

2020

DU Preez Petroleum cc

Conserver Investment cc, Environmental Consultants

**ENVIRONMENTAL
ASSESSMENT
SCOPING REPORT
AND
ENVIRONMENTAL
MANAGEMENT PLAN
FOR A PROPOSED
SHOPPING MALL ON
ERF 1278, EXT 4
RUNDU INDUSTRIAL
AREA**

PROJECT & PROPONENT DETAILS

REPORT TITLE: Environmental Impact Assessment Report for Construction and Operation of a Shopping mall

PROPONENT: DU Preez Petroleum cc CC/200/5198

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LOCATION OF PROJECT: ERF 1278, EXTENSION 4 Rundu Light Industrial, Kavango East, Namibia.

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EXECUTIVE SUMMARY

DU Preez Petroleum cc (project proponent) intends to establish a shopping mall on ERF 1278 Rundu light Industrial area, Kavango East Region, Namibia. The proponent tasked Conserver to prepare this Environmental Assessment scoping report which will be used to apply for an environmental clearance certificate for the proposed establishment of a shopping mall. The main activities that shall be carried out in the proposed project life span will include construction of a concrete structured high rise building, operation of dynamic shopping activities on the finished complex and a local taxi rank for easy accessibility.

The industrial area of Rundu town lands is located to the North-Western direction of the Central Business District (CBD) and has a total allocated land of 2757 square meters (m²). Due to a high demand of land for housing purposes, the town Council approved the development of newly established Sauyemwa suburbs; extension 31 and 32 to the northern part of the CBD and these will be in favour of the proposed project operational activities. The portion in question has a capacity to support the proposed shopping mall and other related activities. The portion will support the establishing of a taxi rank for ease and convenient shopping and a service station.

Engagement of Interested and Affected Parties (I&APs) is an integral component of the EIA process. This enables potentially affected people or communities, as well as key stakeholders inputs when undertaking an EIA study. Consultation with the local community is essential to ensure that the impact assessment takes account of issues regarded as priorities by those people living in and around the project area, and affected by the development. A combination of methods was used to implore views and concerns of the different stakeholders. The methods used include key informant interviews, informal interviews and semi-structured questionnaires. Relevant stakeholders were consulted and these responded through questionnaires and informal interviews.

An Environmental Management Plan (EMP) describes the processes that will be followed to maximize compliance and minimize harm to the environment. This plan also helps the proponent toward achieving continual managerial improvements. Each project is unique and, as a result, so is environmental management plan. In the context of this Environment Assessment scoping

report, the Environmental Management Plan (EMP) is limited to the mitigation and management of negative impacts rated as moderate, high and extreme during impact assessment.

The project will have an impact on the environment. With proper management and monitoring plans the negative impacts can be mitigated. Positively the proposed activity development will contribute towards alleviating poverty in the entire region through providing employment during construction and operation phases, generation of Inland Revenue through taxing, infrastructural development and promotion of recreational/social/outdoor activities. These impacts far outweigh the anticipated negative impacts which are addressed in the form of an Impact Management Plan. The project development is most likely to encounter most negative impacts during the construction phase and less during operation phase. Therefore the establishment of the shopping complex should be implemented while the proponent should take into cognisance all recommended mitigation measures at all stages of project life cycle.

DEFINITION OF TERMS

Environment – the natural and man-made resources, both biotic and abiotic, occurring in the lithosphere and atmosphere, water, soil, minerals and living organisms, whether indigenous or exotic, and the interaction between them.

Environmental Impact Assessment (EIA) – it's an evaluation of a project to determine its impact on the environment and human health and to set out the required environmental monitoring and management procedures and plans.

Manage – means to manage with a view to securing its protection, conservation, regulations, rehabilitation, and sustainable use.

Monitor – means to assess continuously the state and trends of developments on any part of the environment as well as the actual or potential impact of any activity on the environment and human health.

Natural resource – the air, soils, minerals and waters of Namibia, mammals, birds, fish, trees, grasses, springs, sponges, marshes, swamps and public streams.

Pollution – any direct or indirect alteration of the physical, thermal, chemical, biological properties of the environment caused by discharge, emission, or deposit of a substance into the environment.

Project – means any activity which has or is likely to have an impact on the environment.

Sustainable utilization – means the use or exploitation of the environment which guards against extinction, depletion or degradation of any natural resource and permits the replenishment of natural resources by natural means or otherwise.

Waste – includes domestic, commercial or industrial material, whether in liquid, gaseous or solid form, which is discharged, emitted or deposited into the environment in such volume, composition or manner as to cause pollution.

ACRONYMS

EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
IMP	Impact Management Plan
STDs	Sexually Transmitted Diseases
MET	Ministry of Environment and Tourism
OHS	Occupational Health and Safety
RTC	Rundu Town Council
MSDS	Material Safety Data Sheet
WWTP	Waste Water Treatment Plant
VEC	Valuable Ecosystem Component
CBD	Central Business District
I&APs	Interested and Affected Parties
GhGs	Greenhouse Gases
NHC	Namibia Heritage Council
SHEW Plan	Safety, Health and Environmental Wellness Plan
SMEs	Small and Medium Enterprises
UNFCCC	United Nations Framework Convention on Climate Change

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CHAPTER 1: INTRODUCTION

1.0 Introduction

DU Preez Petroleum cc appointed Conserver Investment cc to carry out an Environmental Impact Assessment (EIA) process which is the initial step towards obtaining an Environmental clearance certificate for their proposed shopping complex. This report was compiled and shall be submitted to Ministry of Environment and Tourism (MET) in fulfillment of the Environmental Management Act (No 7 of 2007) of the Republic of Namibia.

This EIA report is an assessment of the potential environmental consequences of the construction and operation of a shopping mall project. The proposed activity is most likely to cause a number of both positive and negative impacts during the initiation and entire life cycle of the project. The anticipated impacts includes landscape and visual changes, soil erosion/ land degradation, land pollution, air pollution (noise and dust), underground water pollution, increased surface runoff, change in water table patterns, socio-economic impact, illegal activities, occupational safety, health and environmental hazards.

1.1 Justification for an Environmental Impact Assessment

General consensus by several authors acknowledged that, the image of infrastructural development is litigious worldwide giving the public a considerable suspicion in as far as the attitude and commitment of the industry towards environmental protection is concerned. There are probably plentiful examples in history of poor environmental control than there are flagship projects where sustainable development has proceeded in harmony with maintenance of high environmental standards. It is against this background that several pieces of legislations were put in place in an effort to regulate at most construction activities pre and post-independence Namibia. Based on this environmental legal framework background, Environmental Impact Assessment (EIA) studies are mandatory to all process or activity which requires a permit, license or other form of authorisation, or the modification of authorisation, or the modification, of or changes to existing facilities for any process or changes to existing facilities for any process or activity which requires amendment of an existing permit, licence or authorisation in terms of a

law governing the generation or release of emissions, pollution, effluent or waste activities as enshrined in the Environmental Management Act of 2007 and its regulations. In compliance to standing policies as well as trying to explore possible externalities likely to be generated by its proposed development activities, a detailed participatory EIA study was commissioned for DU Preez Petroleum Cc shopping mall project with the core focus of influencing decision making during planning, construction and phases of the project.

1.2 Project Location

Rundu is the administrative capital of Kavango East region, North-Eastern Namibia, on the border with Angola on the banks of the Kavango River about 1,000 metres (3,300 feet) above sea level.

The infrastructural development is expanding towards the north easterly direction of the CBD. The major reason might be the availability of serviceable land. The proposed development under discussion as well is in line with the developmental wave in the Light Industrial Extension 4 Area of Rundu townlands.

The proposed project site is delineated under Industrial zoned portion along Independence Avenue adjacent to Queenspark and Sauyemwa. The proposed project location is a strategic site for the fast growing urban population. The development will be done on Portion 1278, Extension 4 of Rundu light Industrial town lands. The proposed project is done on a 1757 m² sub divided portion of land in the same premises with a newly proposed service station. *Plate 1* overleaf portrays a Google Earth Map locality of ERF 1278 to support the proposed shopping complex highlighted in black and the proposed service station is in red.



Plate 1: (Source: Google Earth; 2020)

Table 1: The table below shows the proposed project site coordinates.

Coordinate number	Latitude	Longitude
A	<i>-17^o 55337265</i>	<i>19,45099805</i>
B	<i>-17^o 5530 72381</i>	<i>19,455 06675</i>
C	<i>-17^o 552576994</i>	<i>19,45246632</i>
D	<i>-17^o 55287647</i>	<i>19,445826492</i>
E	<i>-17^o 552990503</i>	<i>19,445791419</i>

1.3 Objectives of the Project

The aim of this project is to establish a new shopping mall and convenience taxi rank on portion 1278, Extension 4 of Rundu town lands. ERF 1278 also has a service station. The objectives of the project by DU Preez Petroleum Cc are to:

- (a) Address the urbanization challenges in Rundu and entire Kavango East Region.*
- (b) Improve the living standards of local people by creating new opportunities for business agglomeration since tourism industry is lucrative in the region, and*
- (c) Ensure a sustainable infrastructural project development and increase profitability.*

1.5 Scope of the EIA Study

The study has been conducted to evaluate the impacts emanating from the proposed development specifically from planning, construction and operations phases. The Environmental scoping report includes an assessment of impacts of the planning, construction and operations on the following:

- A review of the policy, legal and administrative framework
- Description of the proposed project
- Baseline information (Biophysical and Socio-Economic environment)
- Assessment of the potential environmental impacts of the proposed project on the biophysical, socio-economic, and cultural aspects.
- Development of the mitigation measures and future monitoring plans.
- Occupational Health and Safety (OHS)
- The study also assesses the impacts of the proposed development on the environment in accordance with Namibian Environmental Management Act of 2007 and its regulations.

