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Re: <u>CONSTRUCTION AND OPERATIONS OF A FUEL RETAIL FACILITY IN OKANGWATI, KUNENE REGION</u>

Please note that the EMP for <u>CONSTRUCTION AND OPERATIONS OF A FUEL RETAIL</u> <u>FACILITY IN OKANGWATI, KUNENE REGION</u> forms part of the EIA Scoping Report. The pertinent Section has been extracted for your review purposes.

Thank you in advance.

Sincerely,

Geo Pollution Technologies

10.1.2 Skills, Technology and Development

During the construction and operations of the facility, training will be provided to a portion of the workforce to be able to construct and operate various features of a fuel retail facility according to the required standards. Skills will be transferred to an unskilled workforce for general tasks. The technology required for the development of the facility may be new to the regional industry, aiding in operational efficiency. Development of people and technology are key to economic development.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Employment, technological development and transfer of skills	2	1	2	3	1	12	2	Probable
Daily Operations	Employment, technological development and transfer of skills	2	1	2	3	2	14	2	Definite
Indirect Impacts	Transfer of skills and technological development	2	1	2	3	3	16	2	Definite

<u>Desired Outcome:</u> To see an increase in skills of local Namibians, as well as development and technology advancements in the fuel retail industry.

Actions

Mitigation:

- If the skills exist locally, contractors must first be sourced from the town, region, and then nationally. Deviations from this practice must be justified.
- Skills development and improvement programs to be made available as identified during performance assessments.
- Employees to be informed about parameters and requirements for references upon employment.
- ♦ The proponent must employ local Namibians where possible. Deviations from this practise should be justified appropriately.

Responsible Body:

- **♦** Proponent
- **♦** Contractors

- 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.
- Bi-annual summary reports on all training conducted.

10.1.3 Revenue Generation and Employment

Construction of the facility is hinged on employment. Skilled and unskilled labour will be employed for the installation of the tanks and general earth works. Unskilled labour may be sourced locally while it is expected that skilled contractors within Namibia will be used for specialised work. The construction phase will therefore contribute to employment creation in the unskilled labour sector while contributing to sustaining employment of the skilled sector during the construction phase.

The proposed facility is located along a popular tourist route to Epupa Falls and the Okangwati Region. It may therefore be expected that a large percentage of tourists visit the area and region and will be in need of fuel. In addition, growth of the Okangwati population and further development of the town are also expected. The facility will thus ensure a reliable supply of fuel for the growing tourism industry and future development.

The change in land use will lead to changes in the way revenue is generated and paid to the national treasury. An increase of skilled and professional labour will take place due to the operations of the facility.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Employment and contribution to local and national economy	2	1	2	2	2	12	2	Definite
Daily Operations	Employment contribution to local economy	2	1	3	3	1	14	2	Definite
Indirect Impacts	Decrease in unemployment, contribution to local economy	3	1	3	3	3	27	3	Definite

<u>Desired Outcome:</u> Contribution to national treasury and provision of employment to local Namibians. Create a competitive environment to enhance service delivery to the area.

Actions

Mitigation:

- The proponent must employ local Namibians where possible.
- If the skills exist locally, employees must first be sourced from the town, then the region and then nationally.
- Deviations from this practice must be justified.

Responsible Body:

♦ Proponent

Data Sources and Monitoring:

• Bi-annual summary report based on employee records.

10.1.4 Demographic Profile and Community Health

The project is reliant on labour during the construction and operational phase. The scale of the project is limited and it is not foreseen that it will created a change in the demographic profile of the local community. Community health may be exposed to factors such as communicable disease like HIV/AIDS as well as alcoholism/drug abuse, associated with possible foreign construction teams and / or clients collecting fuel. An increase in foreign people in the area may potentially increase the risk of criminal and socially/culturally deviant behaviour. However, such trends are considered unlikely. Spills and leaks may present risks to members of the public. The project may further contribute to cumulative demand for services for the region which includes electricity and water supply.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	In-migration and social ills related to unemployment	2	-1	1	1	2	-8	-1	Probable
Daily Operations	In-migration and social ills related to unemployment	2	-1	1	2	2	-10	-2	Probable
Indirect Impacts	The spread of disease	2	-1	2	2	2	-12	-2	Probable

<u>Desired Outcome:</u> To prevent the in-migration and growth in informal settlements and to prevent the spread of diseases such as HIV/AIDS.

