ENVIRONMENTAL IMPACT ASSESSMENT (EIA): FINAL SCOPING REPORT FOR THE CONSTRUCTION OF A FILLING STATION IN SWAKOPMUND, ERONGO REGION (NAMIBIA)

SUBMITTED TO:

THE ENVIRONMENTAL COMMISSIONER

MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM

PROJECT PROPONENT: BLACK RIVER INVESTMENTS (PROPRIETARY) LIMITED

PO BOX 20869

WINDHOEK

NAMIBIA

SWAKOPMUND FILLING STATION

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CHAPTER 1: INTRODUCTION

1.1 Executive Summary and Overview

The importance of environmental protection and conservation measures has increasingly been recognized over the past two decades in Namibia. It is now generally accepted that economic development strategies must be compatible with environmental goals. Specifically, this requires the incorporation of environmental dimensions into the process of development. Hence, it has become important to make choices and decisions that will eventually promote sound development by understanding how the environment functions. The proposed development by Black River Investment cc, **hereafter the Proponent** aims to ensure this balance when developing the Swakopmund Filling Station **hereafter the Filling Station**. It also important to note that the **Proponent already has similar business in Namibia.**

Black River Investments CC is a Namibian private owned company. The company has been in operation for the past 10 year now. Black River Investments CC has proven track record of its experience in running business such as filling station and restaurants.

1.2 Project Site or Location

The filling station will be constructed within the town municipal land. The place is undisturbed, in a settlement area. During the visit on the site, the proponent intents to use more than 1093m^2 which includes the whole plot for the construction of a filling station, stop shop and car wash. The portion under consideration is 1 and half km from Vinneta, approximately 2 km from DRC. The site is fully cleared as its in town, there was never any activity on the plot. During the site visit, the accessor did not find any special activity to embed the go ahead of the proposed projects (see attached of the plot. In accordance with the requirements of the regulations that feasible and reasonable alternatives be considered, which includes the consideration of alternative sites, 2 to 3 business were identified which are one to two kilometers from the project site and were commencement of the Scoping phase. Subsequent to the Scoping phase and discussions between the applicant and the regional council this site was identified, and approved by the Swakopmund municipality.

No subsequent site was identified for the construction of the proposed filling station, and its amenities, however the site is identified by the proponent as a suitable site that is located on a highway and it is best for the type of proposed business.

1.3 The proposed development involves:

The study area includes a site at Swakopmund, in the middle of locations, Vinneta, DRC and Mondesa the district in Erongo region. The proposed activity entails the construction of a filling station, one stop shop and amenities development comprising of:

- 3 underground fuel tanks, each of 23 000 liter (23 cubic meters) capacity.
- 2 pumps, with three nozzles each (1 pump with 2 nozzles for Petrol and 1for Diesel) see picture for detail.
- Forecourt canopy with dispensing pumps
- convenience store with bakery section
- branded take away
- car wash facility and
- Tires repair.

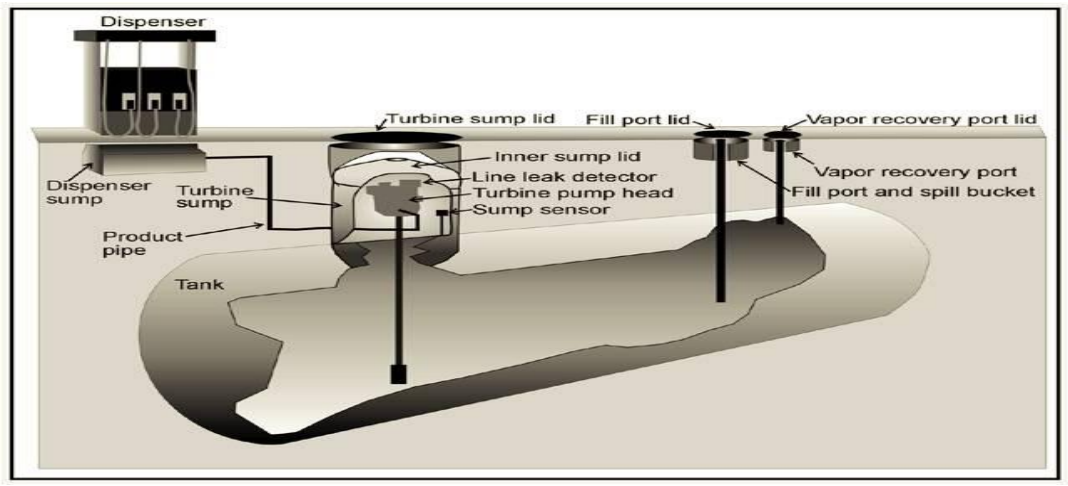
In addition, it is proposed to construct the following tourism related facilities as part of the development:

- Parking space for cars and tour buses,
- Toilet and shower.

