

**ENVIRONMENTAL IMPACT ASSESSMENT FOR THE
DEVELOPMENT OF A FUEL RETAIL FACILITY -
SANGWALI, ZAMBEZI REGION**

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EXECUTIVE SUMMARY

Mr Mushitu Mukwame has commissioned an EIA for a proposed fuel retail facility at Sangwali (S-18.238190; E23.660616). The EIA was undertaken following the requirements of the National Environmental Assessment Policy of 1995 and the Environmental Management Act (No. 7 of 2007), and its regulations of 2012.

The general operations of the intended fuel retail facility will include:

- Filling of the storage tanks from road transport tankers;
- Dispensing of fuel to customers;
- Tank dips and fuel volume reconciliations;
- General operational activities and maintenance procedures associated with a fuel retail facility.
- A retail shop

This study was conducted to determine all environmental, safety, health and socio-economic impacts associated with the facility's operations. Relevant environmental data has been compiled by using primary data collected during the site visit and secondary data. Potential environmental impacts and associated social impacts were identified and addressed in this report. As a result of the nature and location of the intended project, limited impacts can be expected on the surrounding environment. However, it is recommended that environmental performance be monitored regularly to ensure compliance and that corrective measures be taken if necessary. The operations of the fuel retail facility will play a positive role in contributing to a reliable supply of fuel at Sangwali.

The significant concerns related to the facility's operation are that of groundwater, surface water and soil contamination and the possibility of fire. Impacts identified from baseline studies, three (3) site visits and stakeholder consultations were assessed, using a comprehensive assessment methodology provided by the Department of Environmental Affairs (DEA) of Namibia. The identified negative and positive impacts from the operations of the facility are:

Negative impacts:

- Waste production – waste is expected from the facility;
- Ecological impact – an impact on the ecology is expected as the site is on virgin land;
- Risk of fire – hydrocarbons are highly flammable and can cause significant damage;
- Groundwater, surface water and soil contamination – spilt or leaked hydrocarbons can reach shallow groundwater and have a high pollution potential;

- Health, safety & security – exposure to hydrocarbons is a health concern;
- Noise – noise pollution is expected;
- Visual impact – this is as a result of dust;
- Traffic – the area is expected to have a relatively high traffic.

Positive impacts:

- Fuel supply – positive contribution to the Sangwali settlement due to a more reliable and convenient fuel supply;
- Employment – fuel retail facilities are open for 24-hours. Thus, they employ a relatively large number of people to man all shifts;
- Skills, technology & development – employees at the facility will be trained;
- In-migration – hiring and training locals will reduce the influx of people and associated problems.

The identified impacts were assessed in each of the three stages of project development: construction, operation, and decommissioning phase.

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	2
PROJECT DETAILS.....	4
TABLE OF CONTENTS.....	5
LIST OF FIGURES	7
LIST OF TABLES.....	7
LIST OF ABBREVIATIONS.....	8
GLOSSARY OF TERMS	9
1 BACKGROUND AND INTRODUCTION	12
1.1 Justification of the project.....	13
1.2 Project phases.....	13
(i) Construction phase.....	13
(ii) Operational phase.....	13
(iii) Decommissioning phase.....	14
2 SCOPE	14
3 METHODOLOGY	14
4 ENVIRONMENTAL STUDY REQUIREMENTS	15
5 ENVIRONMENTAL CHARACTERISTICS	15
5.1 Location and Land Use	16
5.2 Climatic conditions.....	16
5.3 Topography and Drainage.....	16
5.4 Geology and Hydrogeology	17
5.5 Water Supply	17
5.6 Fauna and Flora.....	17
5.7 Demographic Characteristics	18
5.7.1 Regional information.....	18
5.7.2 Unemployment	19
5.7.3 Livelihoods	19
5.7.4 Procurement.....	19
6 OPERATIONAL ACTIVITIES.....	19
6.1 Infrastructure.....	19
6.2 Operational activities.....	20
7 ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS.....	20
7.1 The Namibian Constitution.....	21

7.2 Hazardous Substances Ordinance (No. 14 of 1974)	21
7.3 Atmospheric Pollution Prevention Ordinance (No. 11 of 1976).....	21
7.4 Petroleum Products and Energy Act (No. 13 of 1990, Government Notice No. 45 of 1990)	21
7.5 Local Authorities Act (No. 23 of 1992, Government Notice No. 116 of 1992).....	21
7.6 Environmental Assessment Policy of Namibia (1995).....	21
7.7 Environmental Management Act (No. 7 of 2007, Government Notice No. 232 of 2007)	23
7.8 Labour Act (No. 11 of 2007, Government Notice No. 236 of 2007)	24
7.9 Environmental Management Act Regulations (Notice No. 28-30 of 2012)	24
7.10 Water Resources Management Act (2004)	24
7.11 Water Resources Management of Namibia (No. 11 of 2013).....	24
7.12 Public and Environmental Health Act (No. 1 of 2015, Government Notice No. 86 of 2015)	24
7.13 Pollution Control and Waste Management Bill (Draft)	24
8 PUBLIC CONSULTATION.....	25
9 MAJOR IDENTIFIED IMPACTS & EVALUATION.....	27
(i) Construction Phase	28
• Dust pollution	28
• Noise impact.....	29
• Safety and security	29
• Traffic	30
• Ground water	30
• Surface water	31
• Generation of waste	31
• Ecological Impacts.....	31
(ii) Operational Phase	32
• Spillages	32
• Air quality.....	32
• Fire and explosion risk.....	33
• Generation of waste	33
• Surface water	34
• Ground water	34
• Health and safety.....	35
• Traffic	35
• Ecological impact.....	35
(iii) Decommissioning Phase	36

(iv) Cumulative Impacts	36
10 ALTERNATIVES TO THE DEVELOPMENT.....	37
10.1 No-go Alternative	37
10.2 Site Alternative.....	37
11 ENVIRONMENTAL MANAGEMENT PLAN	37
12 CONCLUSION	38
13 REFERENCES.....	40

LIST OF FIGURES

Figure 1. Location of intended project (source: Google Earth)	12
Figure 2. Geohydrology map of North east Namibia.....	Error! Bookmark not defined.
Figure 3. Layout of the proposed development	20
Figure 4. Environmental Assessment procedure.....	22

LIST OF TABLES

Table 1. Climatic conditions of the Zambezi Region	16
Table 2. General Flora Data (Atlas of Namibia)	17
Table 3. General Fauna Data (Atlas of Namibia)	18

LIST OF ABBREVIATIONS

DEA	Department of Environmental Affairs
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
EMS	Environmental Management System
ESA	Environmental Scoping Assessment
I&AP	Interested & Affected Party
IEM	Integrated Environmental Management
IUCN	International Union for Conservation of Nature
LRP	Lead Replacement Petrol
MET	Ministry of Environment & Tourism
ULP	Unleaded Petrol
SANS	South African National Standards

GLOSSARY OF TERMS

Alternatives – a possible course of action, in place of another, that would meet the same purpose and need but avoid or minimise negative impacts or enhance project benefits. These can include alternative locations/sites, routes, layouts, processes, designs, schedules and/or inputs. The “no-go” alternative constitutes the ‘without project’ option and provides a benchmark against which to evaluate changes; development should result in a net benefit to society and should avoid undesirable negative impacts.

