APP-001362

CONSTRUCTION AND OPERATIONS OF AN ABATTOIR AND FEEDLOT IN LÜDERITZ, //KARAS REGION

ENVIRONMENTAL MANAGEMENT PLAN

Assessed by:

Assessed for:

Benguella Wealth Farming CC

April 2023

Project:	**CONSTRUCTION AND OPERATIONS OF AN ABATTOIR AND FEEDLOT IN LÜDERITZ, //KARAS REGION: ENVIRONMENTAL MANAGEMENT PLAN**	
Report: **Version/Date:**	Final April 2023	
Prepared for: **(Proponent)**	Benguella Wealth Farming CC PO Box 1042 Lüderitz	
Lead Consultant	Geo Pollution Technologies (Pty) Ltd PO Box 11073 Windhoek Namibia	TEL.: (+264-61) 257411 FAX.: (+264) 88626368
Main Project Team:	**André Faul** (B.Sc. Zoology/Biochemistry); (B.Sc. (Hons) Zoology); (M.Sc. Conservation Ecology); (Ph.D. Medical Bioscience) **Quzette Bosman** (BA. Geography/Sociology); (BA Environmental Management) **Johann Strauss** (BA Geography/Psychology/Environmental Management)	
Cite this document as:	Bosman Q, Faul A, Strauss J; 2023 April; Construction and Operations of an Abattoir and Feedlot in Lüderitz, //Karas Region: Environmental Management Plan.	
Copyright		

TABLE OF CONTENTS

1 OBJECTIVES OF THE EMP 1

2 IMPLEMENTATION OF THE EMP 1

2.1 PLANNING 2

2.1.1 Economic Resilience and Employment 3

2.1.2 Skills, Technology and Development 4

2.1.3 Demographic Profile and Community Health 5

2.1.4 Health, Safety and Security 6

2.1.5 Fire 8

2.1.6 Air Quality– Odours and Dust 9

2.1.7 Noise 10

2.1.8 Liquid Waste–Industrial Waste Water 11

2.1.9 Solid Waste Production 12

2.1.10 Ecosystem and Biodiversity Impact 13

2.1.11 Groundwater and Soil Contamination 14

2.1.12 Water Supply 15

2.1.13 Visual Impact 16

2.1.14 Traffic 17

2.1.15 Cumulative Impact 18

2.2 DECOMMISSIONING AND REHABILITATION 19

3 CONCLUSION 19

4 REFERENCES 19

1 OBJECTIVES OF THE EMP

Geo Pollution Technologies (Pty) Ltd prepared an environmental management plan (EMP) for Benguella Wealth Farming CC (the Proponent) for the proposed construction and operations of a livestock abattoir and feedlot in Lüderitz. The facility is planned on the Remainder of Portion B of Lüderitz Town and Townlands No. 11 in Lüderitz, //Karas Region. As part of the planning phase of the project, the erf has to be established and zoned according for "special" land use. The Proponent intends to construct and operate the abattoir facility for the slaughtering of specifically cattle, sheep and pigs for the local market. The facility will also be equipped with an on-site butchery where carcasses will be portioned and sold to the public. The abattoir will have the capacity to slaughter approximately six heads of cattle, 20 heads of sheep and 10 pigs per week, but the quantities will vary based on the local demand. The number of livestock slaughtered may increase a little should the local market expands. The Proponent further intends to add a small feedlot on the property, where cattle and sheep can be kept until they are ready for slaughtering.

The EMP is based on the environmental impact assessment conducted for the proposed facility in 2023 (Bosman et al., 2023). The EMP provides management options to ensure impacts of the establishment of the erf, and construction and operational activities of the abattoir and feedlot, are minimised. An EMP is a tool used to take pro-active action by addressing potential problems before they occur. This should limit the corrective measures needed, although additional mitigation measures might be included if necessary. The EMP acts as a stand-alone document, which can be used during the various phases (planning, construction, operational and decommissioning) of any proposed activity or development.

All contractors and sub-contractors taking part in construction and operational activities related to the project, should be made aware of the relevant sections of the EMP, so as to plan the relevant activities accordingly in an environmentally sound manner.