1.6 Project Justification

The proposed activity is economically viable ensuring a sustainable development project which intends to maintain ecosystems equilibrium and socially acceptable. The project shall be a reference point to the project developers in Rundu to ensure environmental sustainability.

The project is going to help the community through:

- Providing employment for the local people especially the youths
- It is a step towards ensuring legal compliance and environmental sustainability in Rundu/Kavango East and the Namibian nation at large.
- The project will also contribute to economic development of both the local and national level through revenue generation as well as enhancing the market for local commodities.
- Increasing family income to the underprivileged communities

1.7 EIA study methodology

1.7.1 Preliminary assessment

Preliminary assessment shall include review of:

- i. Review of the feasibility Report of the project.
- ii. Review of any other documentation relevant for the study
- iii. Review of available literature as well as other relevant documentation such as maps and aerial photographs

The preliminary assessment shall enable the team to establish the major tasks to be tackled during the rest of the EIA process, to identify further data requirements and decide on the most appropriate assessment methods to be used during the project site visitations.

1.7.2 Background Information Document

This is a summary of the project that shall be submitted to the MET for review. MET will respond in writing recommending either, an Environmental Management Plan, a full Environmental Impact Assessment or any other recommendations as guided by Environmental statutes.

1.7.3 Environmental Assessment Scoping Report

After MET conducts a formal communication to undertake an impact assessment. This will be followed by field visits and assessments. Major aspects that shall be covered in the compilation of the final scoping document shall include:

- On-site assessments of the project site.

- An analysis of the state of the environment - will determine the prevailing state of the environment at the project site and this considered in two aspects which are the biophysical features and socio-economic issues. Biophysical environment gives a brief description on the biological and physical environment. Socio-economic aspects describe the social and economic set up of the community within the vicinity of the project area.
- **An analysis of the key social and biophysical impacts** - The initially identified broad impacts will be analysed and significant or key impacts will be identified.
- **Identifying vulnerable groups** within the project area and recommend measures to minimise risks and enhance project benefits to the vulnerable communities.
- **Evaluation of the key impacts** - This stage will focus on the quantification and costing of these impacts in order to determine the extent and scale of each impact and come up with appropriate mitigating measures. These will allow sustainable use of the environment without compromising the affordability and appropriateness of the project.
- **Stakeholder consultations.** The EAct of 2007 makes it mandatory for all proponents to involve the public. Public consultations will be undertaken to prompt value judgments from local people and institutional stakeholders regarding perceived biophysical, economic and social impacts that may arise during project. A description of the public participation methods, timing and the type of information provided to the public. Methods that shall be used will vary and range from stakeholders' consultative meetings, individual interviews, focus group discussions, observations and recordings, informal discussions and tailor made questionnaires for the proposed project. Where necessary the stakeholders shall be taken to the site to have an appreciation of the magnitude and operation of the project.
- **Analysis of alternatives** - An analysis of reasonable alternatives to meet the ultimate project objective will be done. The analysis may suggest designs that are sounder from: an environmental, gender, social cultural or, and economic point of view than the originally proposed project.
- **Development of an Environmental Management Plan (EMP)** - An EMP will be formulated and this would include environmental monitoring measures. With the help

of the consultation from monitoring institutions and authorities such as, Rundu Town Council, and MET, documentation of the main environmental norms relating to each impact and source would be done.

- **Development of a monitoring plan.** A detailed plan to monitor the implementation of mitigating measures and the impacts of the project during construction, operation and decommissioning will be prepared.
- **Final EIA writing, editing and publishing.** The report will cover: study findings, summaries of data collected, Environmental management and Monitoring Plans, Conclusions and recommended actions

1.7.4 Terms of reference of the EIA study

The Environmental Impact Assessment to be completed by Conserver Investments cc will provide a comprehensive evaluation of the proposed project producing an EIA and EMP documenting the following:

- (a) A description of all tasks to be undertaken as part of the assessment process, including any specialist to be included if needed;
- (b) An indication of the stages at which the Environmental Commissioner is to be consulted;
- (c) A description of the proposed method of assessing the Environmental issues and alternatives, and
- (d) The nature and extent of the public consultation processes to be conducted during the assessment process

1.8 Review of Existing Evidence

The first site visit made on the 5th of February and reviewed the following:

1. A vast cleared and undeveloped land 2757 m² with eighteen (18) big trees
2. A 100-meter trench for bulky water connection (75 x 75 cm deep)
3. Convenience shop foundation trench (160 x 100 cm in depth)
4. Six built pillars to delineate the boundary corner pegs

1.9 Project Location Alternative

Alternative 1: Without Project Scenario

Without the project DU Preez Petroleum cc has to look for another business proposal to utilize portion 1278 to contribute to the Gross Domestic Product (GDP) of the country. Increased pressure on available infrastructural development and services on the Central Business District (CBD) will be the order of the day.

There will be no available possibilities of employment creation in the region affecting the economically active group. There will be no development and ERF 1278 EXT 4 Rundu light industrial area will remain under developed.

Alternative 2: With Project Scenario – establishment of a new shopping complex on ERF 1278 EXT 4 Rundu light industrial area.

With the project scenario, the development will promote employment creation, increased GDP per capita income with business agglomeration and increased infrastructural development within Rundu urban, Kavango East at large.

CHAPTER 2: REGULATORY FRAMEWORK

2.0 Introduction

Combined, policy, legal and administrative frameworks, facilitates sustainable development. Mentioned below are acts and policies that have relevance to the establishment of a new shopping mall. These pieces of legislation include the Environmental Management Act of 2007, Environmental Management Act Regulations 2012, Water Act and other Occupational Health, Safety and Environmental Management Statutory instruments and legislations.

The Environmental Management Act 7 of 2007 is the principal defender to the environment aiming to:

Promote the sustainable management of the environment and the use of natural resources by establishing principles for decision making on matters affecting the environment; to establish the Sustainable Development Advisory Council; to provide for the appointment of the Environmental Commissioner and environmental officers; 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 fruits of sustainable development are conducted by a comprehensive statutory framework which was used in this section. All the relevant legal instruments and prescribed procedures have been acknowledged.

Table 2: Relevant legislation and policies which are instrumental to the project

NAME	NATURAL RESOURCE USE(ENERGY AND WATER)	AIR EMISSIONS	LAND POLLUTION	WATER POLLUTION	BIODIVERSITY IMPACT	LAND USE IMPACT	NOISE	VISUAL IMPACT	EMERGENCY SITUATIONS	SOCIO-ECONOMIC	SAFETY & HEALTH	OTHER
The Constitution of the Republic of Namibia of 1990	x	x	x	x	x	x	x		x	X	x	
Environmental Management, Act 7 of 2007	x	x	x	x	x	x	x			X	x	
Environmental Management Act Regulations (2012)	x	x	x	x	x	x				X		
Namibia's Environmental Assessment Policy	x	x	x	x	x	x	x	x	x		x	
Waste Management Regulation			x					x			x	
Water Resources Management Act 11 of 2013	x			x						X		
Hazardous Substance Ordinance, No. 14 of 1974												x
Public and Environmental Health Act		x	x	x							x	
Labour Act 11 of 2007 and Labour General Regulations No. 261 of 2008											x	x

2.1 Environmental Impact Assessment Regulations and Listed activities in terms of the Act No.7 of 2007.

Relevant provisions

Section 56 of the Environmental Management Act, 2007 (Act No.7 of 2007), the Minister has made the protocols for Environmental Impact Assessment as set out in the Schedule of Government Notice No. 30 (2012). These protocols necessitate that all developments/projects that have a detrimental effect on the environment must be accompanied by an EIA Under section 27 of the Environmental Management Act, 2007 (Act No. 7 of 2007), and after following the consultative process referred to in section 44 of that Act, the Minister lists in the Annexure to the above-mentioned Schedule, activities that may not be undertaken without an environmental clearance certificate. In both the Environmental Management Act and its guidelines, all activities that may not be undertaken without an environmental clearance are listed. The proposed project entails the following listed activities:

- ✓ *land use transformation, any activity entailing a scheduled process referred to in the Atmospheric Pollution Prevention Ordinance, 1976,*
- ✓ *to all process or activity which requires a permit, license or other form of authorisation, or the modification of authorisation, or the modification, or the modification of or changes to existing facilities for any process or changes to existing facilities for any process or activity which requires amendment of an existing permit, licence or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste activities as enshrined in the Environmental Management Act of 2007 and its regulations and*

These regulations are very important in the implementation of the project because this project fall under prescribed projects that has to have an Environmental Impact Assessment undertaken before the project is given a green light for implementation. This Act and its regulations should enlighten and guide this EIA process. Cost and benefits analysis of the project are weighed systematically to find suitability of the project in terms of economic, social and bio-physical environment.

These regulations also make it possible that both negative and positive environmental impacts are identified and weighed in their significance to determine whether the project should be

implemented. This is attained through the appointment of a dedicated EAP whom the project proponent chooses to do the preliminary Environmental Assessment and compilation of scoping report submitted accordance to the regulations. It mandates the Assessment process to be done in accordance with the EMA Act and its regulations.