Assessment – the process of collecting, organising, analysing, interpreting and communicating information relevant to decision-making.

Competent Authority – a body or person empowered under the Local Authorities Act or Environmental Management Act to enforce the rule of law.

Cumulative Impacts –concerning an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

Environment – as defined in the Environmental Assessment Policy and Environmental Management Act, it refers to “land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, paleontological or social values”.

Environmental Impact Assessment (EIA) – process of assessment of the effects of a development on the environment.

Environmental Management Plan (EMP) – a working document on environmental and socio-economic mitigation measures, which must be implemented by several responsible parties during all the phases of the proposed project.

Environmental Management System (EMS) – an Environmental Management System, or EMS, is a comprehensive approach to managing environmental issues, integrating environment-oriented thinking into every aspect of business management. As EMS ensures environmental considerations are a priority, along with other concerns such as costs, product quality, investments, PR productivity and strategic planning. An EMS generally makes a positive impact on a company’s bottom line. It increases efficiency and focuses on customer needs and marketplace conditions,

improving both the company's financial and environmental performance. By using an EMS to convert environmental problems into commercial opportunities, companies usually become more competitive.

Evaluation – the process of ascertaining the relative importance or significance of information, the light of people's values, preference and judgements in order to make a decision.

Hazard – anything that has the potential to cause damage to life, property and/or the environment. The hazard of a particular material or installation is constant; that is, it would present the same hazard wherever it was present.

Interested & Affected Party (I&AP) – any person, group of persons or organisation interested in, or affected by an activity; and any organ of state that may have jurisdiction over any aspect of the activity.

Mitigate – the implementation of practical measures to reduce adverse impacts.

Proponent (Applicant) – any person who has submitted or intends to submit an application for an authorisation, as legislated by the Environmental Management Act (No. 7 of 2007), to undertake an activity or activities identified as a listed activity or listed activities; or in any other notice published by the Minister or Ministry of Environment & Tourism.

Public – citizens who have diverse cultural, educational, political and socio-economic characteristics. The public is not a homogeneous and unified group of people with a set of agreed common interests and aims. There is no single public. There are a number of publics, some of whom may emerge at any time during the process depending on their particular concerns and the issues involved.

Scoping Process – process of identifying: issues that will be relevant for consideration of the application; the potential environmental impacts of the proposed activity; and alternatives to the proposed activity that are feasible and reasonable.

Significant Effect/Impact – an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment.

Stakeholder Engagement – the process of engagement between stakeholders (the proponent, authorities and I&APs) during the planning, assessment, implementation and/or management of proposals or activities. The level of stakeholder engagement varies depending on the nature of the proposal or activity as well as the level of commitment by stakeholders to the process. Stakeholder engagement can therefore be described by a spectrum or continuum of increasing levels of

engagement in the decision-making process. The term is considered to be more appropriate than the term “public participation”.

Stakeholders – a sub-group of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term therefore includes the proponent, authorities (both the lead authority and other authorities) and all interested and affected parties (I&APs). The principle that environmental consultants and stakeholder engagement practitioners should be independent and unbiased excludes these groups from being considered stakeholders.

Sustainable Development – “Development that meets the needs of the current generation without comprising the ability of future generations to meet their own needs and aspirations” – the definition of the World Commission on Environment and Development (1987). “Improving the quality of human life while living within the carrying capacity of supporting ecosystems” – the definition given in a publication called “Caring for the Earth: A Strategy for Sustainable Living” by the International Union for Conservation of Nature (IUCN), the United Nations Environment Programme and the World Wide Fund for Nature (1991).

1. BACKGROUND AND INTRODUCTION

Mr. Mushitu Mukwame of Sangwali Village appointed CNM Environmental Consulting Services cc to carry out an Environmental Impact Assessment (EIA) for the development of a fuel retail facility in the Sangwali area. The intended project's location is S-18.238190; E23.660616 along the C49 road –see Figure 1 below.



FFigure 1. Location of the proposed development site at Sanwali (source: Google Earth)

The operations of the fuel retail facility will include:

- Filling of the storage tanks from road transport tankers;
- Dispatching of fuel to customers;
- Tank dips and fuel volume reconciliation;
- General operational activities and maintenance procedures associated with a fuel retail facility.

An environmental impact assessment was carried out to determine the potential impacts that will be triggered by the intended project in all its three phases of development – (i) construction phase; (ii) operational phase; and the (iii) decommissioning phase. This was carried out to apply for an Environmental Clearance Certificate (ECC) from the Ministry of Environment Forestry & Tourism's Directorate of Environmental Affairs (DEA) in compliance with Namibia's Environmental Management Act (No. 7 of 2007).

1.1 Justification of the project

There is a need for a fuel retail facility at Sangwali settlement as this would be the first in the area. The nearest fuel retail service station is either 100 kilometres to the east (Katima Mulilo) or 70 kilometres to the west (Kongola). The proposed retail facility will provide modern services to the residents of Sangwali, the nearby villages and settlements as well as to long-distance travellers and tourists.

Potential benefits of the project include:

- Employment – with both temporary and/or permanent employment, the livelihoods of the employees and their families will be improved;
- Skills development – as the construction and operation of the development requires specialised work and skills, it can be expected that experts will be training local people in certain skills during the development and operational phases;
- General enhancement of the quality of life in the Sangwali settlement as well as the nearby surrounding areas;
- Expansion of trade and industrial activities in the settlement;
- Contribution to economic development;
- Reliable and conveniently located fuel availability to the local community; and
- Encouragement of additional investments in and around the settlement.

1.2 Project phases

The project will have 3 phases, and these are:

- (i) Construction phase**
 - Excavations for the pipeline trenches and tank pits;
 - Transporting and installing storage tanks and relevant material;
 - Installation of fuel pipelines;
 - Construction of dispensing pump islands and installation of the pumps;
 - Construction of spill control measures;
 - Installation of associated electrical supply;
 - Construction of associated buildings and other infrastructure.
- (ii) Operational phase**
 - Filling of the underground storage tanks from road transport tankers;

- Dispensing of fuel into vehicles and other approved containers.

(iii) Decommissioning phase

- Removal of all infrastructure not reused during future use of land; and
- Rehabilitation of the land.

2. SCOPE

The EIA's scope aims to identify and evaluate potential environmental impacts emanating from the construction, operations and possible decommissioning of the proposed fuel retail facility. Relevant data were collected and compiled by using secondary and primary data collected during the site visits. Potential environmental impacts and associated social impacts will be identified and addressed in this report.

The environmental impact assessment report aims to address the following:

- (i) Identification of potential positive and negative impacts;
- (ii) Provide sufficient information to determine if the proposed project will result in significant adverse impacts;
- (iii) Identification of 'hotspots' which should be avoided where possible due to the significance of impacts;
- (iv) Evaluation of the nature and extent of potential environmental impacts;
- (v) Identify a range of management actions which could mitigate the potential adverse impacts to required levels;
- (vi) Provide sufficient information to the ministry of Environment & Tourism to make an informed decision regarding the proposed project;
- (vii) Conduct a public participation meeting;
- (viii) Present and incorporate comments made by stakeholders.