The objectives of the EMP are:

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

2 IMPLEMENTATION OF THE EMP

The sections below outline the management of the environmental elements that may be affected by the activities associated with the various phases of the facility. These phases are as follows:

- Planning Phase
- Construction Phase
- Operational Phase
- Decommissioning Phase

The EMP is a living document that must be prepared in detail, and regularly updated, by the Proponent as the project progress and evolve. Impacts addressed and mitigation measures proposed are seen as minimum requirements which have to be elaborated on where appropriate. Delegation of mitigation measures and reporting activities should be determined by the Proponent and included in the EMP. All monitoring results must be reported on as indicated. Reporting is important for any future renewals of the environmental clearance certificate (ECC) and must be submitted to the Ministry of Environment, Forestry and Tourism. Renewal of ECC will require bi-annual reports based on the monitoring prescribed in this EMP.

Various potential and definite impacts will emanate from the construction, operations and decommissioning phases. The majority of these impacts can be mitigated or prevented. The impacts as well as prevention and mitigation measures are listed below.

2.1 PLANNING

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

- Ensure that all necessary permits from the various ministries, local authorities and any other bodies that governs the construction (maintenance) and operations of the facility are in place and valid. This includes registration of the abattoir with the Meat Board of Namibia.
- Ensure all appointed contractors and employees enter into an agreement which includes the EMP. Ensure that the contents of the EMP are understood by the contractors, sub-contractors, employees and all personnel present or who will be present on site.
- Make provisions to have a health, safety and environmental coordinator to implement the EMP and oversee occupational health and safety as well as general environmental related compliance at the site.
- Have the following emergency plans, equipment and personnel on site, where reasonable, to deal with all potential emergencies:
    - Risk management / mitigation / EMP/ Emergency Response Plan and HSE Manuals;
    - Adequate protection and indemnity insurance cover for incidents;
    - Comply with the provisions of all relevant safety standards;
    - Procedures, equipment and materials required for emergencies.
- If one has not already been established, establish and maintain a fund for future ecological restoration of the project site should project activities cease and the site is decommissioned and environmental restoration or pollution remediation is required.
- Keep records of aspects of construction activities, operations and decommissioning as outlined in the EMP.
- Comply with conditions accompanying the ECC.
- Appoint a specialist environmental consultant to update the EIA and EMP and apply for renewal of the environmental clearance certificate prior to expiry, if required.

2.1.1 Economic Resilience and Employment

The construction and operations of the abattoir will lead to changes in the way revenue is generated. An increase of skilled and professional labour will take place due to the operations of the facility. Skilled and unskilled labour will be required for the construction (including future maintenance), operations and activities associated with the abattoir. Employees will mainly be sourced locally while skilled labour/contractors may be sourced from other regions. Employment increases individual and societal economic resilience through, not only the payment of wages, but also contributions to social security and fringe benefits. Positive spin-offs include options for diversification of business in town that may provide support services to the abattoir or buy and sell meat products from the abattoir. The optimisation of the site will generate revenue for the local town council in the form of rates and taxes to be paid. Although limited in scale, the facility will provide an avenue for farmers in the //Karas Region to quickly generate some income through selling of livestock to the abattoir.

Desired Outcome: Contribution to national treasury and remuneration of temporary and permanent employees as per the Labour Act. Continued contributions to social security. Appointment of local contractors. Sourcing of local farmers' livestock.

Actions

Enhancement:

- The Proponent must employ local Namibians where possible and also use local contractors and suppliers, as far as reasonably practical.
- Develop and maintain a contractor management program, inclusive of compliance reviews of service level agreements etc.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Employee records and proof of financial contributions to the various institutions such as social security, receiver of revenue etc. on file.
- Financial records of payments to the town council for services etc.

2.1.2 Skills, Technology and Development

During various phases of construction and operations, training will be provided to a portion of the workforce. Skills are transferred to an unskilled workforce for general tasks. Many technologies required for the development of the facility are new to the local industry, aiding in operational efficiency. Development of people and technology are key to economic development.

Desired Outcome: To see an increase in skills in Lüderitz and the Region, as well as development and technology advancements in associated industries.