In short this policy makes all other polices, legal and administrative framework to be considered before the project can be allowed to be implemented. The Environmental Impact Assessment (EIA) regulatory framework was published on the 18th of January 2012.

Relevance to the project

This Act and its regulations should enlighten and guide this EIA process.

2.2 Environmental Management Act (2007)

This act is the most powerful in the country when it comes to environmental management. Environmental Management Act supersedes all other environmental laws. The act was enacted to supervise, monitor, audit, control and govern the entire environment sector as well as to disseminate environmental awareness to the public. The Act is set, (To promote the sustainable management of the environment and the use of natural resources by establishing principles for decision making on matters affecting the environment; to establish the Sustainable Development Advisory Council; to provide for the appointment of the Environmental Commissioner and environmental officers; 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)

PART II of the ACT provides the Principles of environmental management

1. Principles of environmental management:

- (a) Renewable resources must be used on a sustainable basis for the benefit of present and future generations;
- (b) Community involvement in natural resources management and the sharing of benefits arising from the use of the resources must be promoted and facilitated;
- (c) The participation of all interested and affected parties must be promoted and decisions must take into account the interest, needs and values of interested and affected parties;

- (d) Equitable access to environmental resources must be promoted and the functional integrity of ecological systems must be taken into account to ensure the sustainability of the systems and to prevent harmful effects;
- (e) Assessments must be undertaken for activities which may have significant effects on the environment or the use of natural resources;
- (f) Sustainable development must be promoted in all aspects relating to the environment;
- (g) Namibia's cultural and natural heritage including, its biological diversity, must be protected and respected for the benefit of present and future generations;
- (h) The option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term must be adopted to reduce the generation of waste and polluting substances at source;
- (i) The reduction, re-use and recycling of waste must be promoted;
- (j) A person who causes damage to the environment must pay the costs associated with rehabilitation of damage to the environment and to human health caused by pollution, including costs for measures as are reasonably required to be implemented to prevent further environmental damage;
- (k) Where there is sufficient evidence which establishes that there are threats of serious or irreversible damage to the environment, lack of full scientific certainty may not be used as a reason for postponing cost-effective measures to prevent environmental degradation; and
- (l) Damage to the environment must be prevented and activities which cause such damage must be reduced, limited or controlled.

PART VII of the Act section 27: Projects for which environmental impact assessment required

The proposed development falls under listed activities and prohibition in respect of listed activities mentioned in Subsection 2 of the ACT. The following may include activities in respect of the proposed development of a new shopping mall and its convenience services:

Relevance to the proposed project

In relation to the proposed project development This Act and its regulations will be observed as a guide this EIA process.

2.3 Climatic Change Polices: National Climate Change Strategy & Action Plan 2013 – 2020

The climate change action plan which identifies Climatic Change as a critical threat to sustainable development. Therefore, it must be addressed in a holistic and multi-sector manner.

Relevance to the project

There are several activities to be done as a result of project development. In respect to the Climate Change strategy, appropriate measures to combat climate change have been implemented from the initial stages of project designing.

(a) Deforestation

The project activities are a threat to eighteen trees on the ERF 1278. Awareness was already done to the contractor on the proposed site not to cut avoidable trees. Project site is within a Rundu town light industrial proclaimed area of jurisdiction.

(b) Making use of green fuels

The proposed activities will strive to use green fuels with less carbon being emitted in the atmosphere in all phases of the project.

(c) Emissions of Green House Gases (GHGs)

The general physical layout of the proposed project minimizes all possible activities contributing to global GHGs emissions in either way.

2.4 United Nations Framework Convention on Climate Change

Relevant provisions

It is also vital to note that there are international conventions which aim to protect the environment. Namibia is a signatory to some of the conventions for example the 1992 United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC was adopted

to regulate levels of greenhouse gas concentration in the atmosphere, so as to avoid the occurrence of climate change on a level that would impede sustainable economic development, or compromise initiatives in food production. The Parties are to protect the climate system for present and future generations. The developed country Parties (and International Environmental Law from a Namibian Perspective 54 other Parties listed in annex I) commit themselves to take special measures to limit their anthropogenic emissions of greenhouse gases (GHGs), and to enhance the capacity of their sinks and reservoirs for the stabilization of such gases.

Relevance to the proposed project

All anthropogenic emissions of GHGs to be used during all phases will be strictly very limited.

2.5 National Heritage Act 27 of 2004

Relevant provisions

Section 48(1) states that “A person may apply to the Namibian Heritage Council (NHC) for a permit to practice any activities which might directly or indirectly disturb protected areas or National heritage

Relevance to the proposed project

In respect to the proposed project development site, there are no national heritage values on the project area and its nearby environs.

2.6 Soil Conservation Act 76 of 1969

Relevant provisions

The Soil Conservation Act makes provision for the prevention of soil erosion. It promotes the protection and up keeping the soil structure and vegetation and all natural resources in the soil of the Republic of Namibia.

Relevance to the proposed project

Tar and concrete paving would be done to avoid further disturbance. However, the landscaping will be done to make sure the drained water will join other municipal designed

waterways. Reforestation, planting of lawns and flowers will also conserve the soil structure if done on open spaces.

2.7 Water Act 54 of 1956

Relevant provisions

Certification in terms of Sections 21(1) and 21(2) of the Water Act is required for the disposal of industrial or domestic wastewater and effluent. Prohibits the pollution of underground and surface water bodies (S23) (1) and Accountability for costs to be met in remedying the environment as soon as project abandonment (S23 (2)).

Relevance to the proposed project

The protection of ground and surface water resources should guide the project construction phase. No Hazardous substances should be disposed in the municipal drainage system in any case. Accidental spillages will be attended to.

2.8 Labor Act (No 11 of 2007) in concurrence with Regulation 156, ‘Regulations Relating to the Health and Safety of Employees at a working place’.

Relevant provisions:

The section 135 (f) of the Ministry of Labor and Social Welfare specifies that “the steps to be taken by the owners of premises used or intended for use as factories or places where machinery is used, or by occupiers of such premises or by users of machinery about the structure of such buildings of otherwise to prevent or extinguish fires, and to ensure the safety in the event of fire, of persons in such building.

This act emphasizes and regulates basic terms and conditions of employment, it guarantees prospective health, safety and welfare of employees and protects employees from unfair labor practices.

Relevance to the proposed project

The project will offer a number of jobs to both semi-skilled and skilled locals and it will be the proponent or the contracted company’s responsibility to ensure that the workplace is safe

from Hazards. Occupational Safety and Health practitioners should be appointed to provide adequate safety and health trainings to key personnel. This will comprise put on suitable hazard management plans. A Safety Health and Environmental Wellness plan should be designed and strictly adhered to during the construction phase.

2.9 Public Health Act, May 2015

The Public Health Act makes provision for the control of activities and situations that have potential to affect public health. It establishes powers of health officials, local authorities and has several regulations made subservient to it, including the following regulation below. Part 4 of the Public Health Act (section 82) states that no person shall cause a nuisance or other condition liable to be injurious or dangerous to health. It shall be the duty of the general manager the local authorities, workers to make sure the place is kept tidy and clean and prevent nuisance. If satisfied of the existence of a nuisance the local authority shall serve a notice on the author of the nuisance to remove it within the time specified. If the author of a nuisance fails to comply with any of the requirements thereof within the specified time the court may by such order impose a fine on the person as per the provisions of subsection (3) of section 87.

Relevance to the project:

All waste generated subsequently from every operation of the project shall be disposed safely and no activities that can cause nuisance to be tolerated on site. During construction phase the contractor should provide relevant provision for solid waste and make sure it is disposed correctly. The operation phase of the project should engage in reducing, recycling and reusing activities which promotes a prolonged life cycle of PET packaging, reusing of metal containers and other cordial technologies of the environment to be engaged. All waste to be collected in accordance to town council waste collection procedures and disposed at the municipal dumping sites. Waste water effluent will be connected to existing municipal sewage drainage system to control the spread of diseases and a threat to public health.

2.10 Pollution and Waste Management Bill (draft)

Relevant provisions

The draft of Pollution and waste management bill clearly defines different types of pollution. It also notifies on how the Government intends to control different types of pollution to uphold a clean and safe environment for all.

The bill expresses the mandatory for everyone to comply with waste management to reduce pollution in any form. The failure to comply with the obligatory is considered as an offense which is punishable.

Relevance to the proposed project

The operations of the project should be done in accord with the pollution and waste management bill to reduce all types of pollution within the vicinity of the project site during construction and operation phases. Existence of a Solid Waste collection schedule by Rundu Town Council (RTC) for disposal at a fenced dumpsite located seven kilometers from the project site will help the premises to dispose solid waste generated from daily operational activities. This will only be archived when the proponent actively participate in support of the collection schedules. The proponent should also participate in recycling, re using and reducing waste generated by daily operations.

During operation phase of the proposed development activities, the municipality will be entitled to under taking refuse collections and provisions for solid waste receptacles to be put in place. Waste pickers will also be assigned on different intervals to make sure the surroundings are kept tidy.

2.11 Waste Management Regulations: Local Authorities ACT (1992)

Relevant provisions

Waste Management Regulation: Local Authorities of 1992 provides guidelines on waste management, it mandates the occupier of properties must provide a secure, hygienic, adequate and readily accessible waste storage place or area on the premises.

Relevance to the project

The waste management on site will be executed in an environmentally sound manner through the use of a registered existing dumping area. All solid waste generated during construction and operational phase will be handled and disposed using recommended skip plastic bins, bin

liners and to make sure right procedural disposing methods. Alternatively, a sustainable approach can be done, refer to the EMP for recommendations.