3. METHODOLOGY

The following methods were used to investigate the potential impacts on the social and natural environment due to the construction and operation of the fuel retail facility:

- (i) Baseline information about the site and its surroundings was obtained from existing secondary data as well as from reconnaissance site visits;

- (ii) As part of the scoping process to determine the potential environmental impacts, Interested & Affected Parties (I&APs) were consulted, and their comments and opinions will be presented in this report.

4. ENVIRONMENTAL STUDY REQUIREMENTS

According to the Environmental Management Act (No. 7 of 2007), the proponent requires an Environmental Clearance Certificate from the Ministry of Environment & Tourism's Department of Environmental Affairs to carry out the construction of a fuel retail facility. The certificate serves as satisfaction from the Ministry of Environment & Tourism that the proposed activity will not have unduly negative impacts on the environment. It may set conditions for the activity to prevent or to minimise harmful impacts on the environment.

The proposed development is listed as a project which requires an environmental assessment as per the following listed activities in the Environmental Management Act (No. 7 of 2007) and its guidelines of 06 February 2012:

- The storage and handling of dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic metres at any location;
- The construction of filling stations or any other facility for the underground and above ground storage of dangerous goods, including petrol, diesel, liquid, petroleum, gas or paraffin;
- The manufacturing, storage, handling or processing of hazardous substance defined in the Hazardous Substance Ordinance of 1974;
- Any process or activity which requires a permit, license or any other form of authorisation, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, license or authorisation or which requires a new permit, license or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste.

5. ENVIRONMENTAL CHARACTERISTICS

This section lists the most important environmental characteristics of the study area.

5.1 Location and Land Use

The project location is at S-18.238190; E23.660616 along the B8 road in the Sangwali area (see Figure 1 above). At 1000m above sea level, the Sangwali settlement is located close to the C49 road and is the gateway to Nkasa Rupara National Park. The site of the intended project is undeveloped, with the main Sangwali Settlement approximately 500 metres South of the project location.

5.2 Climatic conditions

Table 1. Climatic conditions of the Zambezi Region

Classification of climate	Semi-arid
Average Rainfall	Averaged between 600mm-700mm per annum. Rainfall decreases more or less in a north to south and south-west direction (van der Merwe, 1983)
Rainfall Variation	Variation in rainfall is averaged to be between 30-40% per annum
Average Evaporation	Evaporation in the area is averaged to be between 2600-2800mm per annum
Precipitation	Heavy rainfall is mostly between December and March, whilst May to September has little to no rainfall recorded
Water Deficit	Water deficit is averaged to be between 1301mm-1500mm per annum
Temperatures	Temperatures in the area are averaged to be greater than 22°C per annum, with October being the warmest month of the year where it averages 25.7°C. The lowest average temperatures in the year occur in July, when it is around 15.9°C
Wind Direction	Wind direction in the area is predominantly easterly winds

5.3 Topography and Drainage

Local topography is flat a distant from the Kwando River. There is no surface water nearby, and the closest point to the Kwando River is approximately 15 kilometres to the South. The landscape forms part of the Kalahari sand veld with palaeo dunes and pans. Proper drainage systems should be developed at the facility to control the flow of surface water run-off from the site. This will

prevent any possible surface pollution resulting from daily operational activities at the fuel retail facility.

5.4 Geology and Hydrogeology

Sand, calcrete and gravel of Quaternary and Tertiary Age of the Kalahari Group make up the local geology. Ferralic Arenosols make up the dominant soil group within the area and are characterised by sandy soils with a poor capacity to retain nutrients. The groundwater level underneath the facility is expected to be on average 31m below the surface. Groundwater flow is expected to take place through primary porosity in the surface cover, while it is expected to flow along fractures, faults (secondary porosity) and other geological structures present within the underlying formations (hard rock formations). Groundwater flow from the site is expected to vary over time. During dry periods, groundwater may flow towards the river (gaining stream) and during flood periods the opposite can be expected (losing stream). Local flow patterns may further vary due to groundwater abstraction in the area.

This area does not fall into a permit-controlled area; however, groundwater remains the property of the Government of the Republic of Namibia.

5.5 Water Supply

The residents of Sangwali use underground water. The fuel retail facility is not expected to impact on the public water supply as the site will retain its own water provision. Furthermore, it must adhere to SANS standards which should successfully prevent any leakages or spillages.

5.6 Fauna and Flora

The site lies in the Savannah vegetation zone with Kalahari vegetation type and a dense shrubland structure. Trees such as *Bauhinia petersiana*, *Terminalia sericea*, *Colophospermum mopane* and *Peltophorum africanum* and a variety of other trees are characteristic of this zone. Large parts, especially near roads and villages have been cleared by locals to make farming space. Table 2 and 3 below present a summary of the general fauna and flora of the area.

Table 2. General Flora Data (Atlas of Namibia)

Biome	Savannah
Vegetation type	Kalahari
Vegetation type structure	Dense shrub land

Diversity of higher plants	Highest (Diversity rank = 1 [1 to 7 representing highest to lowest diversity])
Number of plant species	More than 500
Dominant plant species 1	<i>Colophospermum mopane</i>
Dominant plant species 2	<i>Terminalia sericea</i>
Dominant plant species 3	<i>Peltophorum africanum</i>

Table 3. General Fauna Data (Atlas of Namibia)

Mammal diversity	76-90 Species
Rodent diversity	20-23 Species
Bird diversity	171-200 Species
Reptile diversity	51-60 Species
Snake diversity	25-29 Species
Lizard diversity	16-19 Species
Frog diversity	24-27 Species
Termite diversity	19-19 Genera

The fuel retail facility will lie on a portion of land partly covered by trees and shrubs. The consultant recommends that the large trees on the site be incorporated into the project. This will promote green development and natural physical environment at the site.

5.7 Demographic Characteristics

This section provides an overview of socio-economic characteristics of the study area. It provides regional and local information on the economic activities, population dynamics, vulnerability, and social services currently available in the area.

5.7.1 Regional information

The administration centre of the Zambezi Region is Katima Mulilo, situated 100 kilometres east of Sangwali, where the proposed development will be situated. Sangwali, where the proposed development will take place, is in Judea Lyaboloma Constituency. The population statistics indicate that Zambezi Region has 90 000 residents contributes 4.0% to the total population of Namibia. It also shows that the average household size in Zambezi is 6.1 persons (NSA, 2016).

The proposed development will provide employment to people from the area. Some skills development and training will benefit employees during the operational phase.

5.7.2 Unemployment

According to the 2011 census, the total population of people aged 15 years old and above in the region were 79 638, of which 50 924 (64.0%) were economically active; 23 007 (28.9%) were economically inactive; whereas 5707 (7.2%) were classified as 'other'. The population who were employed secured jobs as clerks; craftsman; armed forces; among others.

