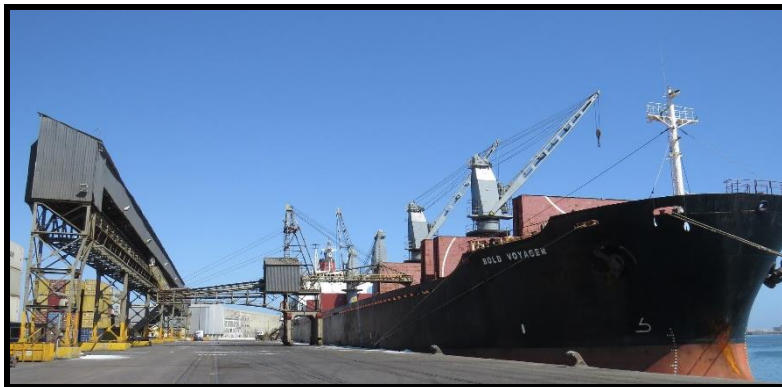


THE HANDLING AND TRANSPORT OF CHEMICALS FROM THE PORT OF WALVIS BAY

UPDATED ENVIRONMENTAL MANAGEMENT PLAN



Assessed by:



Assessed for:



November 2020


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1 OBJECTIVES OF THE ENVIRONMENTAL MANAGEMENT PLAN

Logistics Support Services (Pty) Ltd requested Geo Pollution Technologies (Pty) Ltd to update their existing environmental management plan (EMP) in order to renew their existing environmental clearance certificate (ECC) that was issued on 20 September 2017. The renewed ECC is required for the continued handling and transport of chemicals from the Port of Walvis Bay. The EMP provides management options to ensure impacts related to the handling and transport of chemicals are minimised. An EMP is a tool used to take pro-active action by addressing potential problems before they occur. This should limit the corrective measures needed, although additional mitigation measures might be included if necessary. The EMP acts as a stand-alone document, which can be used during the various phases of any proposed activity or development.

As an international freight forwarding company, Logistics Support Services has a diverse array of tasks related to the administrative aspects of shipping goods from international markets to local clients. The clients being mostly in, but not limited to, the mining sector of Namibia, as well as other southern African countries. Logistics Support Services does not own and operate cargo handling and transport equipment (trucks, cranes, etc.), but rather arrange and administrate the entire process of importing, handling, transporting and delivery of goods, including any incidental matters thereto, otherwise referred to as supply chain management. However, all contractors and sub-contractors taking part in the project should be made aware of the contents of the EMP, so as to plan the relevant activities accordingly in an environmentally sound manner.

The objectives of the EMP are:

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

Logistics Support Services may choose to implement an environmental management system. At the heart of an environmental management system is the concept of continual improvement of environmental performance with resulting increases in operational efficiency, financial savings and reduction in environmental, health and safety risks. An effective environmental management system would need to include the following elements:

- ◆ A stated environmental policy which sets the desired level of environmental performance;
- ◆ An environmental legal register;
- ◆ An institutional structure which sets out the responsibility, authority, lines of communication and resources needed to implement the environmental management system;
- ◆ Identification of environmental, safety and health training needs;
- ◆ An environmental program(s) stipulating environmental objectives and targets to be met, and work instructions and controls to be applied in order to achieve compliance with the environmental policy; and
- ◆ Periodic (internal and external) audits and reviews of environmental performance and the effectiveness of the environmental management system.
- ◆ The EMP.

2 THE ENVIRONMENTAL MANAGEMENT PLAN

The following general guidance for the EMP is based on the findings of the initial EIA and risk assessment carried out by Geo Pollution Technologies (Faul & Botha, 2017).

2.1 Operations – Identified Impacts

The following is the summary of the identified impacts:

- ◆ The possibility of environmental pollution as a result of windblown chemical dust or spillage is possible.
- ◆ A risk to human health is possible due to the hazardous nature of some chemicals.

- ◆ During operations traffic impacts are expected.
- ◆ The risk of groundwater and soil pollution is present.
- ◆ The risk of fire and/or explosions exist.