1.4 Description of the filling station (Continue)

Standard industrial practice will apply under the canopy by slightly raising the paver or concrete floor above ground level of the service area and sealed with an impervious layer. In addition, the filling station will have a convenience store, car wash and other amenities required in the overall

filling station design.



The installation of the fuel tanks and pipelines at the filling station will be in line with SABS Standards (SANS 10089: Parts 1^3). In terms of these standards:

- Underground fuel storage tanks (USTs) should be, as a minimum, composite tanks (fiber reinforced resin coated steel tanks) see above picture 1 for detail
- Installation requirements for USTs are prescribed
- Filler point containment measures for the containment of spillages during tank filling are prescribed and
- Supply pipeline types, containment measures and installation requirements are specified.

The filling station will have 2 underground tanks, 2 pumps and 6 nozzles, one tank for diesel and other tanks will contain petrol. The tanks will be filled from a common filler box.

The filler point will be surrounded by secondary sleeving to prevent surface water and soil from entering the filler box. The fuel tanker operator will pump out any spillage into this filler box at the time of fuel delivery.

Fuel from these tanks will be pumped through underground pipelines, which will be laid to the forecourt area, where it will finally be dispensed into customers' vehicles. Dispensing pumps will be fitted with emergency cut off valves as specified by the relevant legislation and standards, and the pumps will have a vapor return system.

As per current standard practice, and in fulfillment of the requirements of the National Water Act and SABS 089:1999, all storm water that may potentially be contaminated by fuel or oil spills will be directed to a separator unit prior to exiting the site. In addition, waste water from the carwash facility will drain through a separator before discharge to sewer.

2. PURPOSE OF THE EMP

2.1 PURPOSE OF THE SCOPING REPORT (SR)

This SR serves to determine, analyze and present the environmental management plan (positive and negative) of a proposed development project for the construction of the Filling Station and associated infrastructure, formulate remedial measures to minimize and mitigate the negative impacts and plan in such a way that enables a rational decision to be made regarding the implementation and management of the proposed project. This Environmental Scoping report will further contribute to the reduction or mitigation of adverse impacts by generating a number of project alternatives for the proposed filling station development. In general, the purpose of this Environmental Scoping report is to anticipate and prevent, minimize and/or manage, potentially significant negative impacts of development that may:

- Cost too much money to rectify in the future
- Pose risk to lives, livelihood or health of current and future generations
- Result in irreplaceable loss of resources and reduced options for future well-being and,
- Help to seek opportunities to optimize potential benefits of development.

As a responsible local member, the Proponent is committed to enhance positive biophysical and social environmental impacts of the project while mitigating negative impacts of the project. During the scoping exercise, the Proponent has emphasized that he attaches great importance to environmental sustainability and human well-being. The Proponent also recognizes the strong correlation between environmental sustainability and human well-being through good health that depends on healthy ecosystems, clean water and air.

Therefore, this Environmental Impact Report has been prepared with a view to comply with Namibia's Environmental Assessment Policy of 1995, the Environmental Management Act No. 7

of 2007, Government Notice No. 29 of 2012 (Listed Activities) and the Government Notice No. 30 of 2012 (EIA Regulations).

2.2 EMP SCOPING REPORT OBJECTIVES

The objectives of this plan are to:

- Describe all environmental safeguards and mitigation measures
- provide a monitoring tool for MME and the fuel control body Namco
- minimize negative impacts of the development and operational phases of this project
- enhance the positive impacts
- provide a tool which allows a succession of managers to have a consistent approach to managing the fuel station and associated activities
- meet the requirements of relevant legislation
- allow the Proponent to monitor environmental impacts and
- Create awareness among all staff and key stakeholders (including MME) of the importance of maintaining sound environmental standards in all operations of the filling station.

<u>The strategies employed to achieve the objectives include:</u>

- Ensure that the developer is aware of the provisions of the EMP during the planning phase
- ensure that the EMP is an integral part of the operations procedures for the Filling Station
- incorporate environmental monitoring into the operations of the Filling Station and its associate facilities
- create environmental awareness among all staff and
- Use of the EMP as an agenda item for Management.