Actions

Enhancement:

- Skills development and improvement programs to be made available as identified during performance assessments.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Record should be kept of training provided.
- Ensure that all training is certified or managerial reference provided (proof provided to the employees) inclusive of training attendance, completion and implementation.

2.1.3 Demographic Profile and Community Health

The local community is economically isolated and has a greater vulnerability in terms of economic opportunity. Recent years have seen dynamic changes in industry and related employment (e.g. closure and re-opening of Elisabeth Bay Mine). Such changes typically result in demographic profile fluctuations and community health issues, coupled with an increase in job seekers and further densification of the informal settlement of Lüderitz. Community health is also exposed to factors such as communicable disease like HIV/AIDS and alcoholism/drug abuse. An increase in unemployment in the area may potentially increase the risk of criminal and socially deviant behaviour such as vandalism. The proposed project will contribute to the employment sector and may therefore cumulatively affect the community profile. There is a very low probability that the project will lead to an increase of job seekers in the area, however, the project may contribute to general upliftment of the local community, which, in turn may lead to in-migration and urbanisation. Increased disposable income for 20 families may positively contribute to community health. Although such disposable income may also be applied in socially deviant behaviour such as alcoholism and drug abuse. The overall contribution to community health is however considered to be positive. Abattoir waste may however pose a risk to community health and therefore mitigation measure presented as part of the waste impact should be adhered to.

Desired Outcome: General upliftment of the local community and to prevent the occurrence of social ills and prevent the spread of diseases such as HIV/AIDS.

Actions:

Enhancement:

- Adhere to all municipal by-laws relating to environmental health which includes but is not limited to sand and grease traps for the various facilities and sanitation requirements.
- Ensure sanitation facilities and all related sanitation requirements are available and maintained at the abattoir for all employees.
- Appointment of reputable contractors.
- Educational programmes for employees on HIV/AIDs and general upliftment of employees' social status.
- Adhere to all mitigation and management aspect of Section 2.1.8 and Section 2.1.9.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Facility inspection sheet for all areas which may present environmental health risks, kept on file.
- Proof of educational programmes and training conducted on file.

2.1.4 Health, Safety and Security

Activities associated with operations and maintenance / construction are reliant on human labour and therefore health and safety risks exist. Activities such as the operation of slaughtering equipment (knifes, saws, steel hooks, etc.), cold rooms, vehicles and machinery, as well as handling of hazardous chemicals pose risks to employees.

Potentially harmful *Legionella* bacteria may proliferate in the hot water tanks, plumbing systems and water storage tanks if conditions are favourable and the water systems are not regularly maintained and cleaned. *Legionella* bacteria which, if it becomes airborne in small droplets through for example the ventilation system or through wash water spray, can be inhaled. This may lead to Legionnaires' disease or Pontiac fever in exposed individuals.

Pollution incidents related to chemical, fuel or effluent spillages may pose a health risk. Such a risk also exists in any pathogen contaminated material which may leave or be scavenged from the facility. Security risks will be related to unauthorized entry, theft and sabotage.

The site is located within a peri-urban area and occurrences of wild animals, including venomous species of snakes and scorpions are possible. Encounters with these wild animals, may pose risks to staff.

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

Actions

Prevention:

- All health and safety standards specified in the Labour Act should be complied with.
- All industry specific health and safety procedures and regulations applicable should be in place and adhered to.
- Implement and maintain an integrated health and safety management system, to act as a monitoring and mitigating tool, which includes:
    - first aid kits and training;
    - operational, safe work, first aid and medical procedures;
    - job hazard analysis and standard operating procedures where required;
    - emergency response plans and drills;
    - lockout tagout protection when servicing or maintaining potentially dangerous equipment;
    - housekeeping programmes;
    - MSDS's and signage requirements (PPE, flammable etc.);
    - a medical surveillance program.
- Selected staff should be trained in first aid and first aid kits must be readily available together with the contact numbers for emergency ambulance and professional medical services.
- All relevant staff should receive adequate training on hygiene in the working environment and on the correct methods of executing their respective tasks and handling of equipment (specifically dangerous equipment such as electrical saws.
- Clearly label dangerous and restricted areas as well as dangerous equipment and products. These include the slaughtering area, chemical storage, fuel storage, etc. Clearly indicate compulsory personal protective equipment (PPE) requirements for specific areas.
- Provide all relevant employees with required and adequate PPE.
- Identify trip hazards and remove where possible. Where such structures form part of the required operational infrastructure, they should be painted in bright or distinguishable colours.
- Non-slip floors, especially in slaughtering and meat handling area.
- Safety procedures and training must be in place for working at heights.
- Educate employees and have emergency procedures in place for injuries that may occur on site.

