongst workers and contractors of how their actions may impact on the environment ✓ Soil erosion due to the clearance of vegetation, excavations ✓ Loss of topsoil due to lack of rehabilitation and restoration measures ✓ Lack of adequate storm water management and drainage systems				
Impact Description	**Environmental Objective**	**Mitigation Measures**	**Indicators for Monitoring and Compliance**	**Responsible Party**
Landscape damage	Establish only one (1) route for both entry & exit	Clearly demarcate the road, inform staff (drivers) accordingly	Meeting Minutes, signed by drivers	Site Manager
Ecological disturbances (both fauna and flora)	Remove trees only as necessary (if it obstructs the construction process) Where possible, minimize disturbance to prevent loss biological diversity	Acquire permits from relevant authority for the removal or cutting down of protected trees (Permits to remove protected trees required from Forestry) Erongo Red must install bird scaring devices on the electrical power lines	Photographic records of site before construction commencement Regular review of photographic records	Site Manager

Land degradation and loss of topsoil leading to soil erosion	To ensure proper soil management reduce soil erosion To avoid heaps after digging and installation of electrical poles	Replace topsoil concurrent with construction, whenever possible. Any disturbed areas must be rehabilitated as soon as possible after construction has been completed and re- vegetated with suitable indigenous vegetation. If there is not enough topsoil available from a particular soil zone, topsoil of a similar quality may be used to replace it Compacted soil should be ripped to ensure effective re- vegetation Erongo Red must ensure that the excavated soil is filled back and compacted At night, outer lights may only be used during an emergency	Photographic records of site before construction commencement	Site Manager
Soil erosion due to improper management of storm water onsite	To ensure adequate storm water management and to prevent soil erosion	The site must have an adequate and effective storm water management system in place Storm water measures should be inspected on a regular basis in order to ensure that the storm water structures (eg gutters) are functional and not causing soil erosion. Where necessary, place culverts underneath road foundations	Regular Site inspections Shortcomings must be addressed	Site Manager

Pollution of surface water and groundwater resources	To prevent storm water from eroding the land and becoming contaminated	Maintain a buffer of 100 m from watercourses. Contaminated runoff from the construction site must be prevented. Measures include oil and grease traps, cleaning up spills immediately and proper disposal of contaminated material.	Drainage system/channel in place	Site Manager
		Ablution facilities must be located at least 100 m away from streams or freshwater systems and regularly serviced		
		Rubble, sand and waste material resulting from the construction activities must be cleared up but not disposed in any stream or drainage channels as it will impede on the flow in these channels.		
Soil and groundwater pollution due to poor management and accidental spills of	To prevent and minimise soil and water pollution as a result of poor management and accidental spills of hazardous chemical	Identify all hazardous chemical substances used onsite including fuel, greases and oils. Train staff on the use of	ECO to verify implementation of the mitigation measures proposed in this EMP and compile	Site Manager

hazardous chemical substances including fuel, greases and oils used onsite.	substances including fuel, greases and oils used onsite.	chemicals Keep a stock inventory register of all chemicals in the store. Proper storage of chemicals in a lockable, well ventilated building. Ensure adequate access control for the storage area. Storage areas for hazardous chemicals are to comply with standard fire safety regulations. Safety signage including “No Smoking”, “No Naked Lights” and “Danger”, and product identification signs, are to be clearly displayed in areas housing chemicals. Appropriate equipment to deal with emergency spill incidents is must be readily available on site. This includes fire extinguishers, spill kits for hydrocarbon spills, drip trays for equipment and/or machinery	the report	

		leaks, drums or containers for contaminated water. Chemicals are to be properly labelled and handled in a safety conscious manner. Personnel handling hazardous chemicals and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE). Immediately clean all spillage of fuels, lubricants and other petroleum based products. No hazardous chemicals must be discarded in the sewage or system. Soil contaminated with hazardous chemical substances shall be treated as hazardous waste and removed from site.		
Soil and groundwater pollution due to poor waste management. Nuisance caused	To prevent soil and groundwater pollution due to poor waste management	Building and demolition waste must be disposed of at a licensed landfill site. If applicable, Steel should be taken to a licensed recycling facility.	Regular site inspections Internal audits against this EMP must be conducted every 3 months	Site Manager

by odours and unsightly appearance of waste onsite.		The management of waste must be in accordance with the regulations of the Walvis Bay municipal Solid Waste policy (if available) Installation of sufficient waste bins, skips or bulk containers. Containers must be present on site at all times. All containers (bins, skips or bulk containers) shall be kept in a clean and hygienic manner. Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. Waste material may only be temporarily stored at areas demarcated for such storage practices. General waste shall be stored in a manner that prevents the harbouring of pests.	and records kept onsite Shortcomings must immediately be addressed	

		General waste material should always be stored or disposed off separately from hazardous waste material (e.g. oil, diesel). General and hazardous waste can be deposited into appropriately demarcated bins Skips or bulk containers should be removed to a licensed landfill site on a weekly basis or more often if required. No littering is permitted and site clean-ups must regularly be undertaken.		
Soil and groundwater pollution from unsanitary conditions onsite	To prevent soil, and groundwater pollution from unsanitary conditions onsite.	Sufficient ablution facilities shall be provided – minimum of 1 toilet per 15 workers. Functional, existing ablution facilities can be used. Ablating anywhere other than in the toilets shall not be allowed. Ablution facilities are to be serviced weekly or more frequently if required. Toilet paper must be provided at all times.		Site Manager