2.2 Operations – Mitigating Measures

The following is a summary of the proposed management plan, which will aid in mitigating / preventing possible risk related to the operations and relevant activities. The measures provided have taken into consideration all the risk perceptions raised by all stakeholders during the initial EIA:

- ◆ Environmental pollution must be prevented by preventing windblown chemical dust from entering the environment and by appointing reputable and reliable contractors for transport. All material safety data sheet instructions and IMDG (International Maritime Dangerous Goods) Codes must be followed. Any spills must be cleaned immediately. All Namport operation procedures as well as the EMP for the Port of Walvis Bay must be considered and adhered to where applicable.
- ◆ All relevant personal protective equipment should be a compulsory requirement.
- ◆ Noise and traffic management must be conducted when required.
- ◆ Fire prevention and firefighting plans must be in place. All products to be handled and stored according to material safety data sheets and IMDG Codes.

3 THE IMPLEMENTATION OF THE ENVIRONMENTAL MANAGEMENT PLAN

Table 1 and Table 2 outline the management of the environmental elements that may be affected by the different activities, grouped in each phase of development. These groups are as follows:

- ◆ Planning Phase
- ◆ Operational Phase

Note that since Logistics Support Services performs a supply chain management function, no construction phase is included and decommissioning is mainly administrative as infrastructure used is usually the property of Namport and/or the contractors.

The EMP is a living document that must be prepared in detail, and regularly updated, by the proponent as the project progress and evolve. The tables below act as a guideline for the EMP to be established by the proponent. Impacts addressed and mitigation measures proposed are seen as minimum requirements which have to be elaborated on. Delegation of mitigation and reporting activities should be determined by the proponent and included in the EMP.

All monitoring results must be reported on as indicated. These are important for any future renewals of the environmental clearance certificate and must be submitted to the Ministry of Environment, Forestry and Tourism on a bi-annual basis. This is a requirement by the Ministry.

Table 1. Planning for Operations of the Project

Activity	Objective	Action	Timing	Proof of Compliance	Responsible Body
Compliance	To comply with all legal requirements for the project in Namibia.	Apply for the necessary permits from the various ministries, local authorities and any other bodies that governs the proposed activity. Finalise negotiations and resolve any outstanding issues, if any, over the allocation of user rights within the Port of Walvis Bay.	Prior to commencement and during the course of operations	All contracts, permits, certificates and other legal documents on file.	Proponent
Appointments	To appoint reputable contractors and operational personnel and establish the EMP, a legal requirement that forms part of the contract with the contractor and employees.	Appoint contractors and employees and enter into an agreement which includes the EMP. Ensure that the contents of the EMP are understood by the contractor, sub-contractors, employees and all personnel who will be present on site.	Prior to commencement and during the course of operations	Contracts on file	Proponent; Contractor
Management	Establish a management system to implement and monitor health, safety and environment (HSE).	Make provisions to have a health, safety and environmental coordinator to implement the EMP and oversee occupational health and safety as well as general environmental related compliance during operations. Have the following emergency plans, equipment and personnel in place to deal with all emergencies: EMP, risk management plans, emergency response plans and HSE manuals Adequate protection and indemnity insurance cover for incidents; Comply with the provisions of all relevant safety standards; Procedures, equipment and materials required for emergencies.	Prior to commencement and during the course of operations	Documentation on file Personal protective equipment (PPE) available Signage related to restricted areas, dangerous areas, and PPE requirements on site Emergency response material on site	Proponent; Contractor

Activity	Objective	Action	Timing	Proof of Compliance	Responsible Body
Restoration Fund/Insurance	To establish a fund/insurance for future environmental restoration or pollution remediation if ever required.	To establish a fund for ecological restoration should environmental damage result from project activities.	Prior to commencement and during the course of operations	Financial statements of restoration fund/proof of insurance	Proponent; Independent Specialist Consultant
Reporting	To establish a reporting system to report on monitoring and compliance aspects of operations as outlined in the EMP.	Establish a reporting system to report on aspects operations as outlined in the environmental management plan. Keep monitoring reports on file for bi-annual submission to the Ministry of Environment, Forestry and Tourism in support of ECC renewal applications. This is a requirement by the Ministry.	During operations	Bi-annual reports monitoring	Proponent; Contractor
Environmental Clearance Renewal	To renew the ECC every three years.	Appoint a specialist environmental consultant to update the environmental impact assessment (if required) and EMP and apply for renewal of the ECC.	Prior to expiry of ECC	Renewed ECC	Proponent; Independent Specialist Consultant