- Staff to be informed on responsible knife handling to not only prevent injuries to themselves, but also to other employees (e.g. when walking with knife in hand).
- Develop and maintain an infrastructure, machinery and tools register for the abattoir inclusive of a maintenance and inspection schedule, this should include driven machinery, fuel storage, chemical storage, etc.
- A *Legionella* risk assessment and management plan should be compiled which includes inspection and analysis of water sources potentially containing *Legionella* spp.
- Ensure legal appointments, of appropriately qualified and trained personnel, are in place for all necessary maintenance and specialised operational activities.
- The abattoir must have emergency plans to deal with diseased animals that may be found among livestock delivered and kept in lairages prior to slaughtering. This includes the design and planning for isolation pens and disposal of carcasses.
- Staff must be regularly trained in procedures pertaining to containment of disease outbreaks and destruction and disposal of diseased animals.
- Staff should be educated / trained on human wildlife conflict management and not to confront wild animals or other potentially venomous / dangerous animals that may be encountered on site.
- Security procedures and proper security measures must be in place and equipment and goods must be locked away on site or be placed in a way that does not encourage criminal activities (e.g. theft). Lighting used at night should be adequate for security purposes.

Mitigation:

- Report any injuries or incidents to the appropriate manager and take appropriate action (e.g. first aid, transport to medical facility, etc.).
- Implement mental awareness programs specifically related to the continued slaughtering process' risks to employees' psychological and behavioural patterns including coping mechanisms.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Meat Industry Act conditions for the registration of abattoirs.
- Health and safety management system.
- Any health, safety and security incidents must be recorded with remedial action taken and actions to prevent future occurrences.
- Record all health, safety, and security related incidents reported with actions taken to address such incidents. Include dates when training were conducted and when safety equipment and structures were inspected and maintained.

2.1.5 Fire

Failing electrical infrastructure, maintenance and construction activities, incorrect chemical storage, etc., can result in accidental fires.

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

Actions:

Prevention:

- Prepare a holistic fire protection, prevention and response plan. This plan must include evacuation plans and signage, an emergency response plan and a firefighting plan.
- Personnel training (safe operational procedures, firefighting, fire prevention and responsible housekeeping practices).
- Maintain firefighting equipment at approved intervals and keep a maintenance register.
- Ensure good housekeeping to reduce fire risks associated with accumulated waste materials, etc.
- No open fires to be allowed on site (e.g. for cooking or heating) except at designated areas and with the necessary approval from management.
- No fires may be ignited with the intent to burn garden waste on site without managements consent. No general, slaughterhouse or hazardous waste should be burned on site.
- Ensure all fuel and chemicals are stored and handled according to MSDS and SANS instructions.

Mitigation:

- Implement the fire response plan in the event of a fire and notify neighbours in case of potential spreading of a fire to nearby properties.
- Quick response time by trained staff will limit the spread and impact of fire.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- In-house fire protection, prevention and response plan which will be approved by the Town Council's Fire Department.
- Keep record of any fire related incidents and actions taken to ensure that such incidents do not repeat themselves.
- Maintain fire equipment testing and servicing schedule.

2.1.6 Air Quality– Odours and Dust

Some dust will result from construction activities and traffic in the area. No effluent treatment in effluent ponds or similar is planned, thus no odours related to effluent is expected. However, if biological waste, including from the feedlot, is not disposed of timeously, or various structures are not cleaned regularly, odours can result from rotting materials. This may attract pests such as flies.

Desired Outcome: To prevent any nuisance and reduce emissions.