2.12 The Namibian Constitution Act, (1990)

Relevant provisions

The Constitution of Namibia encourages wise and sustainable use of resources. According to Article 95 of Namibia's Constitution it states that, the State shall actively promote and maintain the welfare of the people by adopting policies aimed at the maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources in a sustainable way for the benefit of all Namibians, both present and future. This article recommends that a relatively high level of environmental protection is called for in respect of pollution control and waste management.

Relevance to the proposed project:

The project will enable the full execution of right to practice any profession, or carry on any occupation, trade or business by availing necessary provisions such as practicing any profession, or carry on any occupation, trade or business in the country.

Through implementation of the environmental management plan will ensure conformity to the constitution in terms of environmental management and sustainability.

2.13 Hazardous Substances Ordinance No. 14 Of 1974

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

Relevance to the project:

Disposal and accidental spillages of hazardous substances will not be tolerated on site. Material Safety Data Sheets (MSDS) will always be referred to in case of hazardous substances handling and spillages.

2.3 Conclusion

These regulations should be observed throughout the project's life cycle. Any deviations from these policies, regulations and administrative frameworks may have catastrophic results to the environment (including man power) and the working environment. These laws bring about rational work ethics that support the protection of the environment. Strict monitoring by relevant authorities will bring about sound environmental practices. DU Preez Petroleum Cc shall enforce these regulations on its area of jurisdiction and constant monitoring will be done in form of inspections and audits.

CHAPTER 3: BASELINE ENVIRONMENT

3.0 Introduction

This Section provides the most important environmental characteristics of the study area and provides a statement on the potential environmental impacts. The conclusion in this chapter are grounded on baseline surveys, public consultation and desk reviews undertaken by the EIA team. The findings relate mainly to aspects of ecology, ambient air, soil, water and noise levels for the entire operation. Correspondingly, the economic and social environment was considered for this study. This Chapter outlines relevant environmental and social setup which was instrumental to compile this report from desktop researches, local authorities consultations and own observations.

3.2. Socio economic status

The socio-economic status in Rundu and the entire Kavango East region where the proposed project site is situated is characterized by Agro Marketing and Tourism industry. Large numbers of tourists are recorded to visit Rundu and its neighboring tourist's attraction areas. Rundu is a hometown to many woodcarvers and has a market near the open market place. Several local restaurants serve traditional food, including millet (*mahangu*), vegetables and fish from the Okavango River. It is also a transport networking village town from Angola, Botswana and Zambia and apart from that it is also a Kavango East regional administrative capital.

Rundu is growing rapidly. The 2001 census counted 36,964 inhabitants, and for the 2011 census it has climbed to 63,430. There are five tertiary Institutions and six secondary schools in the town.

3.2.1. Socio-Economic Benefits of the project

Globally, increasing unemployment rates, increasing figures of rural to urban migration, the project is of a vital role in the neighborhood as well as for the country. The proposed project has the potential to generate a number of employment opportunities directly and indirectly during the construction and operation phase.

More so, land development is the source of livelihood (directors and employers) of the owner(s) and partners hence such honest sources of livelihood should be encouraged and supported.

3.3. Climate

Rundu has a hot semi-arid climate ([Köppen: BSh](#)), with hot summers and relatively mild winters (with warm days and chilly to cool nights). Even though it has a hot semi-arid climate, the area experiences high diurnal temperature variation during the winter with average high temperatures at roughly 26 ° C (79 ° F) and average low temperatures at 6 ° C (43 ° F). This large swing in daily temperature is more commonplace among areas with cold semi-arid climates. During the summer, the diurnal temperature variation is less pronounced. The average annual precipitation is 571 mm (22 in).

3.4. Biological Environment

Fauna and Flora

ERF 1278 is characterized by little grasses and eighteen big trees. Plate 3 below shows the outlook of flora on site.



Vegetation type of any area is influenced by both soil type and the climate conditions of the area. The Kavango region is home to a more diverse community of plants and animals than most other areas in Namibia. Most of the diversity in the Kavango region is linked to the variety of habitats along and near the Okavango River.

Plate 2: Trees on site.

ERF 1278 supports less grass and eighteen (18) established trees namely, (in their local names) *Ugongo*, *Musu*, *Mupupu*, *Mugoro*, *Mupanda* and *Karanda mbuwo*. There was no

grass observed on the project site since the proponent was frequently maintaining the area due to an invasive flower species which were in abundance.

3.5. Topography

The planning area is relatively flat and lies at about 1,095 meters above the sea level. Rundu town is relatively close to the Okavango River. There are no significant hills and the area is relatively flat making it easy and cost effective for development.

3.6. Geology and Soils

The surrounding soils are light grey and brown, sandy loamy supporting less vegetation. The proposed project site is located in an urban set up under the local authorities of Rundu Municipality. Flora and Fauna is limited due to land clearance towards urbanization project. Plate 4 below shows the proposed project site soil type.

Soils in Kavango Region are completely dominated by sand, especially fine wind-blown sands deposited as a mantle across the region during much drier time's long ago. The loose sands also known as the Kalahari sand are usually as deep as one (1) meter. Apart from the sand, which generally makes up than 70% of the body of the soil, the Kavango region also consists of less than 10% of the soil consists of clay and silt. The sand texture allows for water to drain away rapidly, leaving very little moisture at depths to which most plant roots can reach. The porous sand also holds very few nutrients, and the loose structure of sand also holds very few nutrients, and the loose structure of the sand means there is very little run-off and soil erosion.



Plate 3: Soil type on the project site

3.7. Hydrology (surface and ground water)

The soil around the site carries underground porous aquifers which are source underground water.

3.8. Services and Infrastructure

Rundu has the following services: Potable water and water reticulation system, water borne sanitation as well as electricity. These bulk services will be extended from the existing municipal network to newly proposed project development area.

3.8.1 Infrastructure

All structures to be established in accordance to the architectural designs and municipality regulated structures. Monitoring and supervision will be done frequently to ensure quality controlling.

3.8.2 Roads

The proposed project site is connected to the existing road and street network. There four main nearby roads form an intersection of a four-way junction with the Independence street upgraded to bitumen and the other unnamed road still having gravel.

3.8.3 Water

The proposed project will be connected to the existing bulk water service network of the Council. A site visit witnessed that the connection was already in the process to bring water to he proposed project site. Plate 5 below is the picture taken during the field work.



Plate 4: Portable water connection made to the existing bulk water services

3.8.4 Sewerage

Currently the existing developed ERF in the Industrial area are using septic tanks and some are connected to the main sewer line for the municipality.

3.8.5. Solid Waste Management System

An existing dumpsite will service the proposed development in all phases. The existing dumping site is located to the western part of the proposed project site approximately *six (6)* kilo meters (km) from the proposed site. The dumpsite is well fenced, presence of waste sorting workers was witnessed and a waste compactor. Rundu Town council has a dedicated team which strive to maintain the standards of solid waste status within the council's area of jurisdiction.

CHAPTER 4: PUBLIC AND STAKEHOLDER CONSULTATIONS

4.1. Introduction

This chapter gives a brief summary of the interested, affected and stakeholders reached by the EIA team. A Background Information Document and the layout plans were made accessible upon request.

4.2. Public Participation for EIA

The public participation process was undertaken in accordance with the requirements of the Environmental Management Act of 2007 and its guidelines. The process is mandatory and it is very important as it serves various purposes. It helps in sustainable project implementation and decision making processes giving equitable contributions towards project design.

4.3. Methodology

A combination of methods was used to solicit views and concerns of the different stakeholders. The methods used include key informant interviews, informal interviews and semi-structured questionnaires. Tailor made questionnaires were designed for each key informant. The key informants included the responsible authority (Rundu Town council) and neighbours to the project site. The general questionnaire was designed to solicit information relating to respondent's personal information, views and opinions regarding the shopping mall establishment. This helped the assessment team to structure up correctional measures that can be taken to mitigate the negatives and the recommendations on the proposed action.

4.4. Notification of Public and Stakeholders

The involvement of the public was done prior to the fulfillment of the EIA Act and the comments were recorded electronically and manually.

4.4.1. Background Information Document

A Background Information Document (BID) for the proposed developments was made available during the public consultations. It was distributed upon request by interested parties. Refer to the list of Appendices, BID designed for the proposed project and was made available to interested and affected parties.

4.4.2. Newspaper adverts

Notification of interested and affected parties was done through the newspapers twice in the New Era and the Southern Times. This was done prior to the fulfillment of the EMAct. Public notices were placed on the weekly newspapers dated 7th to 13th and 14th to 20th of February 2020.

4.4.3. Site and Public notices



placed on a public place in town

Site notices were placed all around the project site, neighboring notice boards and some public places calling interested and affected members to attend a public meeting which was scheduled on the 21st of February 2020. Plate 6 below shows one of the public notices

Plate 5: Public notice placed on one of the busiest malls in town

4.5. Public meeting

A public meeting which was scheduled to be hosted on site on the 21st of February 2020 was not attended by any stakeholder except the project proponent, the EIA team and employment seekers.

4.6. Public and Stakeholders comments

Some of the concerns which were communicated through telephone calls and interviews conducted during a random sampled questionnaire distribution to the neighboring residents includes employment, solid waste, and land degradation issues. Their concerns were recorded and all encompassed in the EMP accompanying this Environmental Assessment scoping report. The assessment team extended the deadline for the submission of comments till the 1st of March 2020.