Table 2. The Operational Phase

The Operational Phase		Mitigation	Monitoring	Responsible Body
Criteria	Nature	Mitigation	Monitoring	Responsible Body
Enhanced skills and transfer technology to Walvis Bay and subsequent economic development	People need skills to perform their jobs. The technology to do something is often not found locally. Development of people and technology are key to economic development.	Training must be provided to Namibians to ultimately employ a predominantly Namibian workforce.	Copies of training certification or managerial references on file. 6 Monthly summary report based on actual training and the enhancement of skills and transfer of technology should be compiled.	Proponent
Increased spread of HIV/AIDS; Increased influx to Walvis Bay; Increased informal settlement and associated problems; Reduced property values	New and existing developments attract people who seek work. This in turn can increase the extent of informal settlements and its associated problems. The increased trucking and distribution of goods from Walvis Bay could contribute to the spread of HIV / AIDS. It is possible that these can affect property prices in the area depending on the proximity to a residential site.	Restricted employment for local people only should be practiced. Deviations from this practice should be justified appropriately. Educational programs on HIV/AIDS. Contracting of transport companies with educational programmes for truck drivers is imperative.	6 Monthly summary report based on educational programmes and training conducted. 6 Monthly report and review of employee demographics.	Proponent
Employment	The project will provide employment and result in many indirect employment opportunities.	If skills exist locally Namibians must be employed. Alternatively training must be provided to Namibians to ultimately employ a predominantly Namibian workforce. Deviations from this practice should be justified appropriately.	6 Monthly summary report based on employee records.	Proponent
Chemical Supply and Economic Injection	Reliable supply of chemicals to local industries such as mines and to southern Africa. Economic injection into Walvis Bay and Namibia as a whole.	Use local Namibian contractors. Deviations from this practise should be justified.	6 Monthly summary report based on contractors records.	Proponent
Traffic	Increased traffic leading to traffic congestion, accidents and increased	Adhere to all local, regional and national regulations pertaining to the trucking industry and road usage.	Any complaints received regarding traffic issues	Proponent

Criteria	Nature	Mitigation	Monitoring	Responsible Body
	deterioration of roads.	<p>Prior to the transport of hazardous or explosive cargo a journey plan must be prepared which include routes with minimum potential traffic (and other) impacts. This includes the use of the C34 (M0044) road behind the dunes between Walvis Bay and Swakopmund.</p> <p>Trucks may not overloaded and must report at the weighbridge except if exempted as the case may be for explosive cargos.</p> <p>Trucks should not be allowed to park, outside designated areas outside port limits for extended periods of time, neither should they obstruct neighbouring businesses.</p>	<p>should be recorded and remedial action implemented.</p> <p>A register should be kept of all cargo transported.</p> <p>A report should be compiled every 6 months of all incidents reported, complaints received, remedial action taken and cargo transported.</p>	
Fire and Explosions	Some products to be handled are flammable and/or explosive.	<p>For explosive chemicals predetermined routes and times of transport should be followed.</p> <p>Storage and handling of flammable or explosive products should be according to their material safety data sheet instructions which includes the segregation of incompatible products.</p> <p>Firefighting measures as per the material safety data sheets of the products should be adhered to.</p> <p>In addition to this, all personnel have to be sensitised about responsible fire protection measures and good housekeeping such as the removal of flammable materials including rubbish. Regular inspections should be carried out to check for these materials at the site.</p> <p>A holistic fire protection and prevention plan is needed. This plan must include an emergency response plan, firefighting plan and spill recovery plan.</p> <p>Experience has shown that the best chance to rapidly put out a major fire is in the first 5 minutes. It is important to recognise that a responsive fire prevention plan does not solely include the availability of firefighting equipment, but more importantly, it involves premeditated measures and activities to timeously prevent, curb and avoid conditions that may result in fires. An integrated fire prevention plan</p>	<p>A report should be compiled every 6 months of all incidents reported. The report should contain dates when fire drills were conducted and when firefighting equipment was tested.</p>	Proponent

