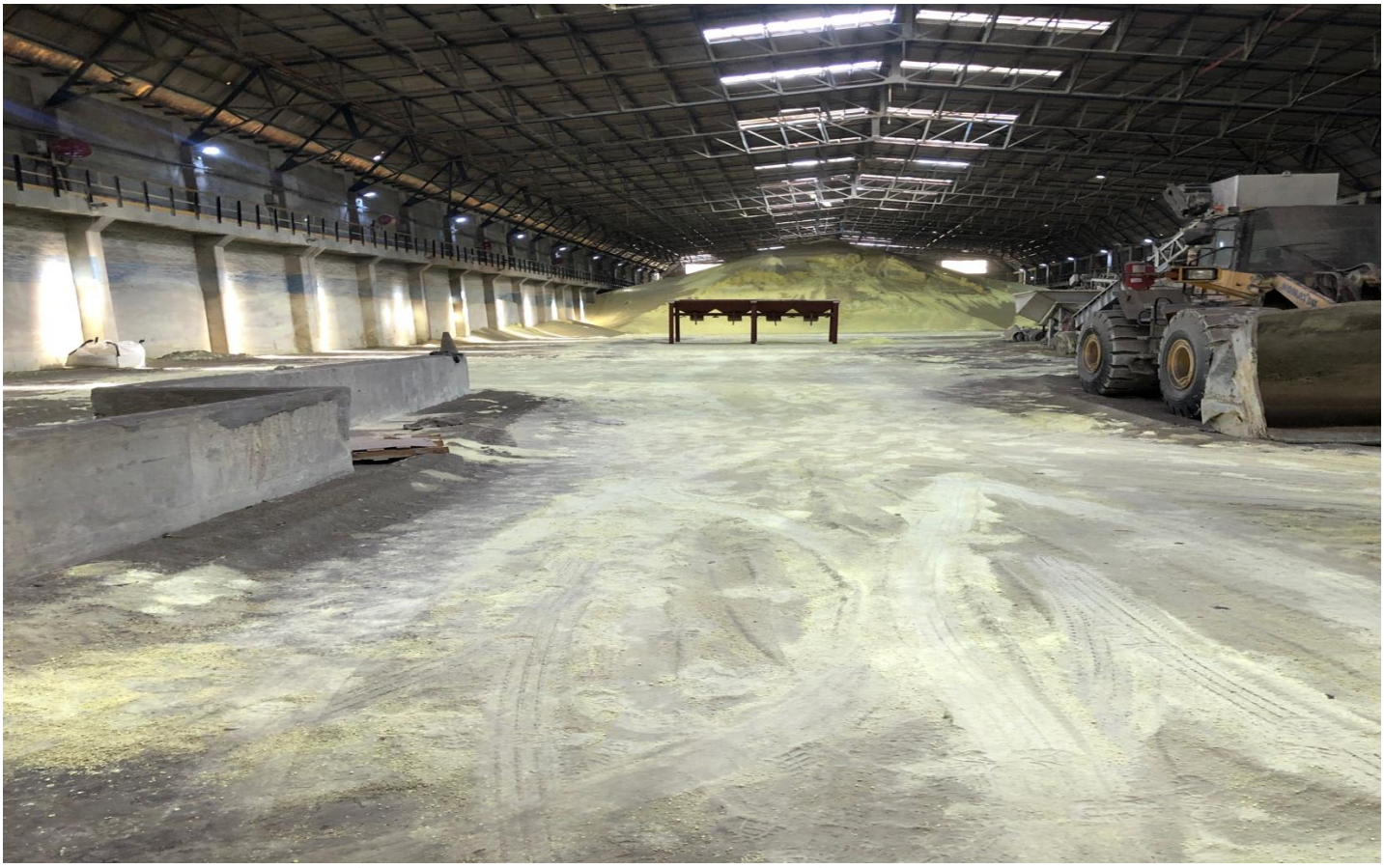
ENVIRONMENTAL IMPACT ASSESSMENT

FOR THE PROPOSED UPGRADE AND OPERATION OF A CHEMICAL AND MINERALS STORAGE WAREHOUSE IN LUDERITZ, ǁKHARAS REGION-NAMIBIA.