Among the economically inactive, 695 (3.0%) were retired pensioners; 13 988 (60.8%) were students; 2597 (11.3%) were home-makers; 4 177 (18.2%) were old-age pensioners; 577 (2.5%) were unable to work because of disabilities; 354 (1.5%) were income recipients, and 2.8% other.

5.7.3 Livelihoods

Households in the Zambezi Region rely solely on subsistence farming – agricultural activities, of which 25% are involved in livestock rearing; 61% in crop production; 12% in poultry farming; 1% in horticulture; 1% in agro-processing, among others. Other sources of income in the region include business activities; wages & salaries; old age pension; disability grants; orphanage grants; retirement funds, and others.

The livelihoods of the local community are likely to be improved by the development of the fuel retail facility as it will create employment, both temporary and permanent.

5.7.4 Procurement

Local people will benefit from the construction and operational activities of the fuel retail facility. The retail facility and the sub-contractors may need to procure services from the local businesses, locals may also be employed as security guards, tellers, petrol attendants, among others.

6 OPERATIONAL ACTIVITIES

6.1 Infrastructure

The service station will have a forecourt area with three pump islands, and each will be dispensing Unleaded Petrol (ULP) and Diesel (50 ppm). The forecourt pump islands will be covered with canopies. Fuel at the service station will be stored in three underground storage tanks of 23m³ each, of which two tanks will be used for ULP and one for Diesel storage.

The tank pits will have manholes for tank inspections. All surfaces where fuel will be handled will be covered with concrete slabs sloping towards drains leading to an oil water separator. The oil water separator is a three chamber gravity separator, the outflow of which will be connected the

facility's septic tank. These spill control measures confirm with SANS to prevent spills from entering the environment. Fire extinguishers and emergency stops will be additional safety measures that will be made available on site. The building on the site will act as a shop, ablution facilities as well as offices.

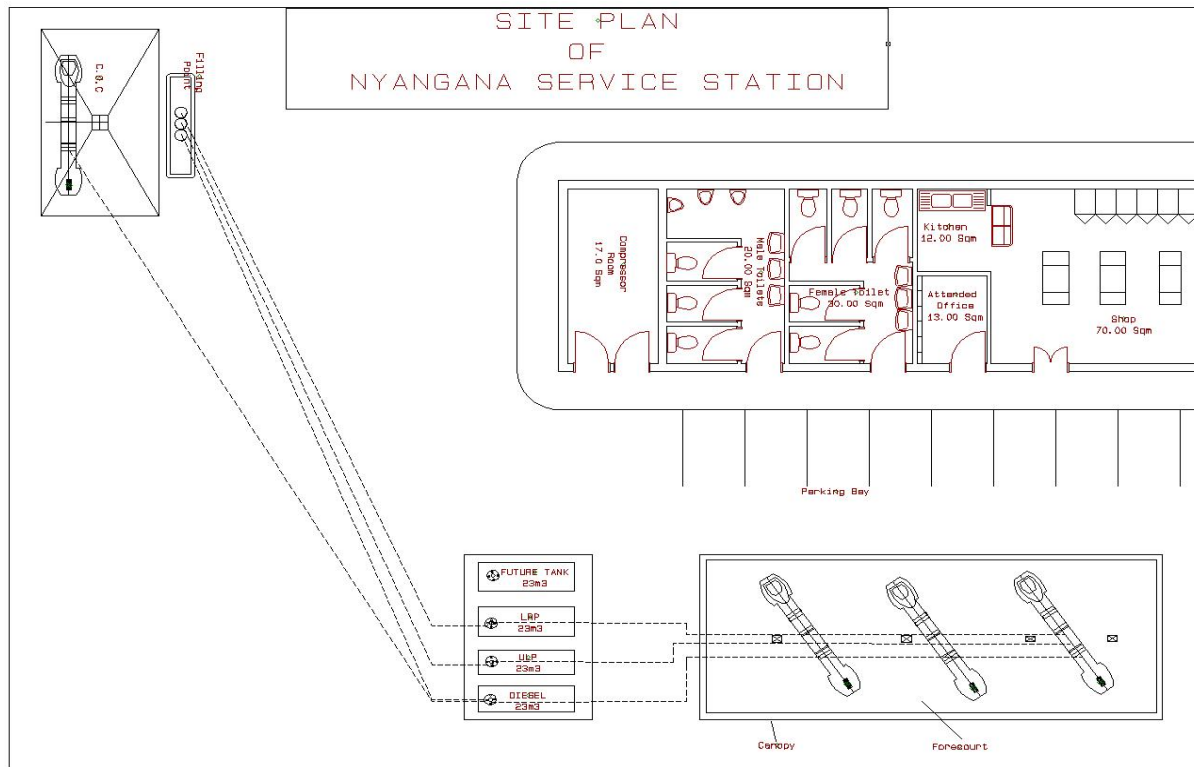


Figure 1. Layout of the proposed development

6.2 Operational activities

Unleaded Petrol and 50ppm diesel will be received from tanker trucks and stored in the underground storage tanks. The fuel will then be dispensed to consumers through the pump by pump attendants as required. Regular tank dips and reconciliation of fuel volumes will be performed to detect any possible leaks. Any spills will be cleaned-up immediately and disposed-off at an approved hazardous waste facility.

7 ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS

To protect the environment and achieve sustainable development, all projects, plans, programmes and policies deemed to have adverse impacts on the environment require an Environmental Impact Assessment, as per the Namibian legislation. The legislation and standards provided govern the environmental assessment process. The following environmental legislations are relevant to the development of the fuel retail facility:

7.1 The Namibian Constitution

The Constitution of the Republic of Namibia states that the state shall actively promote and maintain the welfare of the people by adopting policies aimed at the management of ecosystems, essential ecological processes and biological diversity of Namibia for the benefit of all Namibians, both present and future.

7.2 Hazardous Substances Ordinance (No. 14 of 1974)

This ordinance applies to the manufacture, sale, use, disposal and dumping of hazardous substances, as well as their import and export. Its primary purpose is to prevent hazardous substances from causing injury, ill-health or the death of human beings. This is administered by the Ministry of Health & Social Services.

7.3 Atmospheric Pollution Prevention Ordinance (No. 11 of 1976)

This ordinance governs the control of noxious or offensive gasses. It prohibits anyone from carrying a scheduled process without a registration certificate in a controlled area. A certificate must be issued if it can be demonstrated that the best practical means are being adopted for preventing or reducing the escape of noxious or offensive gasses produced by the scheduled process into the atmosphere. The best practice would be to notify the line ministry – Ministry of Health & Social Services – but it is not a legal requirement.

7.4 Petroleum Products and Energy Act (No. 13 of 1990, Government Notice No. 45 of 1990)

This Act regulates the petroleum industry. It makes provision for impact assessment. The Petroleum Products Regulations (Government Notice No. 155 of 2000) prescribes South African National Standards (SANS) or equivalents for the construction, operation and decommissioning of petroleum facilities (refer to Government Notice No. 21 of 2002).