Actions:

Prevention:

- Employ only local people from the area, deviations from this practice should be justified appropriately.
- ♦ Adhere to all local authority by-laws relating to environmental health which includes, but is not limited to, sand and grease traps for the various facilities and sanitation requirements.
- Facility design to incorporate water and energy saving technologies such as low energy electrical appliances and lighting.

Mitigation:

- Educational programmes for employees on HIV/AIDs and general upliftment of employees' social status.
- Appointment of reputable contractors.

Responsible Body:

♦ Proponent

- Facility inspection sheet for all areas which may present environmental health risks, kept on file.
- Bi-annual summary report based on educational programmes and training conducted.
- Bi-annual report and review of employee demographics.

10.1.5 Fuel Supply

The construction and operation of the facility will aid in securing fuel supply to the residents, tourists and business in the area. The Namibian government has expressed its intention to upgrade the road between Opuwo and Okangwati to a bitumen surface. The region will thereby become more accessible to many tourists and residents who travel along this route. Secure and continued fuel supply will therefore contribute to the tourism potential and development of the settlement.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Daily Operations	Contribution to economy, contribution to the fuel supply in the area	2	1	3	2	2	14	2	Definite
Indirect Impacts	Secure supply in fuel allowing travel and trade	3	1	3	2	2	21	3	Definite

<u>Desired Outcome:</u> Ensure a secure fuel supply remains available to the area.

Actions

Mitigation:

- Ensure compliance to the petroleum regulations of Namibia.
- Proper management to ensure constant supply.
- Record supply problems and take corrective actions.

Responsible Body:

♦ Proponent

Data Sources and Monitoring:

• Record supply problems and corrective actions taken and compile a bi-annual summary report.

10.1.6 Traffic

The facility may increase the traffic flow to the site through the provision of construction material (construction phase) and fuel (operational phase). An increase in traffic to the site and from the site may increase the risk of incidents and accidents, especially during delivery of fuel and construction of the facility. Additional traffic may further contribute to road degradation. Discussions with the regional office of the Roads Authority have been initiated in this regard and will continue should the ECC application be approved and the project continue.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Delivery of equipment and building supplies	1	-1	2	2	2	-6	-1	Probable
Daily Operations	Increase traffic, road wear and tear and accidents	1	-1	2	2	2	-6	-1	Probable

<u>Desired Outcome:</u> Minimum impact on traffic and no transport or traffic related incidents.

Actions

Prevention:

- Erect clear signage regarding access and exit points at the facility.
- The Proponent needs to continue engaging with the Roads Authority and acquire the required permissions prior to the facility being erected.
- ♦ All proposed construction and operations activities should adhere to the road reserve requirements of the district road.

Mitigation:

- Tanker trucks delivering fuel should not be allowed to obstruct any traffic.
- ♦ If any traffic impacts are expected, traffic management should be performed to prevent these.
- The placement of signs to warn and direct traffic will mitigate traffic impacts.
- Consultation and approval from the town council regarding designs and access to the facility from the main road are required.

Responsible Body:

Proponent

- ♦ Any complaints received regarding traffic issues should be recorded together with action taken to prevent impacts from repeating itself.
- A bi-annual report should be compiled of all incidents reported, complaints received, and action taken.

10.1.7 Health, Safety and Security

Every activity that will be associated with the construction and operational phase is reliant on human labour and therefore will expose them to health and safety risks. Activities such as the operation of machinery and handling of hazardous chemicals (inhalation and carcinogenic effect of some petroleum products), will pose the main risks to employees. Security risks will be related to unauthorized entry, theft and sabotage.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Physical injuries, exposure to chemicals and criminal activities	1	-2	3	3	1	-14	-2	Probable
Daily Operations	Physical injuries, exposure to chemicals and criminal activities	1	-2	3	3	2	-16	-2	Probable

<u>Desired Outcome:</u> To prevent injury, health impacts and theft.