ENVIRONMENTAL MANAGEMENT PLAN

FINAL

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Acronyms

TERMS	DEFINITION
BID	Background Information Document
EAP	Environmental Assessment Practitioners
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
EMP	Environmental Management Plan
GHG	Greenhouse Gasses
ISO	International Organization for Standardization
I&Aps	Interested and Affected Parties
JBIC	Junior Baiano Industrial Consultants
MET: DEA	Ministry of Environment and Tourism's Directorate of Environmental Affairs

1. CHAPTER ONE: BACKGROUND

1.1. INTRODUCTION

Coleman Transport has identified the need a logistical center for materials composed on minerals and mineral processing m chemicals and materials to service mines in the Kharas region and the rest of the country. This will also allow for a logistical hub for the transition from road haulage to ocean freight carriers. In this respect, the proponent has taken on a venture to upgrade an existing a storage facility at Namport Lüderitz to ease logistical and financial costs in supply and demand for logistics in minerals, chemicals and materials transportation and storage.

In terms of the Namibian environmental legislation (Environmental Management Act (No. 7 of 2007)) and the Environmental Assessment Regulations of 2012; an EIA is required to obtain an Environmental Clearance Certificate from the Ministry of Environment and Tourism (MET) before the project can proceed.

Furthermore, as per the requirements of the Environmental Management Act No. 7 of 2007, Powercom has appointed JBIC to conduct an Environmental Assessment (EA) and develop an Environmental Management Plan (EMP) for the warehouse. This has been followed by an application for Environmental Clearance Certificate (ECC) to the Ministry of Environment and Tourism (MET): Directorate of Environmental Affairs (DEA).

In this respect, this document forms part of the application to be made to the DEA's office for an Environmental Clearance certificate for the proposed warehouse, in accordance with the guidelines and statutes of the Environmental Management Act No.7 of 2007 and the environmental impacts regulations (GN 30 in GG 4878 of 6 February 2012).

1.2. PROJECT LOCATION

The proposed project site is located at Namport Lüderitz, Karas Region-Namibia. The exact project site shown below:

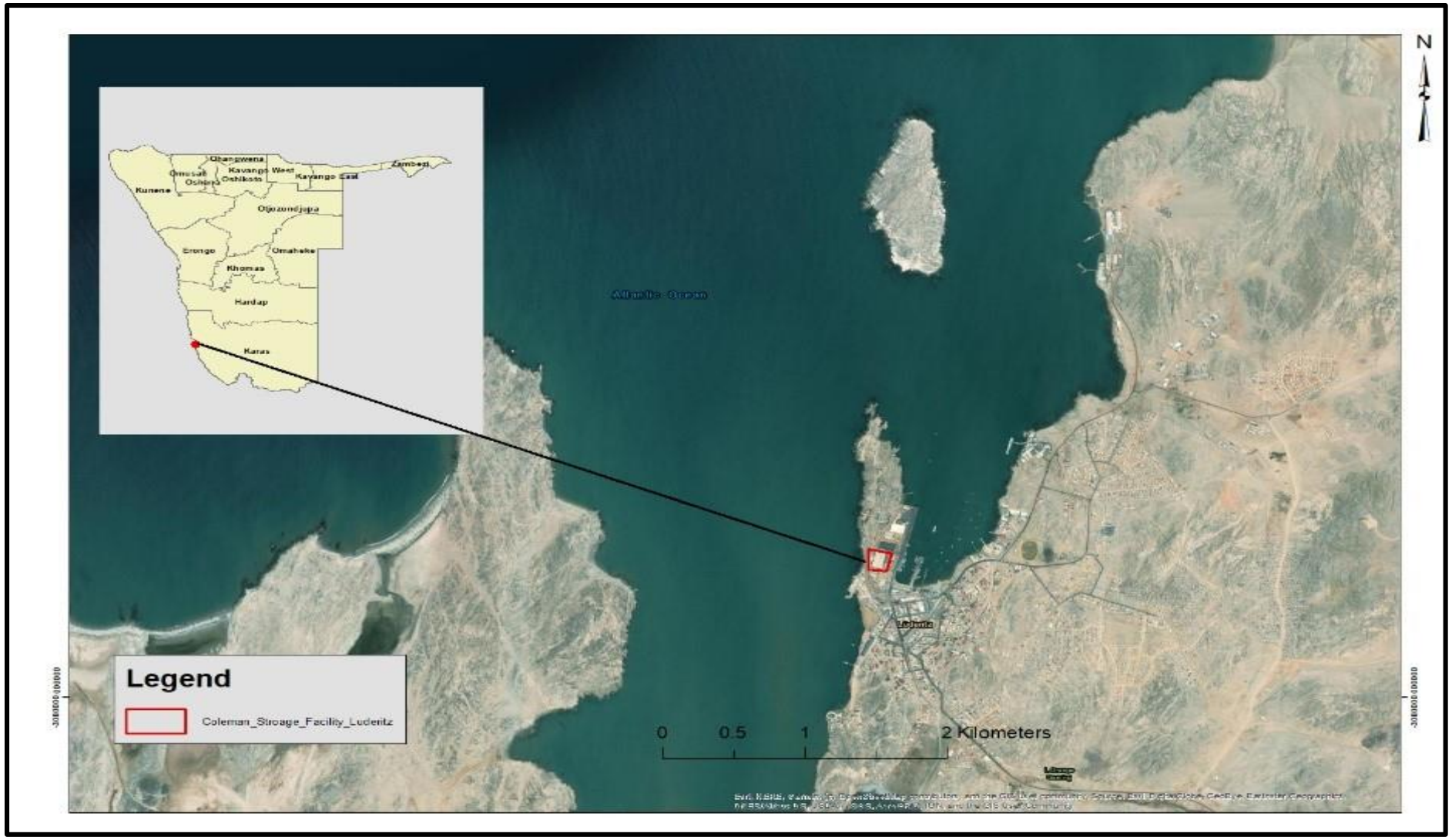

Figure 1: Proposed Project Site

1.3. PURPOSE OF THE ENVIRONMENTAL MANAGEMENT PLAN (EMP)

This EMP has been developed for the upgrade and operation of a chemicals, minerals and materials storage warehouse at Namport in Lüderitz, proposed by Coleman transport. It forms the operational framework within which the proposed project is to operate within. All anticipated environmental and social impacts identified in the environmental scoping report are addressed, with a mitigation action, monitoring requirements, key indicator and responsibilities.

This EMP is incessant, and it requires compliance monitoring, updating and or amendment if the scope of operations change. All personnel working on the project will be legally required to comply with the standards set out in this EMP.

This section describes the Environmental Management Plan (EMP) for impacts associated with the proposed development. The EMP stipulates the management of environmental programs in a systematic, planned and documented manner. The EMP below includes the organizational structure, planning and monitoring for environmental protection at the proposed farm area development and other areas of its influence. The aim is to ensure that the proponent maintains adequate control over the project operations to:

- To prevent negative impacts where possible;
- Reduce or minimise the extent of impact during project life cycle;
- Prevent long-term environmental degradation.
- Ensure public safety and health is protected

1.4. LEGAL AND OTHER REQUIREMENTS COMPLIANCE

This report presents the EMP and has been undertaken in accordance with the requirements of the Environmental Management Act, No. 7 of 2007 and the Environmental Assessment regulations of 2012. As such, key requirements in accordance to this Act, classifies the proposed project as listed and invokes the need for an environmental management plan to sustainably implement this project. However, legal compliance is not only limited to the EMA, but also applies to all applying legal requirements identified in the ESR. When licenses are required such as wastewater discharge, the proponent should ensure that all licenses and permits are obtained and fulfilled as per conditions.