The SANS 10089-3: 2010 is specifically aimed at the storage and distribution of petroleum products at fuel retail facilities and consumer installations. It provides requirements for spill control infrastructure.

7.5 Local Authorities Act (No. 23 of 1992, Government Notice No. 116 of 1992)

This Act defines the powers, duties and functions of local authority councils. It also regulates discharges into sewers.

7.6 Environmental Assessment Policy of Namibia (1995)

Environmental Assessments (EAs) seek to ensure that the environmental consequences of development projects and policies are considered, understood and incorporated into the planning

process, and that the term “environment” (in the context of IEM and EAs) is broadly interpreted to include biophysical, social, economic, cultural, historical and political components.

All listed policies, programmes and projects, whether initiated by the government or the private sector, should be subjected to the established EA procedures.

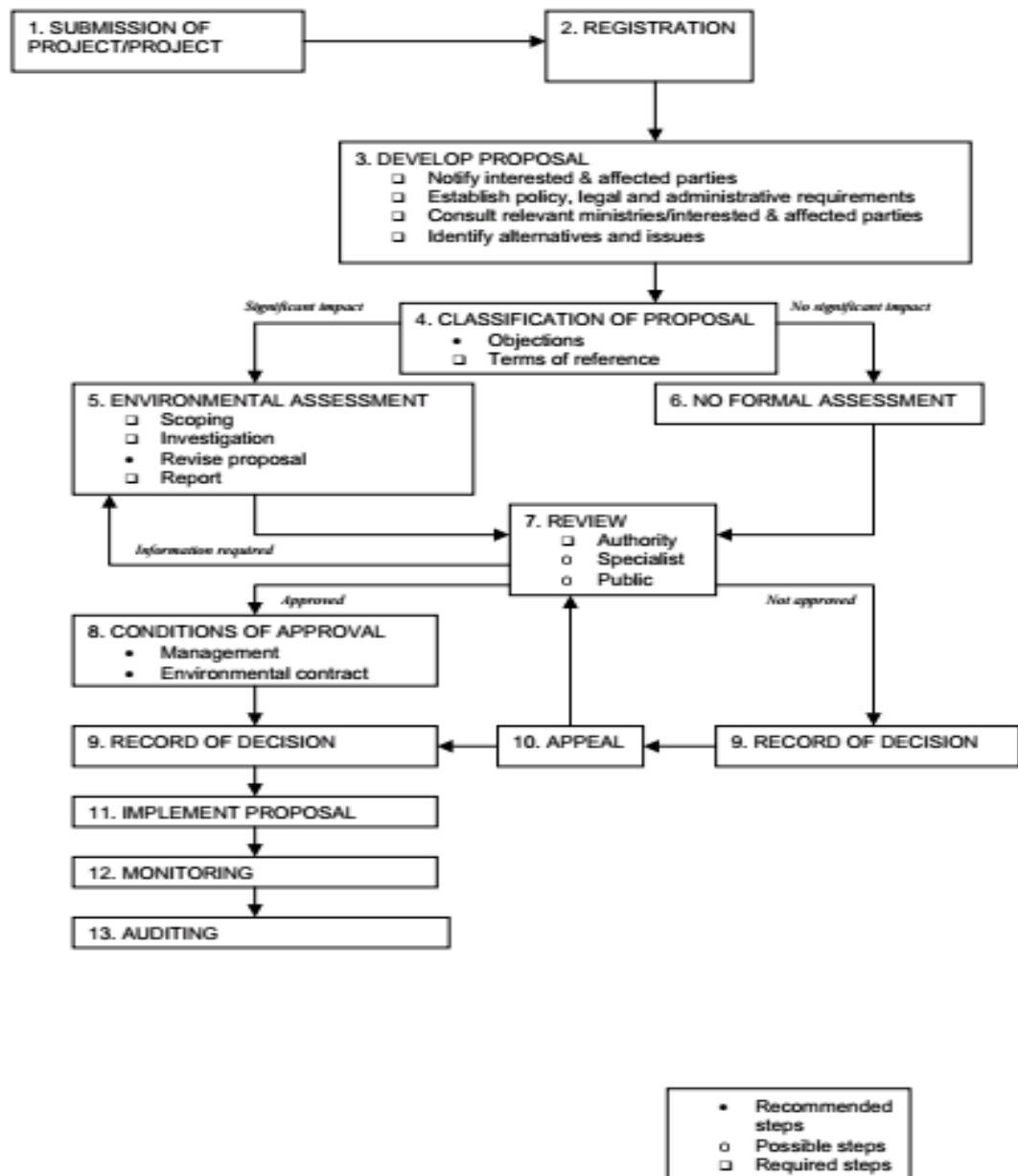


Figure 2. Environmental Assessment procedure

The EA procedure will, as far as is practicable, set out to:

- (i) better inform decision makers and promote accountability for decisions taken;

- (ii) consider broad range of options and alternatives when addressing specific policies, programmes and projects;
- (iii) strive for a high degree of public participation and involvement by all sectors of the Namibian community in the EA process;
- (iv) take into account the environmental costs and benefits of proposed policies, programmes and projects;
- (v) incorporate internationally accepted norms and standards where appropriate to Namibia;
- (vi) take into account the secondary and cumulative environmental impacts of policies, programmes and projects;
- (vii) ensure that the EA procedure is paid for by the proponent. In certain cases, such as programmes initiated by the State, it is recognised that the Government is the proponent and will meet the costs of an independent EA;
- (viii) promote sustainable development in Namibia, and especially ensure that a reasonable attempt is made to minimise anticipated negative impacts and maximise the benefits of all developments; and
- (ix) be flexible and dynamic, thereby adapting as new issues, information and techniques become available.

7.7 Environmental Management Act (No. 7 of 2007, Government Notice No. 232 of 2007)

This Act defines the term “environment” as an interconnected system of natural and human-made elements such as land, water and air; all living organisms and matter arising from nature, cultural, historical, artistic, economic and social heritage and values. It provides a list of projects which require environmental assessments. It aims to promote the sustainable management of the environment and the use of natural resources and to provide for a process of assessment and control of activities which may have significant effects on the environment, and to provide for incidental matters.

The Environmental Management Act has three main purposes:

- To make sure that people consider the impact of activities on the environment carefully and in good time;
- To make sure that all Interested & Affected Parties have a chance to participate in environmental assessments;

- To make sure that the findings of environmental assessments are considered before any decisions are made about activities which might affect the environment.

7.8 Labour Act (No. 11 of 2007, Government Notice No. 236 of 2007)

This Act provides for Labour Law and the protection and safety of employees. The Labour Act, 1992: Regulations relating to the health and safety of employees at work (Government Notice No. 156 of 1997).

7.9 Environmental Management Act Regulations (Notice No. 28-30 of 2012)

The regulations mark the commencement of the Environmental Management Act. They list the activities that cannot be carried out without conducting an Environmental Impact Assessment to obtain an Environmental Clearance Certificate. They also provide Environmental Impact Assessment regulations.