4.6.2. Challenges

The consultation process was very time consuming. It took the consultant a lot of time to complete the consultation process especially at door to door neighbour visits. The public meeting was not attended by I&APs except job seekers whose intentions were to bid for the construction tenders.

4.7. Conclusion

The public and stakeholder consultations were done in respect to the EMAct and the outcomes gave a green light for the project implementation that is if the EMP designed by Conserver Investment cc is instrumental.

CHAPTER 5: ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS ASSOCIATED WITH THE PROPOSED PROJECT IMPLEMENTATION

5.0 Introduction

The establishment of a shopping mall project shall result in both positive and negative impacts to the socio – economic and bio – physical environment. This section shall state the anticipated impacts that would emanate from planning, construction and operation phases of the proposed. The project will be divided into three important phases, where potential environmental impacts will be anticipated. The fourth phase (decommissioning phase of the project) is far-fetched and very difficult to project but the impacts will be similar to those of the construction phase. The potential impacts can be interpreted as physical or socio-economic and they can be interpreted as positive or negative. This section shall explore on the likely impacts of the proposed mall project.

5.1 Project scope of work

The project process will be in carried out in four separate phases that include:

- Planning Phase
- Construction Phase
- Operational Phase

5.2 Planning phase

This phase involves the pegging of the area, initial prospecting work, and Infrastructure developments. This activity is mostly done in the offices aiming to acquire the necessary documentation to commence with the proposed construction project. The EIA process is also held within this phase.

5.3 Construction phase

This phase shall involve the trenching of sewerage drainage system, water pipes and foundation. The trenching process is likely to use heavy machinery like excavators, tipper trucks, and jack hummers among others. The phase will support the initial start to the

construction work enabling the contractor to employ a large number of construction personnel (skilled), scaffolding, concrete works, carpentry work, brick laying, welding, plastering among other activities will form the scope of work. Negative impacts which are most likely to be encountered during this phase of the project are work related injuries, dust emissions, noise, littering/ land pollution and positively the construction phase will give birth to employment opportunities.

5.3.1 Health and Safety

It is mandatory that a SHE officer to be appointed for hazard identification and control on site. A site specific SHEW Plan to be used to combat occupational accidents. The project manager and the Site manager must work collectively with the SHE officer to ensure Occupational wellness on site. Signs, induction, ongoing hazard(s) and control(s) will be addressed by safe work practices, job hazard analyses, safe operating procedures, and the Pre-Job Safety Instruction Program contained within the SHE Policy.

5.4 Operation phase

The operation phase of the project will encompass day to day operations of a shopping mall. Public toilets, taxi rank, ATMs, fast foods outlets and clothing, textile and beauty shops will be operationalized as part of the operation phase. Hazards or negative impacts most likely to be encountered during this phase are fire hazards, theft/ robberies, work related injuries, littering, waste water effluent bursts/ leakages and electric shocks. The proposed project will also bring more of the good to the community during its operation phase. The shopping mall operation phase will create employment, revenue generation, infrastructural development and societal benefits.

5.5 Decommissioning Phase

This phase will come at the end of the project. Though the expected to go for a longer period of over hundreds of years. The structure will be constantly maintained and avoiding wearing and depreciation. The decommissioning phase will involve the demolition of infrastructure, removal of auxiliary structures. It is also aimed to rehabilitate the area.

5.1 Anticipated impacts

The following impacts are likely to emanate from the proposed shopping mall project:

- Soil erosion/ land degradation
- Land pollution/ littering
- Air pollution (noise and dust)
- Underground water pollution
- Increased surface runoff
- Change in water table patterns
- Socio-Economic impact
- Illegal activities
- Occupational safety and health
- Landscape and visual changes
- Noise pollution

5.2.1 Soil erosion/ land degradation

Soil erosion is, at its core, a natural process when topsoil, which is the upper-most layer of the ground, is worn away due to factors such as water, wind and the use of heavy machinery. The construction phase of the project is characterized with excavations and heavy trucks movement. This is most likely to make the project site susceptible to soil erosion. However, the proponents must employ ways of protecting soil erosion such as using proclaimed paths, dust suppression using water and re filling borrowed pits.

Mitigation

The project proponent should make sure to use land according to its capability, protect the soil surface with lawns/ grasses, afforestation and education and awareness, control runoff before it develops into an erosive force, connecting new drainage system to existing municipal culverts. Working on the soil while it's not too dry will help preserve the soil structure.

5.2.2 Land pollution/ littering

Land pollution is most likely to be a concern during the construction and operation phases. Solid waste generated on site to be environmentally managed. Sources of waste are from materials, packaging and littering from public nuisance. Uncontrolled waste might result in land pollution.

Mitigation

All generated waste on site should be managed in an environmentally sound manner. The use of skip containers and disposal schedules should be supervised. During construction, the contractors should have ablution facilities for construction workers and visitors to avoid bush squatting. These facilities could be hired or privately owned to service the construction phase.

5.2.3 Air pollution (noise and dust)

Noise and disturbance from construction works such as heavy equipment and haulage vehicles is expected. Air pollution by dust from generated from earthmoving machinery. Materials like sand and cement during construction and heavy machinery are a source of dust and noise.

Mitigation

Sensitization and awareness on noise pollution control including restricted construction work hours. All the construction works should be covered to ensure protection of the public and working hours should be restricted to 8am to 5pm. All workers on site should put on safety wear like masks to protect themselves from dust emission during working hours. Water shall be sprinkled on all dusty surfaces during construction.

5.2.4 Underground water pollution

Sources of potential underground water pollution might be directly or indirectly linked to project activities. Diseases such as hepatitis and dysentery may be caused by contamination from septic tank waste if waste water is not connected to the municipal WWTP. Poisoning may be caused by toxins that have leached into underground water supplies/ aquifers. Any possibility of ground water pollution will cause non-point source of pollution in the long run.

Mitigation

The initiative to reduce surface runoff by introducing lawns/ revegetating the surrounding places should make use of native plants that does not need more water and fertilizers which in the long run will likely to cause leaching of toxic chemicals/ nutrients. Use of organic manure will be strongly encouraged as well as education and awareness

5.2.5 Increased surface runoff

Surface runoff is water from rain, snowmelt, or other sources that flows over the land surface, and is a major component of the water cycle. Runoff that occurs on surfaces before reaching a channel is also called overland flow. In soil science, Horton overland flow describes the tendency of water to flow horizontally across land surfaces when rainfall has exceeded infiltration capacity and depression storage capacity.

Mitigation

Mechanization of water harvesting technologies, storm drains mechanizations and planting lawns will help reducing impact of increased surface runoff.

5.2.5 Change in water table patterns

The existing water table patterns will be changed as a result of proposed activities. The existing yields of underground aquifers recharging local water sources is most likely to change as a result of reduced infiltration at that particular place where a foreign structure will be introduced.

Mitigation

Practice afforestation programs to promote interception as well as infiltration. Water harvesting programs will also reduce the loss of water through surface runoff.

5.2.7 Socio-Economic impact

Social impacts

Such investments like the one in question allow more social networks as the developer try to serve a wider area cross section of Kavango East. There will be improved social wellbeing of the area through better infrastructure and service utilities. This has positive impact in improving harmony in development between communities and hence reduction in hostilities common in most local areas. There is potential development of Small and Medium Enterprises (SMEs) with enhanced participation of local communities taking advantage of business opportunities presented by the development.

The proponent is committed to plough back proceeds into the community through various ways. The project will enhance maintenance works to maintain developed infrastructure in a good state of repair, through road repairs and upgrading. The proponent will give preference

to local contractors and suppliers of goods and services in awarding contracts or supply tenders.

Throughout the project life cycle, the proponent will be committed to contribute to community development and social initiatives in collaboration with the local community and other interested stakeholders. The proponent shall work closely with relevant stakeholders in promoting conservation of natural resources.

Economic Impacts

The project when fully operational will provide job opportunities during construction and operation to some residents of Rundu and entire Kavango East. Business opportunities for local suppliers will be enhanced resulting in improved local economic development. Other ripple benefits include; increased revenue for national development through; Development Levy, Corporate Taxes, Sales Tax and Value Added Tax (VAT) payable by the developer during construction, operation and decommissioning and its business networks and associates. The development will place national commodities on the international map through provision of a wide variety of packages to suit each category of international, regional and local guests.

The proposed activity will provide variety, convenient and reliable critical commodity for exchange, commerce and industry. Enhanced entrepreneurship through the supply value chain including food supply, printing and stationery supplies, provision of transportation services, water supply and property development, motor vehicle and equipment maintenance and repair works; locally made handicrafts and construction works. The project has therefore positive economic impacts which enhances the local area's status in terms of infrastructural development in Rundu and has multiplier effects in attracting other investments in the area.

5.2.8 Illegal Activities

The proposed project is most likely to be a source of some of illicit dealings like drug abuse, increase in crime rate, prostitution, Sexually Transmitted Diseases (STDs), decay of moral behaviour. These illegal associations will be triggered by temporary income earners and the ability to circulate money within the neighbouring communities.

Mitigation

A thorough code of conduct for employees will be developed. Establishment and rigorous enforcement of rules and disciplinary procedures, vetting potential workers for criminal records and use of CCTV Cameras on proposed site.