1.5. THE EMP ADMINISTRATION

There is a strong need to clearly outline the roles and responsibilities of all stakeholders to ensure that the EMP is fully implemented. There is also a need for the proponent to appoint an overall responsible person (Site Manager) to ensure the successful implementation of the EMP.

It solely remains the responsibility of Coleman Transport to ensure;

- That all members of the project team, including contractors, comply with the procedures set out in this EMP;
- That all personnel are provided with sufficient training, supervision, and instruction to fulfil this requirement; and
- Ensuring that any persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood.

Table 1:Roles and Responsibilities in EMP Implementation

ROLE	ENVIRONMENTAL RESPONSIBILITIES
Site/Warehouse Manager	Responsible to enforce EMP implementation to contractors
Environmental Control Officer (ECO)	Implement, review and update the EMP. • Ensure all reporting and monitoring required under EMP is undertaken, documented and distributed as needed • Conduct environmental site training (tool box talks) and inductions • Conducts environmental audit at work site with the support of environmental consultant. • Close out all non-conformances. • Ensure materials being used on site are environmentally friendly and safe.
The Department of Environmental Affairs	Approve the EMP and any amendments to the EMP. • Approve reports of environmental issues and non-conformances as issued. • Review and approve environmental reports submitted as part of EMP implementation
Site Engineers	Control and monitor actions required by the EMP. • Report all environmental issues to Environmental Control Officer • Ensure documented procedures are followed and records kept on site. • Ensure any complaints are passed onto the management within 24 hours of receiving the complaint.
Workers	Follow requirements as directed by site engineers. • Report any potential environmental issues to site engineer/Site Manager, indicating spilt oil, excess waste, excessive dust generation, dirty water running off the site and other possible non-conformances

Table 2:Construction and Operation EMP (C&O EMP)

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
Noise pollution	Noise will be generated through: -Warehouse upgrading -Warehouse Operating activities -Haulage trucks	- The health of working personnel could be disturbed. - Community residents could be disturbed by the noise. - General annoyance -Driving away of local animals' species near the project site	Environmental	Permanent	-Environmental Control Officer -Site Manger	- A construction interval will be established, used and adhered to. - Workers will be issued earplugs to protect them from excessive noise. - Public will be notified through printed timetable stating planned operational activities. - Construction activities will be conducted during daytime. -Site notices will be erected on, around the site-notifying visitors, and nearby residents of different hazards on site. -No go areas marked as sensitive environments, especially for birds needs to be avoided during construction and operation. -Noise assessments should be conducted every quarter to ensure that operational activities are generating noise within the allowable threshold.	**Construction & Operation**
Dust Generation	In the Port of Lüderitz, the major contributor to deteriorated air quality is windblown dust generated during chemical (e.g. sulphur)	- Can lead to respiratory illnesses especially to those working in the area. - General air pollution.	Environmental	Permanent	-Environmental Control Officer -Site Manager	**Actions Prevention:** Implement dust suppression methods where applicable (e.g., wetting with water, covering loads, netting, etc.) Care should however be taken to limit	**Operation**

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
	and mining ore handling. This is aggravated during periods of strong wind (41 to 61 km/h) which is a frequent occurrence in Lüderitz.	Dust not only poses health impacts to workers and nearby residents, but can also impact on the fishing industry by contaminating fish from fishing vessels during offloading, and cause deterioration of seawater quality. Deteriorated seawater quality can in turn impact on marine ecology as well as the mariculture industry				the volume of water used for dust suppression. -All bulk cargo on trucks or trains entering and exiting the warehouse must be covered to contain dust. -Any loading / offloading activities must cease if dust becomes airborne. Loading / offloading can continue after mitigation measures to reduce dust have been implemented. Mitigation: -All staff working in dust producing environments must wear dust masks and related PPE. -Bulk cargo vessels must be loaded / offloaded downwind from fishing vessels. -A complaints register should be kept for any air quality related issues and mitigation steps taken to address complaints where necessary. **Data Sources and Monitoring:** -Namport Operating and System Procedures -Any complaints received regarding dust or other air quality impacts should be recorded with notes on action taken.	