Actions

Prevention:

- Clearly label dangerous and restricted areas as well as dangerous equipment and products.
- Equipment that will be locked away on site must be placed in a way that does not encourage criminal activities (e.g. theft).
- Provide all employees with required and adequate personal protective equipment (PPE).
- Ensure that all personnel receive adequate training on operation of equipment / handling of hazardous substances.
- All health and safety standards specified in the Labour Act should be complied with.

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 pipes, operational, safe work and medical procedures, permits to work, emergency response plans, 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, especially during cash in transit activities.
- Reduce the amount of cash kept on site to reduce the risk of robberies.
- Strict security that prevents unauthorised entry during construction phases.

Responsible Body:

- ♦ Proponent
- **♦** Contractors

- Any incidents must be recorded with action taken to prevent future occurrences.
- ♦ A bi-annual report should be compiled of all incidents reported. The report should contain dates when training were conducted and when safety equipment and structures were inspected and maintained.

10.1.8 Fire

Construction and operational activities may increase the risk of the occurrence of fires. Fuel, especially unleaded petrol, is highly flammable and therefore presents a fire risk.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Fire and explosion risk	2	-2	2	2	1	-20	-3	Probable
Daily Operations	Fire and explosion risk	2	-2	2	2	1	-20	-3	Probable

<u>Desired Outcome:</u> To prevent property damage, veld fires, possible injury and impacts caused by uncontrolled fires.

Actions:

Prevention:

- Ensure all chemicals are stored according to MSDS and SANS instructions.
- Maintain regular site, mechanical and electrical inspections and maintenance.
- Clean all spills / leaks.
- ♦ Special note must be taken of the regulations stipulated in sections 47 and 48 of the Petroleum Products and Energy Act, 1990 (Act No. 13 of 1990).
- Follow SANS standards for operation and maintenance of the facility.
- All dispensers must be equipped with devices that cut fuel supply during fires.

Mitigation:

- A holistic fire protection and prevention plan is needed. This plan must include an emergency response plan, firefighting plan and spill recovery plan.
- Maintain firefighting equipment and promote good housekeeping.
- Personnel training (firefighting, fire prevention and responsible housekeeping practices).

Responsible Body:

- **♦** Proponent
- Contractors

- ♦ A register of all incidents must be maintained on a daily basis. This should include measures taken to ensure that such incidents do not repeat themselves.
- ♦ A bi-annual report should be compiled of all incidents reported. The report should contain dates when fire drills were conducted and when fire equipment was tested and training given.

10.1.9 Air Quality

During construction, earth works and general construction may increase ambient dust levels. The operational phase will release fuel vapours into the air during refuelling of bulk storage tanks as well as at filling points. Prolonged exposure may have carcinogenic effects.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Excessive dust generated from maintenance and upgrade activities	1	-1	2	2	2	-6	-1	Probable
Daily Operations	Fuel vapours	1	-1	2	2	1	-5	-1	Probable

<u>Desired Outcome:</u> To prevent health impacts and minimise the dust generated.

Actions

Mitigation:

- Personnel issued with appropriate masks where excessive dust or vapours are present.
- ♦ A complaints register should be kept for any dust related issues and mitigation steps taken to address complaints where necessary e.g. dust suppression.
- Employees should be coached on the dangers of fuel vapours.
- Vent pipes must be properly placed as per SANS requirements.

Responsible Body:

- **♦** Proponent
- **♦** Contractors

- Any complaints received regarding dust or fuel vapours should be recorded with notes on action taken.
- All information and reporting to be included in a bi-annual report.

10.1.10 Noise

Noise pollution may be generated due to heavy and light motor vehicles accessing the site to offload construction material, fuel or refuel. Construction operations are noisy by nature. A fuel retail facility is a 24 hour operation which means that vehicle noise is generated throughout the day and night.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Excessive noise generated from construction activities – nuisance and hearing loss	1	-2	2	2	1	-10	-2	Probable
Daily Operations	Noise generated from the operational activities – nuisance	1	-1	2	2	1	-5	-1	Probable

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

Actions

Prevention:

- Follow World Health Organization (WHO) guidelines on maximum noise levels (Guidelines for Community Noise, 1999) to prevent hearing impairment.
- All machinery must be regularly serviced to ensure minimal noise production.
- Keep volume of public address systems on a level where neighbours are not impacted on.
- ♦ Manage noise caused by clients loud music etc.