5.2.9 Occupational Safety and Health hazards

The employees are the most important asset of any organization and their health and safety is of utmost importance. The construction of the shopping mall might include working with heavy power machinery, use of potentially dangerous equipment, working with health threatening substances, injuries, prolonged exposure to noise, static postures, and agronomic hazardous environments. The day to day running of the proposed shopping complex is likely to pose human exposure to potentially fatality incidents, robbery and prolonged working hours

Mitigation

The scoping report recommends that the project proponent should come up with a construction Safety, Health and Environmental Wellness Plan (SHEW Plan) to support the contents of this EMP on Safety and Health related issues. The SHEW Plan must be strongly adhered to and monitoring should be done with certified/ experienced Safety and Health personnel. Employees should have proper PPE at all times.

5.2.10 Landscape and visual changes

The environmental setup of the proposed site for the shopping mall is likely to be altered during site construction and plant equipment installation phase as new infrastructure to the area this damages the natural or current view of the project area.

Mitigation

Use an architectural design to blend' with the landscape and replant disfigured surfaces.

5.3 Methods used in identifying potential impacts.

An analysis of project activities and their potential effects on the baseline information presented in chapter five was done. Identification of impacts was done through the use of checklists as provided in the Environmental Impact Assessment guidelines. The impact significance was determined using the Risk Analysis Tool (table 5) combined with the Likelihood Evaluation Criteria (Table 4) for soil, water, biodiversity and socio-economic

assessment. This EIA report focuses on the construction phase and presents environmental impacts on the biophysical and socio-economic components.

Table 3: Likelihood evaluation criteria

		LIKELIHOOD RATING		
		A	B	C
CONSEQUENCE RATING	1	Negligible with minor impacts (1A)	Negligible with minor impacts (1B)	Negligible with minor impacts (1C)
	2	Negligible with minor impacts (2A)	Minimize impacts (2B)	Minimize impacts (2C)
	3	Minimize impacts (3A)	Minimize impacts (3B)	Minimize impacts (3C)
	4	Minimize impacts (4A)	Minimize impacts (4B)	Unacceptable (4C)
	5	Minimize impacts (5A)	Unacceptable (5B)	Unacceptable (5C)

Table 4: Risk analysis tool

KEY				
CONSEQUENCES		LIKELIHOOD	ACCEPTABILITY	Overall Significance according to Acceptability
Beneficial	3-Moderate	A-Low	Negligible with minor impacts	Insignificant
1-Negligible	4-Significant	B-Medium	Minimize impacts	Significant
2-Minor	5Catastrophic	C-Medium	Unacceptable	Significant

Another method that was used to identify the potential environmental impacts for the proposed shopping mall development project was the Avoidance of Impact Chart (Plate 6) below. The chart helps in the identification of potential negative environmental effects and it

advocates for the avoidance, minimization and compensation of negative impacts during the project phases (clearing, construction and operation).

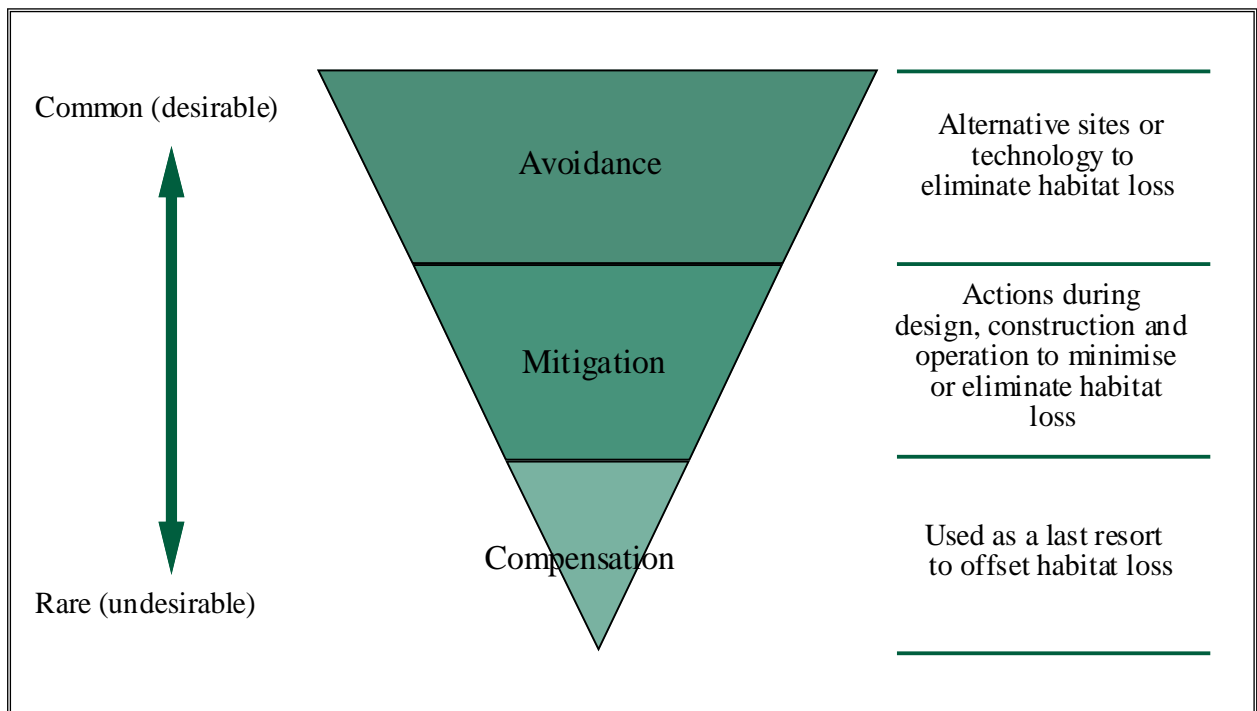


Plate 6: Framework for impact mitigation

The negative impacts are either avoided, minimized or compensated and in this case, the Environmental Management Plan has clearly proposed actions that will deal with all the identified negative impacts on the soil, water (surface and underground), ambient environment and on the society. Not all negative impacts can be avoided but some can be minimized and some can be compensated. Examples include vegetation clearance and loss of aesthetic value. These cannot be avoided but they can be minimized depending on the size of the area needed for construction and in this case the proposed number of buildings and the sizes of the layout plans.

5.4 Impact Identification and Assessment

The screening criterion used for rating the significance of impacts is given in the likelihood matrix or risk analysis matrix. During the EIA process of impact identification, the project components, project phases, project aspects and type of impacts (based on frequency, reversibility and severity) were considered to ensure comprehensiveness.

Table 5: Screening consequence level criteria

RATING	DESCRIPTION OF IMPACT
Beneficial	Changes that result in a net positive impact to an ecosystem, environment or population.
1.Negligible	Short term changes in an ecosystem that are unlikely to be noticeable (i.e. fall within the scope of natural variation). Area of effect is restricted to the immediate vicinity of the source. Has no discernible effect on the environmental resource as a whole and is likely to go unnoticed by those who already use it. Negligible impact to a site of social and/or cultural importance.
2.Minor	Minor adverse changes in a Valuable Ecosystem Component (VEC). Changes will be noticeable but fall within the range of normal variation and be typically short-lived, with unassisted recovery possible in the near term. However, it is recognized that a low level of impact may remain. Medium term impact (1-5 yrs.) in an area that does not encompass a VEC or whose impact is highly localized within a VEC. Long term impact over a discrete, small area which does not support a VEC. May be noticed but does not affect the livelihood of those utilizing a resource. Minor impact to a site of social and/or cultural importance.
3.Moderate	Moderate adverse changes in a VEC or area that supports a VEC population. Changes may exceed the range of natural variation though potential for recovery within a few years without intervention is good. Area of effect encompasses an area that supports either a moderate or minor proportion of a VEC population or ecosystem.
4.Significant	Long term or continuous impact resulting in substantial adverse changes in a VEC, well outside the range of natural variation. Unassisted recovery could be protracted. Area of effect is extensive and/or encompasses an area that supports a statistically significant proportion of a VEC population or ecosystem. Has a measurable effect on the livelihood of those using a resource over a period of months. Significant damage / impact to a site of social and/or cultural importance.
5.Catastrophic	Massive impact over a large area resulting in extensive, potentially irreparable damage to a VEC. Has a measurable effect on the livelihood of those using a resource over a period of years. Massive impact over a large area resulting in extensive, potentially <i>irreversible</i> damage to a site of social, historical and/or cultural importance.

5.5 Rating impact significance

This section has the rated anticipated significant negative impacts tabulated. The ratings are given for the design/pre-construction, construction and operation phase.

Table 6: Pre-construction phase impacts

Impact	Consequence level					Likelihood of occurrence			Acceptability			Overall significance of impacts	
	Negligible	Minor	Moderate	Significant	Catastrophic	Low	Medium	High	Negligible	Minimize	Unacceptable	Insignificant	Significant
	1	2	3	4	5	A	B	C					
Loss of vegetation cover	X					x			x			x	
Contamination of soil		x				X			x			x	

Table 7: Construction phase impacts

IMPACT	Consequence level					Likelihood of occurrence			Acceptability			Overall significance of impacts	
	Negligible	Minor	Moderate	Significant	Catastrophic	Low	Medium	High	Negligible	Minimize impacts	Unacceptable	Insignificant	Significant
	1	2	3	4	5	A	B	C					
Ground-water Pollution										x			
Land degradation		x				x				x			x
Occupational Safety and Health of workers			x				x			x		x	
Air pollution noise/ dust			x				x			x			x

Table 8: Operation phase impacts

IMPACT	Consequence level					Likelihood of occurrence			Acceptability			Overall significance of impacts	
	Negligible	Minor	Moderate	Significant	Catastrophic	Low	Medium	High	Negligible impacts	Minimise impacts	Unacceptable	Insignificant	Significant
	1	2	3	4	5	A	B	C					
Introduction of invasive species for beautification		x				x			x			x	
Landscape changes		x				x			x			x	
Increased Surface runoff			x				x			x		x	
Increased noise levels			x				x			x		x	
Air pollution				x				x			x	x	
Accumulation of waste				x			x			x			x

CHAPTER 6: ENVIRONMENTAL MANAGEMENT PLAN

6.1. Introduction

This section details the various strategies that can be employed by the project proponent to reduce the risk of impacts occurring during the course of this project (construction and operation of a shopping mall). This Environmental Management Plan is a strategic design for civil works here being proposed to establish a new shopping mall on ERF 1278, Extension 4 of Rundu Industrial area. This EMP was designed to provide approaches to sustainability, monitoring and auditing as stipulated by the EMA ACT of 2007. Mitigation and management measures that are going to be employed during the course of the project are highlighted in this Environmental Management Plan.