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
						-Real time wind direction and velocity monitoring which can be linked to air quality monitoring should be initiated. -Dust (air quality) monitoring must be conducted to determine the extent and source of dust pollution. -All information and reporting to be included in a bi-annual repo	
	Dust generation from haulage trucks offloading/ loading materials into the warehouse	-Dust fallout can lead to respiratory illnesses especially to those working in the area. - General air pollution. -Nuisance to nearby residents	Environmental	Permanent	-Environmental Control Officer -Site Manager	-Ensure that protective equipment such as respirators are distributed to employees, and ensure their use. -Site notices to be erected on and around the site to inform visitors and surrounding residents. -Dust fallout measurement and collection. -Warehouse dust scrubbers should be installed to prevent the dust from escaping the warehouse.	**Operation**
Loss of Biodiversity	-Pollution from potential pollution ca result in marine biodiversity loss due to contamination.	-Declining marine and terrestrial biodiversity. -Unbalanced ecosystem resulting in species loss.	Environmental	Permanent	-Environmental Control Officer -Site Manager	- The proposed project area is already disturbed, hence there is little vegetation to be affected by the development. - No ground disturbances are anticipated from the remodelling. .	**Construction**

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
Greenhouse gas emissions	Green House Gasses (GHGs) emissions will be produced from the following activities: • Fuels combustion for trucks and equipment • Chemicals and ore being handles on site such as Sulphur can have particulate matter generation.	-Global climate change - Air pollution	Environmental	Construction phase	-Environmental Control Officer -Site Manager -Department of Environmental Affairs.	-Develop SOPs for any martials with potential to emit GHGs -Design an operation system that cuts on emissions.	**Operation**
Waste Generation	-Construction and operation are associated with a lot of raw material and activities that results in pollution -The waste from the warehouse might include hazardous waste.	-Pollution from waste	Environmental	Construction phase	-Environmental Control Officer -Site Manager	- Waste reduction measures should be implemented and all waste that can be re-used / recycled must be kept separate. -Ensure adequate waste storage facilities (bins, drums and / or bags) are available and that these are clearly labelled to allow for segregation of wastes into different classes. -Education of personnel is paramount to create awareness for the proper handling and disposal of waste. -Ensure waste cannot be blown away by wind. -Prevent scavenging (human and non-human) at waste storage sites. -Contaminated bilge water, wash water, etc. should be treated as potentially	**Operation**

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
						hazardous waste that must be disposed of at appropriately classified facilities. -Ships at anchor in the port area must be monitored for any illegal dumping of wastes. -Waste in the warehouse area and on the coastline within port limits must be regularly removed and disposed of. -No waste streams may be directed into the ocean without a disposal permit and then only under conditions imposed by the permit conditions -Liaise with the municipality or private contractors regarding handling of different waste streams. -Waste should be disposed of regularly and at appropriately classified disposal facilities in Lüderitz, this includes hazardous material (empty chemical containers, contaminated rugs, paper, water and soil) that are collected by authorised and licenced private waste collection and handling companies. -The MSDS available from suppliers for disposal of contaminated products and empty containers should be shared with waste handling companies.	

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
						-Waste water and sewage must be disposed of according to their relevant permit requirements.	
Safety and Health risks	Every activity associated with the warehouse is reliant on human labour and therefore exposes them to health and safety risks. Injuries can occur due to incorrect lifting of heavy equipment and materials, falling from heights, stacked items tipping over, getting caught in moving parts of machines, accidents involving forklifts and vehicles, and exposure to hot and cold temperatures. Some chemicals handled and stored on site are hazardous with inherent health risks to personnel on site when inhalation, accidental ingestion, eye or skin contact occurs.	-Injuries to workers such as Occupational dermatitis, slips and fall of humans and objects, musculoskeletal disorders, etc.	Health and safety	Construction phase	ECO	**Prevention:** -All Health and Safety standards specified in the Labour Act should be complied with. Consider the World Health Organisation: International Health Regulations (2005) with specific reference to Section 4 (no. 3): "Strengthen public health security in travel and transport". Strict security control at the entrance gate including alcohol testing and access permit checks. For any mining ore that will be transported via the port, the health related risks should be assessed, including whether asbestos is present or whether the ore has radioactive properties.	**Operation**

