

ENVIRONMENTAL MANAGEMENT PLAN (EMP)

6.1 Introduction

This section is aimed to outline Environmental Management Plan (EMP) for the proposed Fuel retail station and convenient quick shop establishment project on **ERF 1278 Rundu Light Industrial Area**. The EMP specifies the supervision of environmental programs in a logical, scheduled and standardised way. This EMP includes the organizational structure, planning and monitoring for environmental protection at the proposed fuel retail station set up in Rundu urban of Kavango East Region. This EMP guarantees that the facility sustains appropriate mechanism over the project life span to:

- Prevent negative impacts where possible;
- Prevent long term environmental degradation.
- Reduce or minimise the extent of impact during project life cycle;

6.2 EMP Administration and Training

The roles and responsibilities of all stakeholders involved in the project development are to ensure that this EMP is fully implemented. The proponent should appoint an overseer (Environmental Control Officer) to guarantee the successful implementation of this EMP. The Environmental Control Officer needs to have qualifications and knowledge in environmental management, and understanding of EMP administration. Under the management administration, each action is allocated to a responsible person to safeguard environmental quality management. All stakeholders including contractors involved during the construction of the services must be well-versed and familiarised about the contents of this EMP. This can be done through structured training programs, regular site meetings and conferences.

6.3 Construction Phase Impacts

The proposed fuel retail station and convenience shop construction phase marks the fundamental part of the project growth progression. The development entails activities that will pose threats to the surrounding environs and impacts ranging from de bushing, construction waste, and noise and air pollution among other impacts. As assessed in the impact assessment chapter the Interested and Affected Parties noted crucial environmental impacts associated with the construction phase and as follow up to the impacts identified and evaluated, this EMP is intended to reconcile every impact with Environment.

Table 12: Impacts associated with the Construction Phase

Impact	Description	Effects	Class	Time frame	Responsibility	Action
Noise pollution	Noise will be generated through: - landscaping -Construction of site administration offices -Moving vehicles.	-The health of working personnel is most likely disturbed. -Residents could be disturbed by the noise. - General annoyance	Environmental	2-4 months	Environmental Control Officer	- A construction interval will be established, and adhered to. - Workers will be issued and provided with personal protective equipment. - Public notices - All construction activities will be done during the day
Dust Generation	Dust will accumulate because of the land preparation and ground excavation by movement of heavy construction equipment	- Can lead to respiratory illnesses especially to those working in the area. -increase Particulate matter levels in the air and cause visual pollution	Environmental/ occupational	2-3 months	Environmental Control Officer Contractor	- Dust suppression will be done through watering dust source surfaces.
Rubbles Accumulation	Rubbles will accumulate due to construction activities	- Can be an eyesore. - Can be source of water and soil pollution. -disrupts scenery view	Environmental	2-3 months	Environmental Control Officer	- Reuse reusable material such as bricks. - dispose all non-reusable debris following waste management procedures.
Occupational health and safety risks and accidents	Construction related Safety and Health hazards	-Injuries to workers such as Occupational Dermatitis, blunders and objects falling from heights, musculoskeletal disorders, among others.	Health & safety	Project life time	Environmental Control Officer	- Equip workers with Personal Protective Equipment (PPE). - provide trainings on how to effectively use the PPE. -Conducting safety awareness programs

Impact	Description	Effects	Class	Time frame	Responsibility	Action
Employment creation	The construction phase offers an opportunity of subcontracting work	- Increased income to those employed and their immediate families.	Socio-economic	Project life time	Human Resources Officer	Employment should be given priority to residents and local contractors
Population Influx	The project will bring in skilled and unskilled workforce into town from other places increasing population density in the area.	-There is potential for cultural systems conflict between locals and new people in the area -Overpopulation around local surroundings, i.e. exceeding local area carrying capacity -Potential for rife prostitution and spread of HIV/AIDS and other STDs	Socio-economic	Project life time	Human Resources Officer	-Train and brief employees to respect local cultures and leaders, -Conduct an immense sexual health training and awareness, providing contraceptives, condoms, counselling for those that are affected by HIV/AIDS and other STDs, - Regular trainings and awareness on nature conservation (animal and plants), and discourage hunting of wildlife and unnecessary cutting down of trees.