Actions

Prevention:

- Good housekeeping is essential not only to stop odours from developing, but also to ensure hygienic conditions.
- Adopt strategies to reduce odours from the livestock lairages. These can include:
  - Scraping and removing the manure for disposal, then washing down using low volume high pressure water spray as soon as possible after sheep leaves the lairage.
  - Manure should be collected and disposed of daily from the feedlot.
- The hides store should be well ventilated and hides removed timeously.
- The skins store area should be well ventilated.

Mitigation:

- Dust suppression to be conducted if required during earthworks for construction of the facilities.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Keep record of all complaints received and actions taken to address complaints and prevent future occurrences.

2.1.7 Noise

The multifaceted operations of an abattoir involve various systems and machines which will generate noise of various intensity. Maintenance and construction activities may cause temporary elevated noise levels. Noise impacts will be limited to workers and visitors present on site as no other receptors (neighbours) are present near the facility.

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

Actions

Prevention:

- For various components of the abattoir and surroundings, adhere to the applicable prescribed noise levels as contained in:
  - *Labour Act, 1992: Regulations relating to the health and safety of employees at work*
  - *World Health Organization (WHO) guidelines on maximum noise levels (Guidelines for Community Noise, 1999).*
- All machinery and vehicles must be regularly serviced and lubricated where applicable to ensure minimal noise production.
- Where relevant, install mechanical equipment on mounts designed to isolate structure-borne vibration and noise.
- All ventilation and extractor fans should be noise efficient or fitted with silencers, if required.

Mitigation:

- Implement mitigation which may include noise barriers such as screens around noisy equipment and operations and hearing protectors as standard PPE for workers in situations with elevated noise levels.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Labour Act standards and WHO Guidelines.
- Report on complaints received regarding noise and actions taken to address complaints and prevent future occurrences.

2.1.8 Liquid Waste–Industrial Waste Water

Industrial waste water to be managed on site consists of wash water from the slaughtering, processing and cold storage areas, wash water from the lairages and truck washing area, blood, excrement, cleaning chemicals, and slaughterhouse wastes. If the liquid waste stream is not managed effectively (e.g. preventing excessive blood from entering) it can have negative impacts on the Town Council's effluent treatment ponds' efficiency. The overall contribution of effluent to the Town Council's treatment plant is expected to be low.

Desired Outcome: To reduce the amount of industrial waste water produced, and to adequately remove solids, fat and blood from waste water to prevent impacts on the Town Council's effluent treatment facilities.

Actions

Prevention:

- Develop and implement an effluent management plan, this should include waste water reduction initiatives and regular inspection and maintenance of wastewater reticulation infrastructure.
- All foreign material must be collected and prevented from entering the wastewater stream.
- Regular monitoring and periodic cleaning of sumps and screens.
- No effluent may be released (accidentally or purposefully) into the environment.
- Ensure the septic tank is efficient in pre-treatment of waste water entering the sewers and ultimately the effluent treatment ponds of the Town Council.
- Construction and operations of the septic tank should be according to Department of Water Affairs and Forestry, Code of Practice: Volume 1, Septic tank Systems.

Mitigation:

- To reduce effluent volumes the following should be considered:
  - Operators should be trained in water conservation and water usage monitoring.
  - Use high pressure low volume water hoses to minimise the amount of water required for cleaning operational areas.
  - Water used for general washing must be pressurized.
  - Cold water must be used to clean surfaces soiled with blood (except periodic deep cleaning at the end of the day) as the use of hot water causes congealing of the blood, making cleaning more difficult, thus resulting in unnecessary wastage of water.
  - All hoses must be fitted with self-closing nozzles to prevent wastage when not in use. Where the hoses are frequently used, pistol grips must be used.
  - All hoses, fittings and connections must be leak free and replaced if leaks are detected.
  - Slaughterhouse waste and manure in the lairages can be dry swept and removed prior to the areas being washed.
- Biodegradable cleaning materials should be investigated to limit impacts on the effluent ponds and the environment.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Department of Water Affairs and Forestry, Code of Practice: Volume 1, Septic tank Systems.
- Maintenance schedule of the wastewater reticulation system should be kept on file.

2.1.9 Solid Waste Production

Solid waste can be dung from the lairages, slaughterhouse wastes or it can be waste originating from kitchens, offices, etc. Construction and maintenance waste can building rubble and discarded or obsolete equipment. Some wastes can be dangerous / hazardous such as diseased animal carcasses, obsolete or expired chemicals, contaminated fuels or chemicals, etc.