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
	Security risks are related to unauthorized entry, theft and sabotage. Asbestos may be present in old buildings. These present a health risk, especially during upgrade and construction. Mining ore that is transported via the warehouse may contain materials that have inherent health risks. This may include for example asbestos. Ore may also have radioactive properties					Liaison with the Ministry of Health and Social Services and the National Radiation Protection Authority is essential. Clearly label dangerous and restricted areas as well as dangerous equipment and products. Clearly demarcate areas where access is prohibited without special permission or areas where specific personal protective equipment (PPE) is required. Provide all employees with required and adequate PPE where needed. Equipment and products on site must be placed in a way that does not encourage criminal activities (e.g. theft). Ensure that all personnel receive adequate training on operation of equipment and handling of hazardous substances.	

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
						Always follow safe stacking and storage methods. Implementation of maintenance register for all equipment, fuel and hazardous substance storage areas. Lockout / tagout procedures should be followed where applicable. Compile and maintain hazard analysis and critical control points (HACCP) program for all activities. **Mitigation:** -Selected personnel should be trained in first aid and a first aid kit must be available on site. The contact details of all emergency services must be readily available. Implement and maintain an integrated health and safety management system, to act as a monitoring and mitigating tool, which includes: colour coding of areas, operational, safe work and medical procedures, permits to work, emergency response plans,	

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
						housekeeping rules, MSDS's and signage requirements (PPE, flammable etc.). Security procedures and proper security measures must be in place to protect workers and clients. Strict security that prevents unauthorised entry into restricted areas. Σ Asbestos structures, if any, must be replaced or made inert. All asbestos demolitions must be performed by accredited contractors	
	Electrical hazards	-Fatalities and fires	Health and safety	Construction and operation	ECO	-Employees should be trained on electrical safety before working on site. -Safety representative with training on electrical hazards emergency management should be station on site always during construction -Safety signs during construction and operation should be put on site, no go areas should be labelled, PPE specifications should be clear to maintenance personnel.	**Operation**
	Radiation (Non Ionizing)	Carcinogenic consequences	-Health -Social	Permanent	-Environmental Control Officer	-There are studies that indicate potential of radiation from some mineral	**Operation**

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
					-Site Manager	ore to have carcinogenic impacts after prolonged exposure. -However there will be no prolonged exposure to anyone.	
Groundwater, Surface Water And Soil Contamination	Operations at the warehouse entail the storage and handling of various potential pollutants that may present a contamination risk of the environment. These include hydrocarbon and synthetic fuels, oils and hydraulic fluids, chemicals, mineral ores, waste products not contained, effluent discharges, etc.	Pollution and contamination of groundwater, ocean water and soil.	Environmental	Permanent	-Environmental Control Officer -Site Manager	**Prevention:** -Spill control structures and procedures related to fuel installations must be in place according to SANS 10089 standards or better. -All fuel installations and tanks must conform to relevant SANS standards. -Regular inspection and maintenance of sumps, separators, vehicles, forklifts, cranes, etc. should take place. -Any leaks detected must be repaired without delay and any maintenance that must occur within the port area must be performed on spill containment slabs or over drip trays. -Hazardous waste and contaminated water and soil must be disposed of at an appropriately classified facility or by approved contractors. -Hazardous waste disposal certificates must be kept on file. -The warehouse when it is handling mineral ore and chemical storage must remain closed with adequate dust	

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
						suppression systems to limit or prevent the formation of windblown dust. -Any mineral ore and / or chemicals trapped in tyres must be cleaned prior to vehicles leaving warehouses or bulk storage areas of these products. -The use of rumble grids and physical inspection of tyres should be implemented. -For bulk bags the stacking heights must be observed to prevent bag damage and product spillage. Mitigation: - Any fuel spillage of more than 200 litre must be reported to the Ministry of Mines and Energy. -Emergency response plans and spill contingency plans must be in place and include all fuels, chemicals or hazardous substances being handled. In the case of tenants, copies of these documents must be submitted to Namport. -Spill containment equipment such as booms and absorbents must be readily accessible. Training in the use of these are paramount.	