3. GENERAL REQUIREMENTS FOR IMPLEMENTATION OF THE EMP

3.1 EMP Administration

The management and staff, including the construction team, shall be required to familiarize themselves with the content of the document while the project Manager shall be tasked with the overall responsibility for the implementation thereof once the Filling Station is operational.

3.2 Environmental Awareness Training

a) Construction Phase

The owner and construction company shall ensure that all his/her staff are aware of the importance and implications of the EMP and the need to commit to the relevant provisions contained in the document.

b) Operational Phase

The operational phase shall require that roles and responsibilities for all employees need to be established while the reasons and importance of mitigation measures shall be clearly explained, and this shall be an ongoing process.

The positive socio-economic and biodiversity impacts involve a number of external stakeholders and these relationships require close and regular interventions.

Before commencement of business, the management shall send all its key personnel for training in handling dangerous and hazardous goods. This shall be maintained that during each shift, there shall be a trained staff on duty to lead the safety protocol at the filling station. It is also important for all staff to understand the context of the filling station designs for them to help during any emergency that will need their attention. All development must meet the standard as outline in the Guideline for the safety of the business and its customers.

3.3 EMP Monitoring

Prior to construction and twice during the construction phase the author will visit the site to monitoring compliance during the planning and construction phases. This report thus only deals with the future development and operational phase included for the planning and building phase.

Due to the above stated, Advance Environmental Consultant (AEC) was appointed by the Proponent to conduct an EMP for the Construction of a Filling Station. In terms of Namibia's Environmental Management Act (No. 7 of 2007, Section 27(2j), Government Notice No. 29 Listed Activities, and Section 6) and Government Notice No. 30 (EIA Regulations), the above proposed activity constitutes a number of listed activities which require Environmental Clearance.

In line with the above stated laws, this scoping report will address all the necessary key elements in mitigating unforeseen circumstances.

Government Notice.	Activity Number	Listed Activity
4878	29 (1)	The construction of filling stations, including associated structures and infrastructure, or any other facility for the Underground storage of a dangerous good, including petrol, diesel, liquid petroleum gas or paraffin.
4878	29 (5)	The transformation of undeveloped, vacant or derelict land to – (b) Residential, mixed, retail, commercial, industrial or institutional use where such development does not constitute infill and where the total area to be transformed is bigger than 1 hectare.

In line with the Namibia's Petroleum Product and Energy Act 13 of 1990 Section 4 (1) Any person desiring to operate a retail outlet shall apply to the Minister for a retail license by duly completing Form PP/1 as set out in Annexure B, and shall lodge such application with the Minister together with such other documents or records as may be required by these Regulations.

Section 4 (2) an application for a retail license shall be accompanied by –

Subsection 2 (c) if an environmental impact assessment study has been conducted, a certified copy of the document setting out the outcome of such study

41. (1) All buildings, roadworks, structures and plant erected or used in connection with petroleum products by a license holder or certificate holder shall comply with these Regulations and all other applicable laws.

(2) Buildings, roadworks, structures and plant used in connection with petroleum products by a license holder or certificate holder shall be erected, executed and maintained in such a manner as (a) to avoid endangering the safety or health of any person, or the safety of any person's property and (b) to prevent the risk of significant environmental harm.

3.4 Project Proponent

Black River Investment cc is known to have poultry farming and construction in Windhoek and filling station in Grootfontein that operates under Mr. Kennedy Kaali. Black River Investment is truly a Namibian owned company. The company has been operating in Namibia for 10 years now. The company have a history of running oil based business they already have a business operating in Grootfontein, Black River will operate the business in partnership with vivo pty ltd an international company that has been in oil industry for more than 5 years.

3.5 Scope of the EMP

Advance Environmental Consultant (AEC) undertook to carry out and draft the EMP following a well-defined framework. Owing to the importance of Interested and Affected Parties (I&APs) involvement in environmental studies, the EMP ensures that I&APs concerns are address as consultations were central to every step in the sense that, the approval of the clearance process by MEFT involving the local communities and surrounding business/farm owners .

The EMP comprised of detailed site specific investigations. Details of each process component are elaborated below.