6.2 Location

DU Preez Petroleum Cc intends to establish a new shopping complex/ mall on ERF 1278, EXTENSION 4 of the Industrial area of Rundu town lands. The industrial area of Rundu town lands is located to the North western direction of the Central Business District (CBD) and has a total allocated land of 2757 square meters (m²). Due to a high demand of land for housing purposes, the town Council approved the development of newly established Sauyemwa suburbs; extension 31 and 32 to the Northern part of the CBD and these will be in favour of the proposed project. The portion in question has a capacity to support the proposed shopping mall and associated activities. Future plan to establish a service station and a taxi rank on the same portion is also under way.

6.3. Objectives of the Project

The aim of this project is to establish a new shopping complex on portion 1278, Extension 4 of Rundu town lands. The objectives of the project by DU Preez Petroleum Cc are to:

- (a) To address the rapid growing population and urbanization challenges with in Kavango east and beyond
- (b) Improve the living standards of local people by creating new opportunities for business agglomeration since tourism industry is lucrative in the region, and
- (c) Ensure a sustainable project development and increase profitability.

6.4. A Summary of Anticipated Project Impacts

Establishment of a new shopping complex/ mall on ERF 1278 EXTENSION 4 of the Industrial area of Rundu town lands is most likely to trigger a number of socio economic and environmental impacts. The Consultants recommend the adherence to the Impact Management Plan (IMP) drafted as part of this scoping report to reduce detrimental or irreversible impacts. Failure to do so could be punishable in accordance to the EMA ACT OF **2007** and its regulatory framework.

1. Soil erosion/ land degradation
2. Land pollution
3. Air pollution (noise and dust)
4. Underground water pollution
5. Increased surface runoff
6. Change in water table patterns
7. Socio-Economic impact
8. Illegal activities
9. Occupational safety and health
10. Landscape and visual changes

Table 9: Socio economic EMP

Aspect	Potential Impact	Mitigation and Management Measure	Indicator	Implementing Agency	Monitoring Agency	Frequency
Employment	Employment opportunities and increased disposable income for locals. During all project life cycle	About 80% of labour force required is going to be from the local community this will create a conducive working environment and boost the welfare and improved standard of living to the locals.	Employment of locals Increased GDP per capita income Social wellbeing	Proponent Developer/ Contractor	Ministry of Labour.	Throughout the project life span
Business	Stimulation of business diversification and growth	Proper planning should be taken into consideration with assistance from the local authorities.	Growth of business and diversification linked to infra structural development	Proponent Developer	Ministry of Industry, Trade and Commerce,	Throughout the project cycle
Theft/ Illicit dealings	Drug abuse Increase in crime rate Prostitution Sexually Transmitted Diseases Decay of moral behaviour	A thorough code of conduct for employees will be developed. Establishment and rigorous enforcement of rules and disciplinary procedures. -Vetting potential workers for criminal records. CCTV Cameras on site	Availability of code of conduct. Strict adherence to rules and disciplinary procedure Vetting prospective workers.	Proponent Developer	NAMPOL, Proponent/ Developer, Security Department/ Local neighbourhood	Daily checks Throughout the project cycle

6.5. Occupational Safety, Health EMP

Occupational Health and Safety should be given priority during the project implementation. The construction of the shopping mall might include working with heavy power machinery, use of potentially dangerous equipment, working with health threatening substances, injuries, prolonged exposure to noise, static postures, and agronomic hazardous environments. The day to day running of the proposed shopping complex is likely to pose human exposure to potentially fatality incidents, robbery and prolonged working hours. The scoping report recommends that the project proponent should come up with a construction Safety, Health and Environmental Wellness Plan (SHEW Plan) to support the contents of this EMP on Safety and Health related issues. The SHEW Plan must be strongly be adhered to and monitoring should be done with certified/ experienced Safety and Health personnel.

Table 10: Occupational Safety, Health and the Environmental Management Plan

Aspect	Potential Impact	Mitigation and Management Measure	Indicator	Implementing Agency	Monitoring Agency	Frequency
Occupational Safety	<ul style="list-style-type: none"> •Injuries to workers. •Ergonomics hazards •Road Accidents •Musculoskeletal Disorders •Pains and needles •Saw dust inhalation •Robbery •Fire outbreaks 	<ul style="list-style-type: none"> •Safety training, Education and awareness •Provide adequate personal protective equipment (ppe) •Conducting pre job trainings •Hiring experts •CCTV monitoring •Conducting SHE talk/ tailgate during construction phase 	<ul style="list-style-type: none"> •Construction work place hazards •Day to day heavy equipment use •Use of Hazardous substances •Working with petty cash 	Proponent / Developer Contractor Safety Officer/ site manager	Ministry of Labour. MET	Throughout the project life span

Aspect	Potential Impact	Mitigation and Management Measure	Indicator	Implementing Agency	Monitoring Agency	Frequency
Occupational Health/ Sanitation	Health and sanitation of workers and visitors	First Aid kit. Ablution facilities. Waste management and disposal must be done correctly.	Operation phase includes food handling storage and distribution Generation of waste	•Proponent / Developer •Contractor •Safety Officer/ site manager	Ministry of Labour. MET	Throughout the project life span
Diseases	Potential spreading of HIVS / AIDS and other communicable diseases.	Minimizing number of non-local employees. Provision of condoms and awareness campaign to the employees on morality, ethics and issues on HIV/AIDS and STI's.	Employment of local communities for less-specialised jobs Provision of free condoms. AIDS awareness campaigns	Proponent / Developer	Ministry of Health, Proponent / Developer,	Throughout the project cycle

6.6. Bio-Physical EMP

6.6.1. Soil erosion

Soil erosion is, at its core, a natural process when topsoil, which is the upper-most layer of the ground, is worn away due to factors such as water, wind and the use of heavy machinery. The construction phase of the project is characterized with excavations and heavy trucks movement. This is most likely to make the project site susceptible to soil erosion. However, the proponents must employ ways of protecting soil erosion such as using proclaimed paths, dust suppression using water and re filling borrowed pits.

Table 11: Soil erosion Management Plan

Environmental components	Potential impacts	Potential source of impact	Controls through EMP and Design (Remedial measures)	Responsibility
Soil erosion/ land degradation	<ul style="list-style-type: none"> • Reduced ability of soil to hold water and nutrients • Exposure of subsoil which has poor physical and chemical properties 	<ul style="list-style-type: none"> • Soil compaction • Reduced biomass production • Loss of soil structure • Poor internal drainage • Salinization and soil acidity problems due to hazardous substances spillages 	<ul style="list-style-type: none"> • Use land according to its capability • Protect the soil surface with lawns/ grasses • Afforestation and education and awareness • Control runoff before it develops into an erosive force • Connecting to existing municipal culverts • Working on the soil while it's not too dry 	<ul style="list-style-type: none"> • Contractor • Project Proponent • Site Manager/ SHE officer • Rundu Town Council

6.6.2. Land pollution

It is the deposition of solid or liquid waste materials on land or underground in a manner that can contaminate the soil and groundwater, threaten public health, and cause unsightly conditions and nuisances. The Public and Environmental Health Act, Act No 1 of 2015 of the Republic of Namibia defines “Hazardous waste” as waste which, because of its quantity concentration or characteristics, may be hazardous to human health or the environment when improperly treated, stored, transported or disposed. The summary of effects and solutions to land pollution likely to be encountered during the project lifespan can be explained by table 4 below.

Table 12: Land pollution management Plan

Environmental components	Potential impacts	Potential source of impact	Controls through EMP and Design (Remedial measures)	Responsibility
Land pollution	<ul style="list-style-type: none"> • Loss of ecosystems • Reduce the aesthetic value of the land • Highly imbalanced rain cycle • Contaminated soil and underground water by heavy metals pose health threats • Suffocation of pests/ kids with improperly plastic waste. 	<ul style="list-style-type: none"> • Domestic waste • Construction waste/ rubbles • Day to day unpacking of goods • Public littering 	<ul style="list-style-type: none"> • Efficient utilisation of resources and reducing waste generation • Proper garbage disposal (using onsite bin liners, skip bins) • Recycling recyclable materials • Education and awareness • Spillage/ anti littering blitz/ cleaning ups schedules 	<ul style="list-style-type: none"> • Contractor • Project Proponent • Site Manager/ SHE officer • Rundu Town Council

6.6.3. Air pollution

Air pollution refers to the release of pollutants into the air that are detrimental to human health and the planet as a whole. The Namibian EMA Act of 2007 has a mandate to protect public health by regulating the emissions of these harmful air pollutants. Table 5 overleaf provides the potential impacts of air pollution as well as the solutions to this problem.