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
						-For any chemicals that may form part of effluent to be discharged into the ocean, environmental effects must be considered and alternative chemicals investigated if needed. Effluent must meet standards as per the effluent discharge permits. -Any mineral ore, chemical dust (e.g. sulphur), hydrocarbon spills or any other hazardous substance spill on the quay area must be cleaned and disposed of to prevent it from entering the ocean either by wind or water runoff. -Use of reputable and well trained contractors are essential. -A report should be compiled bi-annually of all spills or leakages reported and any monitoring results. The report should contain the following information: date and duration of spill, product spilled, volume of spill, remedial action taken, comparison of pre-exposure baseline data (previous pollution conditions survey results if available) with post remediation data (e.g. soil/groundwater hydrocarbon	

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
						concentrations) and a copy of documentation in which the spill was reported to Ministry of Mines and Energy (where required for hydrocarbon spills).	
Positive Impacts							
Employment creation	The development provides an opportunity of outsourcing work	- Improves disposable income to those employed and their immediate families.	Socio-economic	Project life time	-Site Manager	- Work with local leadership (councillor) on acquiring non-skilled labour from the residents.	**Operation**
Business linkages	-Raw materials acquiring and contracting companies provide an opportunity for businesses.	-Local suppliers will be presented with an opportunity to empower their businesses. -Construction workers can be provided with accommodation, food and services from the local community increasing business activities.	-Socio-economic	Construction phase	-Site Manager	-The proponent will outsource most of its materials and services from Tsumeb	**Operation**

2. CHAPTER FOUR: CONCLUSION AND RECOMMENDATIONS

2.1. RECOMMENDATION FROM ENVIRONMENTAL ASSESSMENT PRACTITIONER

Based on the information provided it is the opinion of JBIC CC that no fatal flaws have been identified for the proposed development and that the information contained in this report is sufficient enough to allow DEA to make an informed decision.

Junior Baiano Industrial Consultants cc therefore recommends that Environmental Clearance be granted for the proposed development. However, the proposed activity is anticipated to have potential impacts on the surrounding neighbours and the marine environment, as such the Environmental Clearance Certificate should have the following set conditions:

- Potential dust pollution MUST be monitored using dust collection buckets.
- Effluent sampling should be conducted every month.
- An Environmental Control Officer with an Environmental Science Degree should be appointed for the implementation of the EMP.

References

Enviro Dynamic.2014. Environmental Assessment Keetmanshoop Signal transmission, Namibia

FAO, 1998. World reference base for soil resources. World Soil Resources Report, vol. 84. FAO, Rome.

FAO, 1998.World reference base for soil resources.World Soil Resources Report, vol. 84. FAO, Rome.

Government of Namibia. 2008, Government Gazzette of the Republic of Namibia. Government notice No.1: Regulations for Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA)-Windhoek

Government of Namibia.2008, Government Gazette of the Republic of Namibia. Government notice No.1: Regulations for Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA)-Windhoek

IFC.2007. Stakeholder Engagement: A good practice handbook for companies doing business in emerging markets. IFC, Washington D.C

IFC.2007. Stakeholder Engagement: A good practice handbook for companies doing business in emerging markets. IFC, Washington D.C

Mendelsohn,J., el Obeid, S.2003.A digest of information on key aspects of Namibia's geography and sustainable development prospects. Research and Information Services of Namibia

MET (Ministry of Environment and Tourism). 2012. *Environmental Management Act no. 7 of 2007*. Windhoek: Directorate of Environmental Affairs, Ministry of Environment and Tourism