<u>Scoping Exercise</u>

The scoping exercise aimed at identifying and screening all relevant issues related to the project development as well as identifying at the earliest possible time whether any adverse effects existed that could render the proposed project environmentally unacceptable. Specifically, scoping assisted in:

3.5.1 Focusing the impact assessment on a manageable number of important questions on which decision making is expected to focus

3.5.2 Ensuring that only key issues and reasonable alternatives are examined and,

3.5.3 Identifying fatal flaws in the proposed project planning.

3.6 Existing Environmental Conditions

To establish prevailing environmental conditions for the project area, environmental and socio-economic data including surrounding areas was collected, compiled and analyzed. Findings of the analysis are presented in the following Sections. Biological, zoological, botanical and socio-economic studies carried out in the past for the area provided secondary data for the report.

3.6.1 Descriptions of Project Activities

Project inputs, activities and outputs during project preparation, construction and operational life stages were reviewed and are described in this section. This section also includes description of project alternatives.

3.6.2 Analysis of Potential Environmental Impacts

An assessment of environmental effects and benefits of the proposed project regarding biophysical and socio-economic environment has been undertaken as well as an analysis of the impacts' extent, duration, intensity and significance.

3.6.3 Formulation of Possible Mitigating Measures

Based on the analysis of findings, a number of measures and plans for mitigating the identified possible adverse environmental impacts of the project are proposed. Further, the report proposes measures and plans for enhancing positive environmental impacts of the project. And wherever possible, the costs and benefits of these environmental measures are quantified.

3.6.4 Elaboration of an Environmental Management Plan

An Environmental Management Plan (EMP) for implementing the proposed mitigating measures during the project preparation, construction and operation phases of the project was developed. The EMP further indicate management responsibilities and time frames.

3.6 Stakeholder Consultations

AEC's approach to environmental assessment studies is aimed at ensuring that wide stakeholder participation and involvement is achieved. Recognizing this, and as part of the transparent consultative process aimed at taking public views into account in determining the EMP, public consultative meetings could not be done due to the rules and regulations of Covid- 19, however adverts were placed in the newspaper for affected and interested parties to forward their comments as well as posters were put up at the Swakopmund municipality, on site for public to pass their concerns. Swakopmund stake holders including representatives from the municipality, and Regional office were consulted through telephones and emails due to Covid-19 regulations.

The Proponent is in possession of a Leasehold certificate for the land were the proponent plan to construct the Filling Station, support letter from the Region and Local Authority, Appendix B.

3.7 KEY STAKEHOLDERS CONSULTED INCLUDES:

- Swakopmund municipality
- Community

3.7.1 **Methodology**

The Interested and Affected Parties (I&APs) consultative process involved meetings, open discussions and interviews with relevant government institutions, local authority and representatives from the villages. Through this interaction the AEC team tried to establish how Interested and Affected Parties understood the dynamics of the environment in which the proposed project is located and any possible underlying causes that could lead to changes over time as a result of implementing the project.

Where the AEC team felt it necessary to go more in-depth on a particular matter, Interested and Affected Parties within the project area or surrounding area with either experience or expert knowledge of the study area were identified and interviewed to validate the data already obtained, as well as to get their advice on any additional sources of information that was not readily available. This was useful in interpreting any underlying factors of the trends already observed.

3.7.2 **Stakeholder Consultation outcome**

The meetings and informal interviews conducted did not raise any objections against the proposed development nor on the site proposed for the facility. The site for the proposed development is within the proponent's own farm.

Authorization requirements for this proposed project include:

- An Environmental Clearance Certificate
- Consent from the – Approval letter (Appendix A)
- Consent from the ^ Approved (Appendix C)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AND TO BE RECEIVED BEFORE THE CLOSING DATE AND TIME.
NB: COMPLETED DOCUMENTS SHALL BE HANDED IN AS FOLLOWS:
1 X ORIGINAL AND 1 X COPY IN SEPARATE ENVELOPES ALL CLEARLY MARKED WITH THE BID NUMBER AND "ORIGINAL" AND "COPY". Failure to provide copies shall result in the Bid being disqualified. The Bid Number and Closing Date shall be clearly indicated on the Original and Copies.
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ADVANCED
Environmental Agency
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4. EMP Drafter Team

This chapter is intended to provide details on the organization and the author that undertook the EIA Study as required in terms of (Act no 7 of 2007).

Advanced Environmental Consultant Agency cc is an environmental consulting company whose environmental division comprises 1 individual of which is an Environmental Assessment Practitioners. The environmental division has undertaken over 5 Environmental Impact Assessments for development projects within Namibia.