Soil and groundwater pollution from leaking or broken sewerage pipes.	To prevent soil and groundwater pollution from leaking or broken sewerage pipes	Ablution facilities should be maintained to prevent blockage and leakages. Should toilets become blocked or run slowly, it should be reported and the cause investigated. This could be due to a blocked or broken pipe leading from the toilets to the sewerage system. Create employee awareness about the proper use of ablution facilities and the importance of proper hygiene. No cigarette butts, fats, oils, paper towels etc. may be disposed of into toilets or wash basins. Toilets should have properly closing doors and be supplied with toilet paper and air refresher.	Regular site inspections. Internal audits against this EMP must be conducted every 6 months and records kept onsite. Shortcomings must immediately be addressed	Site Manager
Pollution due to poor management and accidental spills of hazardous chemical	Prevent and minimise soil and water pollution as a result of poor management and accidental spills of hazardous chemical	Identify all hazardous chemical substances used onsite including fuel, greases and oils. Train staff on the use of	Inventory register of chemicals	

substances including fuel, greases and oils used onsite.	substances including fuel, greases and oils used onsite.	chemicals Keep a stock inventory register of all chemicals in the store. Storage areas for hazardous chemicals are to comply with standard fire safety regulations. Safety signage including “No Smoking”, “No Naked Lights” and “Danger”, and product identification signs, are to be clearly displayed in areas housing chemicals. Appropriate equipment to deal with emergency spill incidents must be readily available on site. This includes fire extinguishers, Chemicals are to be properly labelled and handled in a safety conscious manner. If refuelling on site, the ground must be protected and proper dispensing equipment is to be used i.e. hand pumps and funnels		

		Immediately clean all spillage of fuels, lubricants and other petroleum based products. No hazardous chemicals should be discarded in the sewage system. Soil contaminated with hazardous chemical substances shall be treated as hazardous waste and removed from site		
Decommissioning		Removal of all left overs, parts and pieces that do not form part of the final infrastructure		Site Manager
Visual Impact	Minimize / limit visual impact	Limit Landscape alteration Colour Schemes for infrastructure (buildings, walls, fences etc) should blend in with the natural environment	Colour Schemes presented and approved by authorities (e.g DEA or Walvis Bay Municipality)	Proponent (Architect)

SECTION E: CULTURAL HERITAGE

Table 12: Potential impacts pertaining to cultural heritage

Sources of impacts: ✓ Disregard of Cultural Heritage and artefacts				
Impact Description	**Socio-Economic Objective**	**Mitigation Measures/**	**Indicators for Monitoring and Compliance**	**Responsible Party**
Heritage Resources / artefacts	Reduce the impacts of construction and associated earthworks on heritage resources / artefacts	Heritage remains or artefacts discovered on site must be reported to the National Museum (+264 61 276800) or the National Forensic Laboratory (+264 61 240461)	Sighting report/s of heritage resources / artefacts	Site Manager
		No artefacts must be removed or be interfered with prior to authorisation from the Namibian National Heritage Council (NHC) Recovery of heritage remains or artefacts discovered and removal thereof should be directed by the National Museum		

SECTION F: SOCIO-ECONOMIC

Table 13. Mitigation Measures pertaining to Socio Economic Impacts

Sources of impacts: ✓ Unfair labour practices ✓ Lack of awareness among the employees ✓ Unwillingness to support the locals				
Impact Description	**Socio-Economic Objective**	**Mitigation Measures / Management Actions**	**Indicators for Monitoring and Compliance**	**Responsible Party**
Employment opportunities for Locals	Ensure benefits to local communities where possible	Recruit locals for unskilled labour, if possible allocate quotas for local employment and specify that such positions shall only be filled by non-locals if there are no locals suitable Where possible, procure materials from local suppliers	Employee structure and proportion of local employment	Site Manager
Alcohol and Drug use	Prevent alcohol and drug use at the construction site	Ban and warn the employees against the use of alcohol and drug at construction site Provide awareness on the dangers and health impacts of alcohol and drug use	Drunk / Misbehaving employees Monitor presence of alcohol at the construction site	Site Manager

Long working hours	Adhere to the Labour Act No. 11 of 2007	Operate within the prescribed working days and hours as per the Namibian Labour laws and regulations. Provision for overtime or compensatory time off for long hours worked	Verification of working hours against the labour Act	Site Manager
HIV / AIDS	Provide HIV / AIDS awareness to employees	Provide HIV / AIDS awareness at induction Avail Condoms in Toilets at site	Availability of condoms at construction site	Site Manager
Security	Orientation of workers about security for both equipment and themselves	Orientate all staff about the security of equipment and themselves & provide contact numbers for Police and other emergency services e.g. Ambulance	Proof of security orientation and emergency contact numbers	Site Manager

7. CONCLUSION

During environmental auditing, nothing has changed since the facility operation three years ago. It is still the same concrete wall where goods are stored. Currently, the site is mainly storing Ammonium Nitrate. The proposed installation of electricity will not change the operation of the project. However, due to the pristine environment the project is working, at night, outer lights may only be used during an emergency. There was no non-compliance issue detected.

Therefore, the review of this EMP recommends for the renewal of the Environmental Clearance certificate and for continued operation of the facility.

8. APPENDICES

APPENDIX (A): Approval by the Walvis Bay Municipality (Lease agreement)
APPENDIX (B): No Objection from NACOMA
APPENDIX (C): Legal Notices
APPENDIX (D): Registration as a Consumer of Explosives
APPENDIX (E) Existing Environmental Clearance Certificate

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