Mitigation:

• Hearing protectors as standard PPE for workers in situations with elevated noise levels.

Responsible Body:

- **♦** Proponent
- Contractors

- ♦ WHO Guidelines.
- Maintain a complaints register.
- Bi-annual report on complaints and actions taken to address complaints and prevent future occurrences.

10.1.11 Waste production

Various waste streams will be produced during the construction and operational phase. Waste may include hazardous waste associated with the handling of hydrocarbon products etc. Construction waste may include building rubble and discarded equipment contaminated by hydrocarbon products. Contaminated soil and water is considered as a hazardous waste. Domestic waste will be generated by the facility and related operations. Waste presents a contamination risk and when not removed regularly may become a fire hazard.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Excessive waste production, littering, illegal dumping, contaminated materials	1	-2	2	2	2	-12	-2	Definite
Daily Operations	Excessive waste production, littering, contaminated materials	1	-2	2	2	2	-12	-2	Definite

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

Actions

Prevention:

- Waste reduction measures should be implemented and all waste that can be re-used / recycled must be kept separate.
- Ensure adequate waste storage facilities are available.
- Ensure waste cannot be blown away by wind.
- Prevent scavenging (human and non-human) of waste storage.

Mitigation:

- Waste should be disposed of regularly and at appropriately classified disposal facilities, this includes hazardous material (empty chemical containers, contaminated rugs, paper water and soil).
- ♦ The spill catchment traps and oil water separator should be cleaned regularly and waste disposed of appropriately. Surfactants (soap) may not be allowed to enter the oil water separator
- See the material safety data sheets available from suppliers for disposal of contaminated products and empty containers.
- Liaise with the municipality regarding waste and handling of hazardous waste.

Responsible Body:

- Proponent
- ♦ Contractors

- 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.
- ♦ The oil water separator must be regularly inspected and all hydrocarbons removed once detected. Outflow water must comply with effluent quality standards as per town council requirements.
- All information and reporting to be included in a bi-annual report.

10.1.12 Ecosystem and Biodiversity Impact

The site is mostly void of naturally occurring vegetation due to previous and current human activities on and around the site. Some vegetation may however require removal. Construction and operations may present a pollution risk to the surrounding environment and biophysical features.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Impact on fauna and flora. Loss of biodiversity	1	-1	3	2	2	-7	-1	Definite
Daily Operations	Impact on fauna and flora. Loss of biodiversity	1	-1	2	2	2	-6	-1	Improbable

<u>Desired Outcome:</u> To avoid pollution of, and impacts on, the ecological environment.

Actions.

Prevention:

• Educate all contracted and permanent employees on the value of biodiversity.

Mitigation:

- Report any extraordinary animal sightings to the Ministry of Environment, Forestry and Tourism.
- Mitigation measures related to waste handling and the prevention of groundwater, surface water and soil contamination should limit ecosystem and biodiversity impacts.
- Avoid scavenging of waste by fauna.
- The establishment of habitats and nesting sites at the facility should be avoided where possible.

Responsible Body:

- **♦** Contractor
- **♦** Proponent

Data Sources and Monitoring:

• All information and reporting to be included in a bi-annual report.

10.1.13 Groundwater, Surface Water and Soil Contamination

During construction, heavy machinery may present a contamination risk to the soil, surface and groundwater through breakdowns. Operations will entail the storage and handling of various hydrocarbons (such as fuels and lubricants) which present a contamination risk. Such material may contaminate surface water, soil and groundwater. Contamination may either result from failing storage facilities, or spills and leaks associated with fuel handling. The facility will provide fuel to public vehicles which may further present contamination risks through overfills, spills and leakages. Modern retail facilities are well designed to reduce leakages and spillages from contaminating soil and water.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Contamination from hazardous material spillages and hydrocarbon leakages	2	-1	2	2	1	-10	-2	Probable
Daily Operations	Contamination from hazardous material spillages and hydrocarbon leakages	2	-2	2	2	1	-20	-3	Probable

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

Actions

Prevention:

- All construction machines should be maintained to be in a good working condition during operations
- Employ drip trays and spill kits during construction when onsite servicing / repairs of equipment is needed.
- Spill control structures and procedures must be in place according to SANS standards or better and connection of all surfaces where fuel is handled, with an oil water separator.
- ♦ All fuelling should be conducted on surfaces provided for this purpose. E.g. Concrete slabs with regularly maintained seals between slabs.
- ♦ The procedures followed to prevent environmental damage during service and maintenance, and compliance with these procedures, must be audited and corrections made where necessary.
- Proper training of operators must be conducted on a regular basis (Fuel handling, spill detection, spill control).