4.1 Details of EAP that prepared the EIA Report

Name: Miss Albertina Simon

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OFFICE NO: # 44

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Tel: 081 760 6590

Email:albertina_simon@yahoo.com

Albertina Simon

Miss Albertina Simon the owner and founder of Advanced Environmental Agency is an Environmentalist with 3 years' experience in EIA regulation and conservation research support in Namibia. She has served as an environmental officer reviewing applications with environmental issues for different environmental assessment/consulting companies, before embarking on registering her own company as Assistant. Her key expertise includes: Review of Environmental Impact Assessments and related reports, compilation and quality control of records of decision for environmental authorizations, and development of operational guidelines, procedures and templates for administration of environmental applications. She has done 5 successful studies in the past 3 years since she stared in 2017.

Table below present the projects successfully prepared by the EIA Practitioner:

Proponent	**Project type**	**Date issued**	**Registration n#**
Acer petroleum pty ltd	Filling station	2019^10^29	656
ACER Petroleum pty ltd	Filling station	2020^01^29	657
Acer petroleum pty ltd	Filling station	2020^03^21	874
BV investment cc	Filling station	2018^08	^
Tight investment cc	Filling station	2018^03	^

CHAPTER 2: DESCRIPTION OF PROPOSED PROJECT

2.1 Location

Only one site being considered as set out in Section 3.2 above and shown in this Scoping Report shows the main issues on site selection to be: co-ordinates-

- Access, from the Erastus Street from the B1 road to Henties Bay.
- Road safety, owing to the alignments of the Erastus Street.
- The other road safety considerations will be done in line with the Road Authority regulations safety measures.

Figure 5: Northern entrance to filling station

The North-eastern entrance and exit from and to the Filling Station along the road are marginally less risky than the East-northern entrance, but the topography is flat and visible from a distance when joining or exiting the road. For these reasons the east -northern entrance to the filling station need a proper considered to offer a feasible site alternative for consideration.

It is therefore desirable from a planning perspective to locate a mixed retail development within this area.

From an environmental perspective Swakopmund is a coastal town where by it's always fogy but less rain fall which reduces flood risks in the area (rain fall is less than 20 mm per annum reducing the risk of surface water contamination and pollution from fuel spills, which are commonly associated with fuel stations. Similarly, the need for extensive cutting and leveling operations in the preparation of the site due to the flatness of the area may also impact the quality of water recharging the underground aquifer. In addition, access is likely to be almost as much of an issue here as at the filling station depending on the direction where you are coming from on the Henties bay B2 turn into Erastus Street , entering ,to exiting one has to make U-turn back to the B1 as the street ends into circle.

2.2 Project Rationale

The company proposed to employ 10 staff on a permanent basis, however it is anticipated that besides the 10 possible direct employment opportunities associated with construction a further 10 to 15 indirect jobs could be generated during this phase of the development. However, it is unlikely that these entire job opportunities will accrued to Swakopmund residents as much depends on the sourcing of services and skills. The proposed development will create between 15 and 25 permanent jobs associated directly with the operation of the various development components. A further 10 to 15 indirect job opportunities are likely to be generated in other sectors servicing the development, again it is to be expected that some of these indirect opportunities will accrue to areas outside Swakopmund, this will be a temporary arrangement until such time that people in the vicinity of Swakopmund are trained if the skills needed are not readily available when business opens its doors. Taking into consideration the distance the local people have to travel to town for supplies.

2.3 Project Description and Alternatives

Project Description

Application for the Environmental Clearance from the Directorate of Environmental Affairs (DEA) is being made for the Construction of the Filling Station, and other facilities as described above in detail.

Products and services planned to be offered at the proposed Filling Station will include the following:

- Service administration are
- Fore court canopy with dispersing pumps,
- One stop shop.
- Parking space for cars and trucks

Environmentally friendly ablution facilities will be provided, where wastewater will be collected in septic tanks lined to avoid contamination of soil and groundwater. Waste water will be collected in prefabricated septic tanks and treated to speed up the decomposition. The design and operations of these septic tanks will comply to the:

- Department of water affairs & forestry code of practice: volume 1.
- Septic tank systems general guidelines (July 2008).