7.10 Water Resources Management Act (2004)

This Act repealed the existing South African Water Act No. 54 of 1956 which was used by Namibia. This Act ensures that Namibia's water resources are managed, developed, protected, conserved and used in ways which are consistent with fundamental principles depicted in Section 3 of this Act. Part IX regulates the control and protection of groundwater resources. Part XI, titled Water Pollution Control, regulates the discharge of effluent by permit.

7.11 Water Resources Management of Namibia (No. 11 of 2013)

This Act provides for the management, protection, development, use and conservation of water resources. Although it is not in force yet, it also makes provision for the prevention of water pollution and assignment of liability.

7.12 Public and Environmental Health Act (No. 1 of 2015, Government Notice No. 86 of 2015)

This Act provides a framework for a structured more uniform public and environmental health system, and for incidental matters. It deals with Integrated Waste Management including waste collection, disposal and recycling; waste generation and storage; and sanitation.

7.13 Pollution Control and Waste Management Bill Act

The proposed development of a fuel retail facility in Sangwali only applies to parts 2, 7 and 8 of the bill.

Part 2 states that no person shall discharge or cause to be discharged any pollutant to the air from a process except under and in accordance with the provisions of an air pollution license issued under Section 23. It further provides for procedures to be followed in license application, fees to be paid and required terms of conditions for air pollution licenses.

Part 7 states that any person who sells, stores, transports or uses any hazardous substances or products containing hazardous substances shall notify the competent authority, in accordance with sub-section (2), of the presence and quantity of those substances.

Part 8 calls for emergency preparedness by the person handling hazardous substances, through emergency response plans.

8. PUBLIC CONSULTATION

Consultations with the public forms an integral component of an EIA investigation. This enables Interested & Affected Parties (I&APs) e.g. neighbouring landowners, local authorities, environmental groups, communities and civic associations to make comments on the potential effects that may arise from the proposed development. It also allows them to identify additional issues which they feel should be addressed in the EIA.

Public participation invitation notices were advertised twice for two weeks in The Namibian and New Era newspapers on the 03rd and 27th September 2021 respectively.

32 | Friday 3 September 2021 | NEW ERA

CLASSIFIEDS

Tel: (061) 208 0800/44 Fax: (061) 220 584 Email: classifieds@nepc.com.na

Legal Notices	Legal Notices	Legal Notices	Legal Notices	Legal Notices	Legal Notices	Legal Notices
NOTICE Mortgage of the... The Registrar of Deeds... Notice is hereby given that the Registrar of Deeds... has received an application for the registration of a mortgage... of the above property... and that the mortgage is subject to the provisions of the... Mortgage Act (No. 27 of 1993) and the provisions of the... Mortgage Regulations (No. 121 of 1993). Any person having any objection against such... registration should submit his objections in writing to the... Registrar of Deeds... not later than 14 days after the date of publication of this... notice.	NOTICE Mortgage of the... The Registrar of Deeds... Notice is hereby given that the Registrar of Deeds... has received an application for the registration of a mortgage... of the above property... and that the mortgage is subject to the provisions of the... Mortgage Act (No. 27 of 1993) and the provisions of the... Mortgage Regulations (No. 121 of 1993). Any person having any objection against such... registration should submit his objections in writing to the... Registrar of Deeds... not later than 14 days after the date of publication of this... notice.	NOTICE Mortgage of the... The Registrar of Deeds... Notice is hereby given that the Registrar of Deeds... has received an application for the registration of a mortgage... of the above property... and that the mortgage is subject to the provisions of the... Mortgage Act (No. 27 of 1993) and the provisions of the... Mortgage Regulations (No. 121 of 1993). Any person having any objection against such... registration should submit his objections in writing to the... Registrar of Deeds... not later than 14 days after the date of publication of this... notice.	NOTICE Mortgage of the... The Registrar of Deeds... Notice is hereby given that the Registrar of Deeds... has received an application for the registration of a mortgage... of the above property... and that the mortgage is subject to the provisions of the... Mortgage Act (No. 27 of 1993) and the provisions of the... Mortgage Regulations (No. 121 of 1993). Any person having any objection against such... registration should submit his objections in writing to the... Registrar of Deeds... not later than 14 days after the date of publication of this... notice.	NOTICE Mortgage of the... The Registrar of Deeds... Notice is hereby given that the Registrar of Deeds... has received an application for the registration of a mortgage... of the above property... and that the mortgage is subject to the provisions of the... Mortgage Act (No. 27 of 1993) and the provisions of the... Mortgage Regulations (No. 121 of 1993). Any person having any objection against such... registration should submit his objections in writing to the... Registrar of Deeds... not later than 14 days after the date of publication of this... notice.	NOTICE Mortgage of the... The Registrar of Deeds... Notice is hereby given that the Registrar of Deeds... has received an application for the registration of a mortgage... of the above property... and that the mortgage is subject to the provisions of the... Mortgage Act (No. 27 of 1993) and the provisions of the... Mortgage Regulations (No. 121 of 1993). Any person having any objection against such... registration should submit his objections in writing to the... Registrar of Deeds... not later than 14 days after the date of publication of this... notice.	NOTICE Mortgage of the... The Registrar of Deeds... Notice is hereby given that the Registrar of Deeds... has received an application for the registration of a mortgage... of the above property... and that the mortgage is subject to the provisions of the... Mortgage Act (No. 27 of 1993) and the provisions of the... Mortgage Regulations (No. 121 of 1993). Any person having any objection against such... registration should submit his objections in writing to the... Registrar of Deeds... not later than 14 days after the date of publication of this... notice.

Notices
Legal Notice

INVITATION TO PUBLIC PARTICIPATION MEETING

ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN FOR THE DEVELOPMENT OF A FUEL RETAIL FACILITY AT SANGWALI VILLAGE, ZAMBEZI REGION

Notice is hereby given to all interested & Affected Parties (I&APs) that an application will be made to the Environmental Commissioner in terms of Environmental Management Act (No. 7 of 2007) and its Regulations of 2012 for the following intended activity:

Project Name: Development of a fuel retail facility at Sangwali village, Zambezi Region

Project Location: Sangwali Village, Zambezi Region

Project Description: The proposed development will involve the construction of a fuel retail facility at Sangwali village in the Judaea Lyabuloma Constituency.

Proponent: Mphahle Mkhwanane

Environmental Consultant: Regina Mwanga

All interested & Affected Parties are encouraged to register and raise concerns or provide comments and opinions. All interested & Affected Parties will be provided with a Background Information Document (BID) comprising of detailed information for the intended activity. A public participation meeting on the intended development will be held at:

Venue: Sangwali village
Date: 17 September 2021
Time: 09:00-11:00

Should you wish to register as an interested & Affected Party and receive a BID, please contact Regina Mwanga at 081641022, mwanga.r@gmail.com or Elaine Hooesee at 0816615973, emhooesee@gmail.com

Deadline for comments: 30 September 2021

New Era and The Namibian Newspaper adverts

Two site notices were placed on the site of the proposed development and Background Information Documents (BIDs) were given to I&APs. Other public invitation notices to the public participation meeting were placed in and around Katima Mulilo’s Central Business District (CBD) area, as well as at the Sangwali, as shown below:



Notice at Zambezi Shopping Centre, Katima, Notice at the Sangwali Mission Hospital entrance, and various public places around Sangwali area.