6.4 Operational Phase

The operational phase is the most critical component of project implementation and it is normally associated with several severe impacts. The phase comprises of the actual operation of the facility and fuelling behaviours. This phase is expected to last for over 50 years of operation if the project is still viable. There will be several impacts that will occur daily or other sequential routine. The phase forms the basis of an Environmental Management Plan that is detailed in this Chapter and will be followed by the decommissioning phase. The major impacts identified by this study for the operation phase are as detailed in the previous chapter.

Table 13: Impacts associated with the Operation Phase

Impact	Description	Effects	Class	Time Frame	Responsibility	Action
Noise pollution	-Vehicle movements -Periodic road upgrading	- The health of working personnel could be disturbed. - Residents could be disturbed by the noise. - General annoyance.	Environmental	Project life time	Environmental Control Officer Project Proponent Site Manager	-Use of well serviced machinery - Provide public notices through printed timetable showing schedule of planned work
Solid waste pollution	Solid waste emanating from food wastes, packaging materials, containers, household waste, glass, wood, etc	- Can result health issues and some waste can be highly hazardous and toxic to the environment.	Environmental	Project Life time	Environmental Control Officer Project Proponent Site Manager	-An initial waste audit -When it is appropriate, materials will be reused, recycled and reduce the amount of waste generated. -Biodegradable waste will be composted and used on lawns and flowers on and around the site as part of environmental responsibility of the company.
Traffic movement	Visitors to the site will have interests in moving around the area and maybe nearby communities	- This can also result in vehicle vibrations which maybe a nuisance to some people in the surrounding area.	-Ecological -Social	Project life time	Operations manager Site Manager	-Come up with a social contact policy guiding the movement of visitors around the area
Water quality	Storm water from the fuel dispensation hub canopy and vehicle parking paved bay.	-Ground and surface water contamination: Both chemical and physical contamination	Environmental	Project life time	Environmental Control Officer DEA / Namwater	-Frequently monitor effluent waste quality -Use of ambient monitoring boreholes