Desired Outcome: To reduce the amount of waste produced, and prevent pollution and littering.

Actions

Prevention:

- Develop and implement a waste management program, this should include waste reduction and recycling initiatives and regular inspection and maintenance of waste storage and disposal areas.
- All employees should be educated on proper waste handling and disposal and importantly on the segregation of waste according to the different waste streams and their appropriate disposal locations.
- Ensure adequate temporary waste storage facilities are available that prevents waste being blown away by wind and prevent scavenging (human and non-human) of waste.
- Biological waste must be collected timeously to ensure hygienic conditions and that such wastes do not accumulate on site and attract vermin.
- All hazardous materials, including chemical container disposal, should be conducted as per their MSDS instructions. All hazardous waste chemicals containers requiring a triple rinse system for disposal purposes, should have the rinse water collected in a separate system and not disposed of into the oxidation ponds unless approved as per a chemical and biological assessment of the ponds and related interaction with the hazardous chemicals.
- Should any buildings or structures be decommissioned, all waste and infrastructure should be disposed of at a pre-approved landfill site.

Mitigation:

- Waste should be disposed of regularly.
- Liaise with the local authority regarding waste and handling of hazardous waste.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- A register of hazardous waste disposal should be kept. This should include type of waste, volume as well as disposal method/facility.
- Any complaints received regarding waste should be recorded with notes on action taken.

2.1.10 Ecosystem and Biodiversity Impact

The proposed erf is located in a previously undeveloped area which has seen significant human impact through sand collection and disposal of waste on site. Some natural vegetation however does occur on site, especially on the northern portion of the erf. Such vegetation will be destroyed where infrastructure is developed.

Infrastructure may provide opportunities for animals to take refuge or build nests. Vermin may be attracted if waste is not discarded timeously.

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

Actions.

Prevention:

- Design the facility to avoid the northern portion of the erf and consider developing in the previously disturbed areas (sand mining areas) as far as is practically possible.
- Educate all contracted and permanent employees on the value of biodiversity.
- Disciplinary actions to be taken against all employees failing to comply with contractual conditions related to poaching and the environment.
- All fuel and chemical storage to be conducted as per relevant SANS or MSDS instructions to prevent ecological damage.
- Birds should be deterred from nesting on infrastructure.

Mitigation:

- Mitigation measures related to waste handling and the prevention of groundwater, surface water and soil contamination should limit ecosystem and biodiversity impacts.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- All information of extraordinary ecological sightings to be recorded.

2.1.11 Groundwater and Soil Contamination

Existing soil contamination on site, will have to be cleared prior to the Proponent embarking on the project and obtaining the erf. It is therefore considered that the construction phase of the project will be an improvement of the soil conditions through the removal of contaminated and hazardous materials on site. Although no groundwater is utilised in the area, contamination of soil and groundwater during the operational phase may still occur. Such contamination may result from untreated or partially treated effluent (sewage and industrial), biological waste (e.g. wash water from lairages, chemicals or fuels from the abattoir), seep into the soil and ultimately the groundwater. Similarly, holding pen waste may contaminate the soil it not cleaned and removed regularly.

Desired Outcome: To prevent the contamination of groundwater and soil.

Actions

Prevention:

- See the MSDS available from suppliers for disposal of contaminated products and empty containers. All hazardous waste chemicals containers, requiring a triple rinse system for disposal purposes, should have the rinse water collected in a separate system and not disposed of into the effluent treatment stream.
- Proper training of employees and of operators of machinery and vehicles must be conducted on a regular basis (fuel and chemical handling, spill detection, spill control).
- All machinery and vehicles should be properly maintained to be in a good working condition during operations.
- Employ drip trays and spill kits when servicing / repairs of equipment are needed.
- Standard operating procedures should be developed and implemented for the use of hazardous materials.
- All hazardous chemical should be stored in a sufficiently bunded area and a register maintained of all such chemicals and their volumes.
- Fuel storage and handling according to SANS standards including storing fuel in a closed bunded area and the use of drip trays or spill proof surfaces where fuel is handled.
- All biological and liquid wastes should be prevented from entering the environment and wash water at the lairages must be handled as waste that may not be allowed to flow into the environment.