The invitation to the public participation was also aired twice on NBC Rukavango Radio Service on the 03rd and 27th September 2021. The headman also mobilised the community by inviting them to the meeting.

A public participation meeting was held on Friday, the 17th September from 10:00 at the Sangwali village. The aim of the meeting was to gain input from the members of the community, as shown below:



No issues or comments relating to the environment were raised during the public participation meeting.

9 MAJOR IDENTIFIED IMPACTS & EVALUATION

The Environmental Impact Assessment (EIA) sets out potential positive and negative environmental impacts associated with the proposed development. The following assessment methodology was used to examine each impact identified:

Criteria	Rating (Severity)	
Impact Type	+VE	Positive
	0	No impact
	-VE	Negative
Significance of impact being either	L	Low (little or no impact)
	M	Medium (manageable impacts)
	H	High (adverse impact)

Probability	Duration
5 – Definite/don't know	5 – Permanent
4 – Highly probable	4 – Long term (impact ceases)
3 – Medium probability	3 – Medium term (5 to 15 years)
2 – Low probability	2 – Short term (0 to 5 years)
1 – Improbable	1 – Immediate
0 – None	
Scale	Magnitude
5 – International	10 – Very high/don't know
4 – National	8 – High
3 – Regional	6 – Moderate
2 – Local	4 – Low
1 – Site only	2 – Minor
	0 – None

(i) Construction Phase

- **Dust pollution**

Dust will be generated during the construction phase. These are expected to be site specific and will pose no nuisance and health threats in the area.

The construction of the proposed fuel facility is envisaged to have minimal impacts on the surrounding air quality. It is recommended that regular dust suppression be included in the construction phase when dust becomes an issue.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Dust	-VE	1	1	4	3	M	L

- **Noise impact**

Earth moving equipment will be utilized during the construction phase and noise might be generated. Construction workers should be equipped with ear protection equipment. The nearby villages may be impacted too. Construction activities should be limited to 07h00 to 18h00.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Noise	-VE	2	1	6	4	M	L

- **Safety and security**

Safety issues could arise from earthmoving equipment that will be used on site during the construction period. This increases the possibility of injuries and the responsible contractor must ensure that all staff members are made aware of the potential risks of injuries on site. The contractor is advised to ensure that the team is equipped with first aid kits and that they are available on site at all times. Workers should be equipped with adequate personal protective gear and properly trained, thus mitigating these impacts.

Should a construction camp be necessary, it should be located in such a way that it does not pose a risk to the public. Equipment housed on site must be placed in a way that does not encourage criminal activities i.e. thievery. For safety and security reasons, it is recommended that the entire site (construction site & camp) be fenced-off and security personnel be employed to safeguard the premises and to avert criminal activities. Relevant safety signs should be clearly displayed.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance
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						Unmitigated	Mitigated
Safety, security	-VE	1	1	6	3	M	L

- **Traffic**

The site is situated along the Trans-Caprivi Highway (B8), thus, construction related activities are expected to have an impact on the movement of traffic. However, the impact will be minimal since there will be no diversion of traffic or closure of the road expected. Proper and adequate signage should be deployed at the construction site and along its access roads.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Traffic	-VE	1	1	6	3	M	L

- **Ground water**

Ground water quality could be impacted through oil leakages and grease from earthmoving equipment and machinery utilized during the construction phase. Care must be taken to avoid the contamination of groundwater. Drip trays must be used when removing oil from machinery and vehicles. All contaminated soil must be removed from the site and disposed-off at a hazardous waste site or bio-remediated before it is disposed-off in the environment.

Proper toilet facilities (temporary) should be erected at the construction site and at the camping site, or alternative arrangements should be made. The contractor shall ensure that there is no spillage when toilets are cleaned or during normal operations, and that the contents are properly removed from the site.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Ground water	-VE	2	2	6	2	M	L

- **Surface water**

No waste material may be disposed-off in any of the nearby waterways and/or depressions. Petroleum contaminated equipment or clothing should not be washed within 20 metres from any surface water body. Contamination of soil and surface water should be avoided at all cost.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Surface water	-VE	1	2	6	2	M	L

- **Generation of waste**

All waste must be collected, contained and disposed-off at an appropriate waste disposal site. Contaminated soil and building rubble are common on most construction sites and thus must be addressed. Waste must be disposed-off at an appropriately classified waste disposal site. If none exists, consultation with the local authority (Sangwali Traditional Authority) should be done for any disposal of waste.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Waste	-VE	1	2	8	4	M	L

- **Ecological Impacts**

Vegetation is expected to be impacted.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Ecology	-VE	1	5	8	4	M	L

All potential impacts during the construction phase, summarised:

In general, impacts are expected to be Low to Medium, mostly short-lived and site specific. Mitigation options recommended in the Environmental Management Plan (EMP) will guide and ensure that the impacts of the construction work are minimized. It is further advised that traffic signs and barricades be installed around any excavations to ensure safety. Proper storm water management plans must be in place to minimize the risk of flooding and pollution, and must form part of the engineering designs. The developer is urged to make large trees (if feasible) on site as part of the proposed development and not clear them.

The appointed contractor should be made aware of the content and environmental requirements of this report through proper induction training.

(ii) Operational Phase

- **Spillages**

Spillages are bound to occur during delivery and dispensing of fuel over the operational phase of the fuel retail facility. Workers must be properly trained to avoid such incidents, and they must be provided with emergency response procedures which they should be familiar with. Fuel tanks could be placed in suitable containment structures, such as bund walls or plastic liners to avoid the spread of spills.

Staff should at all times be aware of the precautions associated with the handling of petroleum/chemical products as described in relevant Material Safety Data Sheets (MSDS).

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Spillages	-VE	1	2	6	4	M	L

- **Air quality**

Air quality around the site could be impacted by exhaust fumes from the fleet of transport tanker trucks and vehicles accessing the facility. Hydrocarbon vapours will be released during delivery and dispensing, as liquid displaces the gaseous mixture in the tanks.

In terms of fuel storage tanks, the vapours will be released through vent pipes on the tanks. Vent pipes should be placed in such a manner as to prevent impact on potential receptors. It is recommended that regular air quality monitoring be conducted at the facility.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Air quality	-VE	1	4	4	4	L	L

- **Fire and explosion risk**

Emergency response procedures should be in place so as to alert the employees on how to react to fire and explosion incidents. An incident reporting procedure should be implemented to make the employees aware of how, when and to whom to report fire and explosion incidents.

Regular inspections should be carried out to inspect and test fire fighting equipment and emergency response at the fuel retail facility. It is highly recommended that electrical wiring of the facility be installed and approved by a qualified electrician who will issue a Certificate of Compliance.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Fire and explosions	-VE	1	2	8	4	M	L

- **Generation of waste**

Waste such as contaminated soil, litter, empty cans of engine oil will be generated during the operational phase. Waste bins must be available at the retail facility at all times. Waste must be appropriately collected and disposed-off at an approved and appropriate waste disposal site.