Table 13: Air pollution Management Plan

Environmental components	Potential impacts	Potential source of impact	Controls through EMP and Design (Remedial measures)	Responsibility
Air pollution	<ul style="list-style-type: none"> • Changes in lung function and asthma attacks • Respiratory and cardiovascular hospitalisations • Mortality • Headaches, nausea and allergic reactions 	<ol style="list-style-type: none"> 1. Mobile sources such as cars, trucks and generators etc. 2. Solid waste burning 	<ul style="list-style-type: none"> • Use of renewable fuel and clean energy production • Energy conservation and efficiency • Eco-friendly transportation • Green building • Education and awareness on solid waste disposal 	<ul style="list-style-type: none"> • Contractor • Project Proponent • Site Manager/SHE officer • Rundu Town Council

6.6.4. Underground water pollution

Groundwater contamination occurs when man-made products such as gasoline, oil, road salts and chemicals get into the groundwater and cause it to become unsafe and unfit for human use. Drinking contaminated groundwater can have serious health effects.

Diseases such as hepatitis and dysentery may be caused by contaminated ground water. Poisoning may be caused by toxins that have leached into well water supplies. Wildlife can also be harmed by contaminated groundwater. Other long term effects such as certain types of cancer may also result from exposure to polluted water. Table 6 overleaf shows the impacts as well as the solutions to underground water pollution.

Table 14: Underground water pollution Management Plan

Environmental components	Potential impacts	Potential source of impact	Controls through EMP and Design (Remedial measures)	Responsibility
Underground water pollution	<ul style="list-style-type: none"> • Diseases such as hepatitis and dysentery may be caused by contamination from septic tank waste • Poisoning may be caused by toxins that have leached into well water supplies. • Wildlife can also be harmed by contaminated groundwater 	<ul style="list-style-type: none"> • Landfills • Uncontrolled Hazardous Waste spillages • Use of compound fertilizers 	<ul style="list-style-type: none"> • Use of native plants that does not need more water and fertilisers. • Use of organic manure • Education and awareness 	<ul style="list-style-type: none"> • Contractor • Project Proponent • Site Manager/ SHE officer • Rundu Town Council

6.6.5. Increased surface runoff

Surface runoff is water from rain, snowmelt, or other sources that flows over the land surface, and is a major component of the water cycle. Runoff that occurs on surfaces before reaching a channel is also called overland flow.

In soil science, Horton overland flow describes the tendency of water to flow horizontally across land surfaces when rainfall has exceeded infiltration capacity and depression storage capacity. Table 7 overleaf shows the impacts of surface runoff and the solutions that can be implemented by the proponents.

Table 15: Increased surface runoff Management Plan

Environmental components	Potential impacts	Potential source of impact	Controls through EMP and Design (Remedial measures)	Responsibility
Increased Surface runoff	<ul style="list-style-type: none"> • Aesthetic impact on water resources • Land degradation/ washing away of top soil • Human health risk through transportation of water pollutants into water sources. • Ecosystem disturbance 	<ul style="list-style-type: none"> • Raindrop compaction • Paved surfaces • Roofs and gutters 	<ul style="list-style-type: none"> • Mechanization of water harvesting technologies • Storm drains mechanizations • Planting lawns 	<ul style="list-style-type: none"> • Contractor • Project Proponent • Site Manager/ SHE officer • Rundu Town Council

6.6.6. Change in water table patterns

Water table also called Groundwater Table, upper level of an underground surface in which the soil or rocks are permanently saturated with water. The water table separates the groundwater zone that lies below it from the capillary fringe, or zone of aeration, that lies above it. Table 8 overleaf shows the impacts of change in water table patterns as well as the solutions to this problem.

Table 16: Change in water table patterns Management Plan

Environmental components	Potential impacts	Potential source of impact	Controls through EMP and Design (Remedial measures)	Responsibility
Change in water table patterns	<ul style="list-style-type: none"> • Water table level drops • Shortage of safe water for domestic use since ground water is regarded the safest water to drink. 	<ul style="list-style-type: none"> • Deforestation • Erosion • Climate change/ global warming 	<ul style="list-style-type: none"> • Practice afforestation programs to promote interception as well as infiltration. • Water harvesting programs 	<ul style="list-style-type: none"> • Contractor • Project Proponent • Site Manager/ SHE officer • Rundu Town Council

6.7. Occupational Health and Safety Monitoring Program

The occupational health and safety monitoring program should include:

- ✓ Surveillance of the working environment:

DU Preez Petroleum cc 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.

6.8 Emergency Preparedness and Response Plan (EPRP)

6.8.1 Fire

The proponent will develop specific fire boiler explosion and fighting procedures and trained special fire and explosion employees to deal with fires at the project site. Fire warning systems (detection systems and alarms) and firefighting equipment (fire extinguishers) will be installed onsite.

The following steps will be taken:

- Appropriate Fire signage around the site.
- Small fires that can be safely extinguished should be put out using the appropriate extinguisher.
- If a fire grows too big to manage by portable extinguishers, emergency procedures will be initiated which include calling the city fire brigade
- At all times, in the event of a fire the employees should be advised to remain calm;
- All personnel will be evacuated in the event of a fire outbreak or explosion.
- A responsible person will be appointed to lead the fire and explosion response team onsite, and also will be responsible for holding a roll call in the event of an evacuation.
- All staff will be trained on fire and explosion response procedures, and drills will be held regularly and the procedures reviewed for improvement.
- All firefighting equipment will be inspected for effectiveness and project premises will be inspected for degree of safety.

6.8.2 Medical treatment and emergencies

The proponent will employ the services of full time medical personnel with OSH appropriate level of training to handle all medical issues (injuries/accidents, illnesses) throughout the construction phase of the project. The medical treatment and emergency procedures will be developed by this staff in consultation with the Project Manager. All emergency procedures will

comply with the Labour Act, safety and health regulations or requirements. The proponent will provide basic medical treatment equipment (ambulance) during construction phase.

6.8.3 Health and Safety Emergency prevention

- A Safety Health and Environmental Officer shall be employed at the site during construction phase of the project. All people to be employed at the proposed project site will be subjected to a medical assessment to evaluate their fitness for work. All contractors and subcontractors engaged DU Preez Petroleum cc, shall be required to employ a Safety Health and Environmental Officer to assist in the identification of hazards and emergency situations
- Employees who are considered emotionally, physically and medically incapable of carrying out their job will not be allowed to operate or drive equipment/vehicles.
- The proponent will not permit any of its employees to operate, drive or operate any vehicles or equipment whilst under the influence of alcohol, drugs or any mind altering medication/drugs.
- All employees working at the project site t should be able to read and understand the signs.
- All risks or hazards should be reviewed frequently, operating procedures updated as per need and communicated to all staff.
- All equipment and vehicles should be inspected and serviced to ensure there are in good working order.
- The proponent will develop safety, health and environment procedures which will be updated and communicated to all employees.

6.8.4 Emergency prevention

- Employees who are considered emotionally, physically and medically incapable of carrying out their job will not be allowed to operate or drive equipment/vehicles.
- The proponent will not permit any of its employees to operate, drive or operate any vehicles or equipment whilst under the influence of alcohol, drugs or any mind altering medication/drugs during the construction phase of the project.

- All employees working at the site should be able to read and understand the signs.
- All risks or hazards should be reviewed frequently, operating procedures updated as per need and communicated to all staff.
- All storage facilities, equipment and vehicles should be inspected and serviced to ensure there are in good working order.

6.9 EMP Conclusion and Recommendations

Conclusion

Arising from the analysis by the consultants, the proposed project is unlikely to generate any irreversible or permanent negative impacts if the EMP is operationalized. 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.

Recommendations

In order to sack negative impacts that may emanate from the construction and operation of a shopping mall, contents of this EMP must be adhered to. Part X of the EMA of 2007 under general provisions subsection 56 (2), *A regulation made under subsection (1) may prescribe a penalty for any contravention of, or failure to comply with any provision thereof, not exceeding a fine of N\$100 000 or imprisonment for a period not exceeding 10 years or to both such fine and such imprisonment.*

CHAPTER 7: CONCLUSION AND RECOMMENDATIONS

7.0 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.

7.1 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. DU Preez Petroleum cc as the project proponent should therefore be able to lead on issues related to the social wellbeing as well as women empowerment initiatives

The following recommendations should be strictly adhered to. In order to alleviate any negative impacts that may emanate from the construction and operation phases of the proposed project development under discussion.

- ❖ Relevant and cost effective management, which ensures hiring of qualified personnel; on serviceable components like electricity, fuel pumps, underground tanks, contracted personnel and waste recycling companies,
- ❖ Mitigation measures should be put in place always,
- ❖ Consulting Environmental Engineers, Manufacturing and installing Engineers and the Town council on issues that arose during Project life cycles and
- ❖ In the cases of decommissioning of the project, an application for decommissioning should be done with a qualified Environmental Engineer or consultant to the Ministry of Environment and Tourism

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APPENDIX I: BACKGROUND INFORMATION DOCUMENT

APPENDIX II: TERMS OF REFERENCE

APPENDIX III: MAPS AND LAYOUT PLANS

**APPENDIX IV: PUBLIC AND STAKEHOLDER
CONSULTATION**

APPENDIX V: CONSULTANT RESUME