Criteria	Nature	Mitigation	Monitoring	Responsible Body
Health, Safety and Security	Risks include work related injuries or exposures to harmful products, theft and sabotage.	<p>should be drafted.</p> <p>Implement and maintain an integrated health and safety management system, to act as a monitoring and mitigating tool.</p> <p>Comply with all health and safety standards as specified in the Labour Act and related legislation.</p> <p>Clearly label dangerous and restricted areas as well as dangerous equipment and products.</p> <p>Lock away or store all equipment and goods in a manner suitable to discourage criminal activities (e.g. theft).</p> <p>Provide all employees with required and adequate personal protective equipment (PPE) where required.</p> <p>Ensure that all personnel receive adequate training on the operational procedures and the handling of hazardous substances.</p> <p>Train selected personnel in first aid and ensure first aid kits are available.</p> <p>The contact details of all emergency services must be readily available.</p> <p>Apply and adhere to all industry specific health and safety procedures and regulations applicable to the handling of hazardous substances.</p> <p>Treat all minor work related injuries immediately and obtain professional medical treatment if required.</p> <p>Assess any health and safety problems and implement corrective action to prevent future occurrences.</p>	A report should be compiled every 6 months of all incidents reported. The report should contain dates when training was conducted and when safety equipment were inspected and maintained.	Proponent
Noise	Noise will be produced by heavy motor vehicles and the use of forklifts and related machinery.	The Walvis Bay Municipality has no regulations with regard to noise levels. A significant portion of operations is situated in an industrial area so there is no restriction on the times of operation. The World Health Organization guideline on maximum noise levels (Guidelines for Community Noise, 1999) to prevent hearing impairment for	Any complaints received regarding excessive noise should be recorded with notes on remedial action taken.	Proponent

Criteria	Nature	Mitigation	Monitoring	Responsible Body
		<p>workers on site can be followed. This limits noise levels to an average of 70 dB over a 24 hour period with maximum noise levels not exceeding 110 dB during the period.</p> <p>The nuisance created by audible warning signals on trucks and forklifts at night can be prevented by switching to a flashing light or 'broadband white noise' system instead of the normal audible warning signals. During daytime the audible warnings may be used.</p> <p>All trucks and machinery must be regularly serviced to ensure minimal noise production.</p>	<p>All complaints, remedial action taken and additional data, if available, to be compiled in a report every 6 months.</p>	
Waste Production	<p>Waste can be of domestic origin or hazardous waste that include contaminated materials such as packaging materials.</p>	<p>Waste should be disposed of regularly and at appropriate disposal facilities.</p> <p>Products that can be re-used or re-cycled should be kept separate and treated as such.</p> <p>Due to the nature of some hazardous materials they should be disposed of appropriately and at an appropriately classified waste disposal facility. See the material safety data sheets available from suppliers if the user is not sure how to dispose of the substance.</p>	<p>A register of hazardous waste disposal should be kept. This should include type of waste, volume as well as disposal method/facility.</p> <p>Any complaints received regarding waste should be recorded with notes on action taken.</p> <p>All data to be compiled in a 6 month report.</p>	Proponent
Groundwater, Surface Water and Soil Contamination	<p>Spilled or windblown products entering the environment</p> <p>Porous surface substrate can allow unwanted hazardous and ecologically detrimental substances to seep down to the water table.</p>	<p>Emergency response plans and spill contingency plans must be in place and include all chemicals being handled. These should be updated as new chemicals are added to those being handled.</p> <p>The entering of chemicals into the environment must be prevented at all costs.</p> <p>If spills occur clean-up should be initiated immediately.</p> <p>Use of reputable and well trained contractors are essential.</p> <p>Offloading bulk cargo during strong winds must be prevented.</p>	<p>A report should be compiled every 6 months of all spills or leakages reported. The report should contain the following information:</p> <ul style="list-style-type: none"> ● date and duration of spill ● product spilled ● volume of spill ● remedial action taken ● copy of documentation in which spill was 	Proponent