Mitigation:

- Any spillage of more than 200 litre must be reported to the relevant authority (Ministry of Mines and Energy).
- Spill clean-up means must be readily available on site as per the relevant MSDS.
- Any spill must be cleaned up immediately.
- ♦ The spill catchment traps and oil water separator should be cleaned regularly and waste disposed of at a suitably classified hazardous waste disposal facility.
- Surfactants (soap) may not be allowed to enter the oil water separator e.g. no soap usage on spill control surfaces and the car wash's waste water may not enter the separator.

Responsible Body:

- **♦** Proponent
- ♦ Contractors

- Inspection holes at the ends of the tanks must as a minimum be inspected every 14 days and measurements must be recorded for future reference. Inspection must include the evaluation of LNAPL on the water surface, if liquid is present.
- ♦ A report should be compiled bi-annually of all spills or leakages reported. 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) with post remediation data (e.g. soil/groundwater hydrocarbon concentrations) and a copy of documentation in which spill was reported to Ministry of Mines and Energy.

10.1.14 Visual Impact

This is an impact that not only affects the aesthetic appearance, but also the integrity of the facility. Bright lights used at night may impact on nearby residents.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability	
Construction	Aesthetic appearance and integrity of the site	1	-1	2	2	2	-6	-1	Probable	
Daily Operations	Aesthetic appearance and integrity of the site	1	-1	2	2	2	-6	-1	Probable	

<u>Desired Outcome:</u> To minimise aesthetic impacts associated with the facility and prevent lighting from being a visual disturbance.

Actions

Mitigation:

- Regular waste disposal, good housekeeping and routine maintenance on infrastructure will ensure that the longevity of structures are maximised and a low visual impact is maintained.
- Lights should be directed downwards and away from residents where possible.

Responsible Body:

- **♦** Proponent
- ♦ Contractors

Data Sources and Monitoring:

♦ A bi-annual report should be compiled of all complaints received and actions taken.

10.1.15 Impacts on Utilities and Infrastructure

Impacts related to utilities and infrastructure are more prevalent during the construction phase when excavations are conducted on site. During the operational phase such damage mainly relate to the road surface and access, or an underground spill or explosion which is very unlikely. In addition, there are limited utilities in the vicinity of the erf..

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction Phase	Disruption of services and damage to infrastructure	2	-1	2	2	1	-10	-2	Probable
Daily Operations	Disruption of services and damage to infrastructure	2	-1	2	2	1	-10	-2	Improbable

<u>Desired Outcome:</u> No damage or destruction of utilities and infrastructure.

Actions

Prevention:

- Appointing qualified and reputable contractors is essential.
- The contractor must determine exactly where amenities and pipelines are situated before construction commences (utility clearance e.g. ground penetrating radar surveys).
- Liaison with the suppliers of services is essential.
- Ongoing consultation with the Roads Authority and regional authorities during project construction and operation.

Mitigation:

• Emergency procedures for corrective action available on file.

Responsible Body:

- **♦** Proponent
- **♦** Contractors

Data Sources and Monitoring:

• A bi-annual report should be compiled of all incidents that occurred and corrective action taken.

10.1.16 Cumulative Impact

Possible cumulative impacts associated with the construction and operational phase include beneficial and detrimental impacts. It is assessed that the project will have a positive contribution the local economy through job creation and local sales. Contributions to a reliable and accessible fuel supply to residents and tourists in an area far removed from such services are of paramount importance. Noise and additional traffic have a cumulative aspect for this project. There will be an definite increase in both as well as the possible risk to soil and groundwater contamination. However, on a cumulative scale the project is perceived to have a positive net benefit for the community.

Desired Outcome: To enhance the cumulative beneficial 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.
- ♦ 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

Responsible Body:

♦ Proponent

Data Sources and Monitoring:

• Bi-annual reports will provide an overall assessment of the impact of the operational phase.