Mitigation:

- Spill clean-up means must be readily available on site as per the relevant MSDS for all chemicals and fuels.
- Any fuel spillage of more than 200 litres must be reported to the Ministry of Mines and Energy.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Keep record of all spills or leakages of hazardous or polluting substances, inclusive of date and duration of spill, product spilled, volume of spill, remedial action taken.

2.1.12 Water Supply

Water usage is minimal between slaughtering events, but larger volumes are required during slaughtering. Water use is however not expected to impact on any nearby users, but water saving remains paramount in a dry country like Namibia. Interruptions in freshwater supply to the abattoir will negatively impact operations of the abattoir. Poor quality water may have health impacts.

Desired Outcome: To utilise water sustainability and ensure an adequate supply of water.

Actions

Prevention:

- The abattoir must have suitable water storage on site to ensure a sufficient volume of water for animal watering and cleaning purposes are available in the eventuality that a water supply interruption occurs.
- The water must be clean, potable and free of suspended material and substances which could put health at risk.

Mitigation:

- Develop and implement a water management programme, which includes water use reduction measures, monitoring of water utilised and consumption volumes and regular inspections and maintenance of the water reticulation system.
- Periodic testing of water from the onsite water reservoir to determine quality and microbial proliferation problems.
- Should the water storage tank be contaminated, sterilisation, flushing and cleaning of the tank should be performed as appropriate.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Meat Industry Act conditions for the registration of abattoirs.
- Record water use statics and water quality monitoring results.

2.1.13 Visual Impact

This impact is not only associated with the aesthetics of the site, but also the structural integrity of infrastructure. The construction of the facility will have a positive visual impact in terms of removal of existing litter discarded on site being removed by the Proponent. The facility will be visually in line with existing facilities in the industrial area. Operations will require cleaning of the entire slaughtering facility after each slaughtering event and regular waste disposal.

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

Actions

Prevention:

- Regular waste disposal and clearing of wastes on the entire premises.
- Regular waste disposal, good housekeeping and routine maintenance on infrastructure will ensure that the longevity of structures is maximised and a low visual impact is maintained.
- The minimum lighting required to ensure adequate security and a safe environment should be used at night and it must be directed downwards as far as is practically possible to not become a nuisance to current and future neighbours.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Keep record of complaints received and actions taken.

2.1.14 Traffic

Operations of the abattoir will increase traffic flow to the site and increase the chance of potential incidents and accidents around the abattoir. The impact is expected to be limited.

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

Actions

Prevention:

- All vehicles owned by the Proponent to operate within the Traffic and Transport Act regulations, specifically also in the terms of roadworthiness.
- Trucks delivering or collecting goods should not be allowed to obstruct any traffic in surrounding areas.

Mitigation:

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

Responsible Body:

- Proponent

Data Sources and Monitoring:

- The Road Traffic and Transport Regulations, 2001
- Record complaints received regarding traffic (directly associated with the abattoir) with action taken to prevent impacts from repeating itself.

2.1.15 Cumulative Impact

Possible cumulative impacts associated with the operational phase and any maintenance / construction activities are mainly linked to employment and revenue generation (positive impact) and pollution, water demand, traffic and greenhouse gas emissions (negative impacts).

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

Actions

Mitigation:

- Addressing each of the individual impacts as discussed and recommended in the EMP would reduce the cumulative impact.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Review all records kept in order to detect any new or re-occurring impacts or problems (cumulative impacts) and reconsider existing prevention and mitigation measures where cumulative impacts are present.

2.2 DECOMMISSIONING AND REHABILITATION

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

3 CONCLUSION

The above EMP, if properly implemented will help to continually 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 proposed site. Parties responsible for transgression of the EMP should be held responsible for any rehabilitation that may need to be undertaken.

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

4 REFERENCES

Bosman Q, Faul A, Strauss J; 2023 April; Construction and Operations of an Abattoir and Feedlot in Lüderitz, //Karas Region: Environmental Assessment Scoping Report.