Criteria	Nature	Mitigation	Monitoring	Responsible Body
		<p>Use of spill control measures where appropriate (e.g. plastic sheeting)</p> <p>Regular inspection and maintenance of all equipment.</p> <p>To prevent the tearing of breakbulk bags a limit should be placed on stacking height during transport and storage. Only superior quality bags should be used.</p>	reported	
Ecological Impact	The impact on the ecological environment.	<p>The entering of chemicals into the environment must be prevented at all costs.</p> <p>For any offshore pollution the updated National Marine Pollution Contingency Plan must be consulted.</p> <p>Emergency response plans and spill contingency plans must be in place and include all chemicals being handled. These should be updated as new chemicals are added to those being handled.</p> <p>If spills occur clean-up should be initiated immediately.</p> <p>Use of reputable and well trained contractors are essential.</p> <p>Offloading breakbulk cargo during strong winds must be avoided.</p> <p>Use of spill control measures where appropriate (e.g. plastic sheeting)</p> <p>Regular inspection and maintenance of all equipment.</p> <p>To prevent the tearing of breakbulk bags a limit should be placed on stacking height during transport and storage. Only superior quality bags should be used.</p>	<p>A record should be kept of any extraordinary fauna sightings or encounters on site.</p> <p>All data to be compiled in a 6 monthly report.</p>	Proponent
Dust/Air Quality	Chemical dust being blown in the wind	<p>Offloading bulk cargo during strong winds must be avoided.</p> <p>If spills occur clean-up should be initiated immediately.</p> <p>Use of reputable and well trained contractors are essential.</p> <p>Air quality monitoring if regular complaints are received.</p>	<p>If air quality related complaints are received then air quality monitoring should be implemented following consultation with a specialist in this field.</p> <p>A report should be compiled</p>	Proponent

Criteria	Nature	Mitigation	Monitoring	Responsible Body
<p>Cumulative Impact</p>	<p>These are impacts which result from the incremental impact of the action when added to other past, present, and foreseeable future actions regardless of who undertakes such actions. It can result from individually minor, but collectively significant actions taking place over a period of time. In relation to an activity, it means the impact of an activity that in itself may not be significant, may become significant when added to existing and potential impacts resulting from similar or diverse activities or undertakings in the area.</p> <p>Possible cumulative impacts associated with the operational phase include increase in traffic frequenting the site and along the sections of roads used for transport. An increase in emissions from these vehicles will decrease the air quality around the facility. Wear and tear on the roads and increased risks of road traffic incidences could increase. Additional traffic and operational noise would further increase noise impacts in the area. Cumulative environmental impacts are possible from a variety of sources in the Port of Walvis Bay. This includes ship repair activities, spills and pollutants from ships, etc.</p>	<p>Addressing each of the individual impacts as discussed and recommended in the environmental management plan would reduce the cumulative impact.</p> <p>Reviewing biannual and annual reports for any new or re-occurring impacts or problems would aid in identifying cumulative impacts and help in planning if the existing mitigations are insufficient..</p>	<p>every 6 months of all complaints reported and monitoring performed.</p> <p>6 monthly summary report based on all other impacts must be created to give an overall assessment of the impact of the Operational Phase.</p>	<p>Proponent</p>

3.1 Decommissioning and Rehabilitation

Decommissioning is not foreseen during the validity of the ECC. Decommissioning was however assessed as some activities may include modification and decommissioning. Decommissioning will mainly be administrative and will require consultation with relevant stakeholder regarding the termination of all business contracts and termination of employee contracts in line with labour law requirements. Decommissioning may further require the rehabilitation of impacted areas, if any. Any infrastructure including buildings and underground infrastructure forming part of the operations should be removed or handed over to relevant parties. Any pollution caused by the operations must be remediated. The impacts associated with this phase is mainly expected to be of social nature, however may include noise and waste production if any structures of infrastructure requires removal dismantled. Noise must be kept within WHO standards and waste should be contained and disposed of at an appropriately classified and approved waste facility and not dumped in the surrounding areas. Future land use after decommissioning should be assessed prior to decommissioning and rehabilitation initiated if the land would not be used for future purposes. The EMP for the facility may have to be reviewed at the time of decommissioning to cater for changes made to the site and implement guidelines and mitigation measures.

4 CONCLUSIONS

The above EMP, if properly implemented will continue to help minimise adverse impacts on the environment. Where impacts occur, immediate action must be taken to reduce the escalation of effects associated with these impacts. To ensure the relevance of this document to the specific stage of project, it needs to be reviewed throughout all phases.

The EMP should continue to be used as an on-site reference document during all phases of the project, and auditing should take place in order to determine compliance with the EMP for the operations. Parties responsible for transgression of the EMP should be held responsible for any rehabilitation that may need to be undertaken as a result thereof.

Monitoring reports must be submitted to the Ministry of Environment, Forestry and Tourism every six months to allow for the future renewal of the ECC.

5 REFERENCES

Faul A, Botha P. 2017. Environmental Impact Scoping Assessment for the Handling and Transport of Chemicals from the Port of Walvis Bay