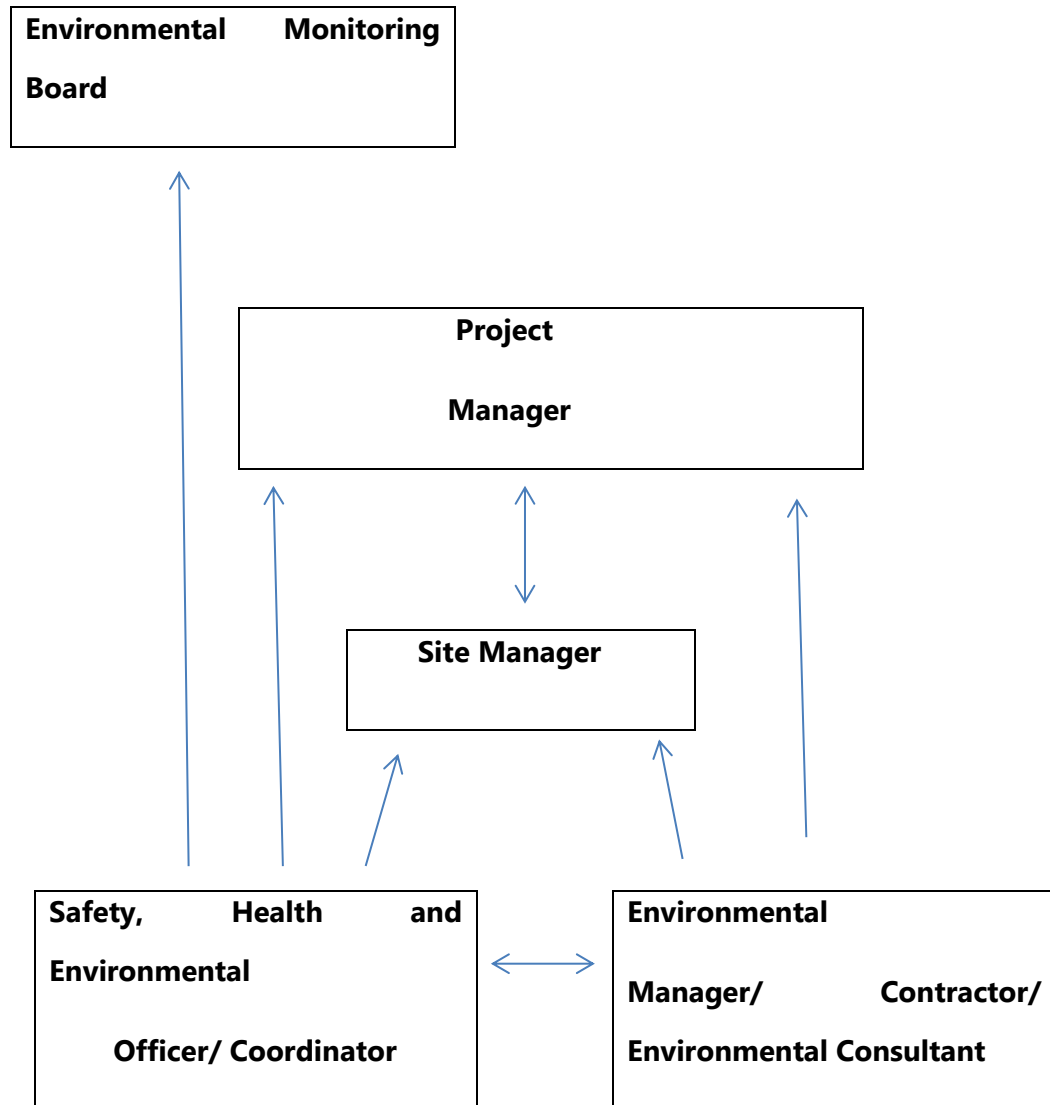
Impact	Description	Effects	Class	Time Frame	Responsibility	Action
Occupational Hazards / Work place accidents	Exposed to hazardous substances without adequate PPE; Operating of equipment such as cell phones, stoves, boilers etc can cause workplace injuries or fire since the work place should be flame free	-Potential accidents and illnesses.	Health, social	-Project life time	Safety officer Site Manager	-Health and safety regulations should be enforced on all the workers. -Safety regulations include life and health insurance, first aid kits; protective clothing such as uniforms and gloves. -Proper storage of highly flammable products such as gas etc, and installation of fire extinguishers sand buckets. Workers should not be allowed to exceed working hours.
Hydrocarbons pollution (Spillages and leaks)	Fuel dispensation process may result in oil spillages, underground fuel storage tanks my leak and stationery vehicles parking may have fuel and oil leakages	Potential for soil pollution, groundwater contamination	Environmental	Project lifetime	Environmental Control officer Project Proponent	-Visual monitoring during rainfall events for runoff of polluted water -hydrocarbons and chemically laden water must not be disposed of into surface water sources or into the bush -Chemicals, oil and fuel must be stored securely to prevent any accidental spills. - The underground fuel storage tanks should be replaced on regular as recommended by suppliers as well as depending on environmental conditions and natural disasters.

Impact	Description	Effects	Class	Time Frame	Responsibility	Action
Employment creation	Employment creation for the residents	<ul style="list-style-type: none"> - Increases disposable income. - urban migration. 	Socio-economic	Project Life Time	Project Proponent Operations/site Manager	<ul style="list-style-type: none"> - Provide information to the local community detailing labour requirements (number of workers and type of skills) - Provide information on social benefits for the employees and the local community. -Conduct transparent recruitment process of workers and of contractors, providing preferences to the locals where feasible.
Immoral Behaviour Illicit dealings	Increased inflow of people into the area may result in immoral behaviour and increased sexual activities.	<ul style="list-style-type: none"> -Increased infection of HIV/AIDS and other sexual diseases. -Increased unwanted and teenage pregnancies -Increase in thieving incidences, assaults and robberies. -Increased incidences of drugs and alcohol abuse. 	Socio-economic	Project Life Time	Project Proponent Rundu Town council NAMPOL	<ul style="list-style-type: none"> - Conduct awareness campaigns on promiscuity and HIV/AIDS issues. -Conduct awareness programmes on the effect of alcohol and drug abuse. - Support a nearby police post. -Use of cameras on site

6.5 Decommissioning Phase

If the project proponent intends to decommission the project well before the completion of its expected lifespan, all the necessary steps will be taken to ensure that the application of the best environmental management practices and adherence to legal and policy legislations is upheld. These progressions shall follow an appropriate decommissioning plan prepared by an appointed Environmental Consultant that will work in the best environmentally friendly manner taking into considerations the principle of sustainable development. The anticipated impacts of a standard and provisional decommissioning plan will only be highlighted in the Environmental decommissioning plan, taking into consideration biophysical, economic, social and political issues related to project decommissioning, thus a decommissioning environmental audit and management plan will have to be undertaken before the project is completely decommissioned to ensure sustainability and rehabilitation.