Oil water separator effluent originating from storm water runoff, tank bottoms and washing activities should be separated before disposal of the water. Regular monitoring of the oil water separator outflow must be conducted. Consultation with the local authority (Sangwali Traditional Authority) should be conducted for any disposal of waste.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated

Waste	-VE	1	5	6	3	L	L
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- **Surface water**

Surface runoff is expected on the site. It is highly unlikely that contaminated surface runoff from the site will reach the Okavango River, due to the distance between the site and the river. Proper containment mechanisms installed should be able to contain any spillages that may occur during the operational phase of the facility. The presence of an emergency response plan and suitable equipment is encouraged so as to react properly and efficiently to any spillages or leakages.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Surface water	-VE	1	2	6	3	M	L

- **Ground water**

Spillages might occur during delivery of fuel; overfilling of vehicles at the site. Overfilling of the tanker trucks may also take place, and proper monitoring of the product levels must take place and proper monitoring of the product levels must take place to eliminate overfilling. All operational surfaces at the facility must be installed with spill containment areas.

Equipment and materials to deal with spill clean-up must be readily available on site and staff must be trained on how to use the equipment. Staff should also be briefed about reporting procedures. Training attendance list must be kept. The risk can be lowered further through the installation of suitable containment structures.

Regular tank and pipeline tightness inspections are encouraged to eliminate the risk of impact on the environment due to leakages.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Ground water	-VE	2	5	8	4	M	L

- **Health and safety**

The operations of the facility can cause health and safety risks to workers on site. Employees could be exposed through skin contact with the fuel and inhalation of fuel particulates during the handling of such products.

Staff must be properly trained and made aware of all the MSDS (Material Safety Data Sheets) sheets of all chemicals on site. Fire fighting equipment and a first aid kit should be made available and must be serviced regularly. Employees are expected to be trained on how to use all equipment and how to handle petroleum products, and training attendance list must be kept.

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Health & safety	-VE	1	5	6	3	M	L

- **Traffic**

High traffic leading to the proposed facility is expected. This impact will be long lived as both passenger vehicles and long distance trucks will be making use of the same site. Appropriate road signs should be erected to reduce these impacts and their spin-offs.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Traffic	-VE	1	5	6	4	M	L

- **Ecological impact**

The proposed facility operation will have minimal impact on the flora and fauna. The operational activities will not exceed the demarcated area for the proposed development of the fuel retail facility.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigate
Ecology	-VE	1	5	6	4	L	L

(iii) Decommissioning Phase

During the decommissioning phase, all existing infrastructure not to be used for future plans of the land must be removed. 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 WHO standards and waste production should be contained and disposed-off 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 Environmental Management Plan for this phase will have to be reviewed at the time of decommissioning to cater for changes made to the site.

(iv) Cumulative Impacts

Construction: possible cumulative impacts associated with constructive phase include an increase in traffic in visiting the site. An increase in emissions from these vehicles will be experienced, decreasing the air quality around the proposed development. Wear and tear of the roads could be expected, coupled with increased risks of road traffic incidences. These impacts will be short lived for a duration of construction.

Impact evaluation:

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Cumulative impacts	-VE	1	1	6	4	L	L

Operational: potential cumulative impacts associated with operational phase include increase in traffic around the site. Emissions from vehicles visiting the proposed fuel are expected. Coupled with existing emissions from vehicles in the surrounding areas, the air quality will be impacted. Coupled potential hydrocarbon pollution from vehicles and the proposed facility could become significant if not managed properly.

Aspect	Impact type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Cumulative impacts	-VE	1	5	6	4	M	L

10. ALTERNATIVES TO THE DEVELOPMENT

10.1 No-go Alternative

The no-development alternative is the option of not establishing the fuel retail facility. Should the proposed development not take place, development in the area will be hindered due to the lack of fuel retail facilities, which will then result in the continued lack of fuel retail facilities in the area. The proposed facility will help alleviate the shortage of fuel supply in Sangwali.

The development of the fuel retail facility will provide the much needed filling station with all its associated modern services to motorists in the Sangwali settlement and long-distance motorists alike.

Thus, the no-development option is not considered to be a feasible alternative.

10.2 Site Alternative

The project location is located within a rural setting, which is already disturbed as there was already a homestead there. The project location is generally suitable for this kind of development. The environmental footprint is expected to be minimal as the project location is already disturbed. The possible impacts of the development at the project location, both environmental and socio-economic, are of such a nature that they can be mitigated through good practice and compliance to the Environmental Management Plan (EMP).

11. ENVIRONMENTAL MANAGEMENT PLAN

The Environmental Management Plan (EMP) provides management options to ensure that the impacts of the proposed development are minimised. An EMP is an environmental management tool which is used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented, and the positive benefits of the projects are enhanced. This document can be used during the various phases of project development of the fuel retail facility. All personnel taking part in the operations of the facility should be aware of the contents of the EMP, so as to plan the relevant activities accordingly and in an environmentally sound manner. An EMP for the construction, operational and decommissioning phases of the project has been drafted and is available as a separate document.

The objectives of the EMP are:

- To include all components of the development;

- To prescribe the best practicable control methods to lessen the environmental impacts associated with the operational activities of the facility;
- 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.

The proponent could implement an Environmental Management System (EMS) for its operations. An EMS is an internationally recognised and certified management system that will ensure ongoing incorporation of environmental constraints. An EMS entails the continual improvement of environmental performance with resulting increases in operational efficiency, financial savings and reduction in environmental, health and safety risks. An effective EMS 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 EMS;
- Identification of environmental, safety and health training needs;
- An environmental programme(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;
- Periodic (internal and external) audits and reviews of environmental performance and the effectiveness of the EMS; and
- The Environmental Management Plan.

12. CONCLUSION

In general, the proposed development will pose limited environmental and social risks. The facility will in turn have a positive impact on Sangwali and Zambezi as a whole. The facility will not only provide a reliable and convenient supply of fuel, but also contribute to skills transfer and training of the local people which in turn will develop the local workforce.

The site is generally suitable for the proposed fuel retail facility. Negative effects can be successfully mitigated through implementing preventative measures and sound management systems. It is recommended that this information be made available and accessible to the community members

on a regular basis. Noise pollution should be monitored so as to not cause a nuisance. Fire prevention should be adequate, and safety and health should be adhered to in accordance with the regulations pertaining to relevant laws and internationally accepted standards of operation. Any waste produced must be removed from site and disposed-off in an appropriate way or re-used or recycled where possible. Hazardous waste must be disposed-off at an approved hazardous waste disposal site.

The Environmental Management Plan should be used as an on-site tool during all phases of the proposed fuel retail facility. Parties responsible for transgressing the EMP should be held responsible for any rehabilitation that may need to be undertaken. The proponent could use an in-house Health, Safety, Security and Environmental Management System (EMS) together with the Environmental Management Plan (EMP). All operational personnel must be taught the contents of these documents. Monitoring of water pollution should be conducted every quarter month of the year.

13. REFERENCES

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