EMP REPORTING CHART



Responsibilities of the Site Manager

- ✓ Familiarize with the Environmental Management Plan
- ✓ Be familiar with all applicable environmental legislation and Safety, Health and Environmental policies
- ✓ Ensure that audits are conducted to ensure compliance to the EMP
- ✓ Liaise with the Project Manager, the Safety, Health and Environmental Officer and the Contactor on matters concerning the environment.

- ✓ Avoid actions that are likely to have detrimental results to the environment
- ✓ Prevent land, air, surface and ground water pollution on the site.
- ✓ Have overall responsibility for the implementation of the EMP on site

Responsibilities of the Project Manager

- ✓ Ensure that the project proponent and the Contractor are aware of all specifications, legal requirements procedures pertaining to the project specifically with regards to the environment
- ✓ Familiarize him or herself with the Environmental Assessment perspective
- ✓ Ensure that all requirements within this EMP are communicated and adhered to by the proponent and his/her Contractor(s)
- ✓ Monitor the implementation of the EMP throughout the project by means of site

The responsibilities Safety, Health and Environmental Officer/ coordinator

- ✓ Familiarization with Environmental Impact Assessment Report
- ✓ Be familiar with all applicable environmental legislation
- ✓ Be fully familiar with the Environmental Management Plan.
- ✓ Implement Occupational Safety, Health and the Environment standards
- ✓ Ensure that intermittent environmental routine audits are undertaken on the project execution
- ✓ Maintain a daily site register, a public complaint register, a register of audits
- ✓ Be fully acquainted with the conditions of the Record of Decision
- ✓ Available on daily basis during the construction phase
- ✓ Reporting to project manager
- ✓ Undertake regular and comprehensive inspections on site and surrounding areas in order to monitor compliance with the EMP
- ✓ Take applicable action following noncompliance with the EMP
- ✓ Convey the contents of this document to the site staff and discuss the contents in detail with the Project Manager and Contractor
- ✓ Monitor and authenticate that environmental impacts are moderated
- ✓ Compile progress reports on a regular basis, with input from the Site Manager, for

- ✓ Submission a final post-construction audit carried out by an independent auditor/consultant to the Project Manager

- ✓ Submit an environmental compliance report on a quarterly basis, in writing, to the Ministry of Environment and Tourism (MET)

The responsibilities of Environmental Manager/ Contractor/ Consultant

- ✓ Ensure daily inspections to determine compliance, using checklists
- ✓ Simplify reporting system, recording, investigation and follow-up of environmental related Incidents as per Risk Management process
- ✓ Proactively interpret and objectively analyze environmental data and initiate programs to mitigate against the environmental and related risks
- ✓ Undertake principal responsibilities on performing environmental audits and employee guidance on issues related to safeguarding this EMP
- ✓ Compile and submit monthly reports to project proponent/External Auditor/ Project Management
- ✓ Facilitate and integrate relevant environmental training programs for employees
- ✓ Ensure compliance with this EMP
- ✓ Review construction methods, techniques and procedures, identify environmental risk, draw conclusions and recommend possible solutions
- ✓ Cultivate, implement and manage the necessary Environmental Management Systems

7.4. Occupational Health and Safety Monitoring Program

The occupational health and safety monitoring program should include:

- ❖ Surveillance of the working environment:

Project proponent should document compliance using a suitable combination of portable and stationary sampling and monitoring instruments. Monitoring and analyses should be conducted according to internationally recognized methods and standards. Monitoring methodology, locations, frequencies, and parameters should be established individually for each task following a review of the hazards. An example of a popularly used methods is the use of CCTV cameras.

7.5. Conclusion

Arising from the analysis by the consultants, the proposed project is unlikely to generate any irreversible or permanent negative impacts. The report has provided adequate mitigation measures for the identified temporary impacts. It is therefore recommended that the proposed project be approved provided that the proposed recommendations given are strictly adhered to.

7.6. Recommendations

In order to sack negative impacts that may emanate from the construction and operation phases of the land development and its affiliations, relevant and cost effective management and mitigation measures should be put into practical. The project proponent should therefore be able to lead on issues related to the social wellbeing as well as women empowerment initiatives.