The proponent takes cognizance of the current good rainfall however, he is fully aware of the past year of dry spell when the rainfall was very low. The basin or catchment area has not received good rain to recharge the underground aquifers. The facilities will be installed with water saving tech to enable the use of water sparingly.

2.4 Power source or Type

The proponent plans to set up a solar power plant for use at the Filling Station and its associate facilities, however this will depend on the viability of the solar plant vs the main power grid considering the cost involves in both power source. The proponent is still optimistic to install the solar plant in future once all construction is done and the business is running. The roof top of the business will be used for the solar plant to avoid clearing of additional land for the solar plant.

Construction Phase: These will be the only time that high volume of water will be used during the construction since the construction is of permanent structures using bricks and mortar to build. Thereafter, the usage will be far more sparingly since the area is isolated from the villages, and the shop will sell bottled water for the passer by.

Operational Phase: It is anticipated that the Filling Station will attract high number of people, stemming from the local and road users. This though is an ambitious expectation, due low competition from other well-established facilities within a 200 km radius from the proposed Swakopmund Filling Station, of which the nearest other facility is Walvis -bay and Arandis.

The water demand for a typical service station is 1000 l per day per person. The facility therefore is considered to be low on water usage since most of the people only use the ablution and in rare case of truck drivers who will need a stop over to freshen up.

Design and Layout Alternatives

This is being developed and will be done inline within the guideline and policy on filling station as required by MME. Layout of the proposed development is largely dependent on the location of access points from the Erastus street. The consideration of layout alternatives has thus largely revolved around the assessment of traffic impacts and the consideration of alternative access points.

2.5 Project Site Alternative

The Proponent has no alternatives site. All the marketing, and business viability has been taken into consideration, and that the proposed site is ideal for his business.

2.6 No -Go Alternative

No Go Alternative: If this option is selected, the development or construction of the Filling Station will not proceed. In essence, the no-go alternative would ultimately imply that the state of the environment would be retained as it is presently, with obvious advantages and disadvantages to the natural environment. The Department of Environmental Affairs in the MEFT stresses that the no-go alternative should be considered in cases where the proposed development will have a significant negative impact that cannot be effectively or satisfactorily mitigated against.

CHAPTER 3: LEGAL, REGULATION AND POLICY FRAMEWORK

The Table 1 below summarizes the legislation and policy guidelines that are relevant to the proposed project and is not exhaustive.

Table 1: Relevant legislations and policy guidelines

Title of legislation, policy or guideline	Implications for proposed project (Please read all Acts with their Regulations)
The Namibian Constitution of 1990	The Constitution clearly indicated that the State shall actively promote and maintain the welfare of the people by adopting policies aimed at management of ecosystems, essential ecological processes and biological diversity of Namibia for the benefit of all Namibians, both present and future.
Water Resources Management Act No. 11 of 2013	This Act protects all water resources in Namibia. The Act also laid down conditions to ensure that proper wastewater treatment is provided, including requirement for wastewater discharge permit from the Directorate of Water Affairs.
Environmental Assessment Policy of Namibia (1995)	The Policy seeks to ensure that the environmental consequences of development projects and policies are considered, understood and incorporated into the planning process, and that the term ENVIRONMENT is broadly interpreted to include biophysical, social, economic, cultural, historical and political components.
Environmental Management Act No. 7 of 2007	The Act provides a list of projects requiring an Environmental Assessment. It aims to promote the sustainable management of the environment and the use of natural resources and to provide for a process of assessment and control of activities which may have significant effects on the environment.
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. Its primary purpose is to prevent hazardous substances from causing injury, ill-health or the death of human beings. Hydrocarbons handled during the construction phase may be hazardous thus careful handling and management is vital to prevent spills, explosions, ill-health or death.
Pollution Control and Waste Management Bill of 1999	The Bill promote sustainable development and the establishment of the Pollution Control and Waste Management Unit to prevent and regulate the discharge of pollutants to the air, water and land to make provision for the establishment of an appropriate framework for integrated pollution prevention and control to regulate noise, dust and odour pollution to establish a system of waste planning and management and to enable Namibia to comply with its obligations under international law in this regard.
Draft Wetlands Policy of 2004	This policy strives to complement existing policy instruments regarding sustainable development and sound natural resource management in Namibia. Its implementation provides a platform for the conservation and wise use of wetlands, thus promoting inter^ generational equity regarding wetland resource utilization. Furthermore, it facilitate the Nation's efforts to meet its commitments as a signatory to the International Convention on Wetlands (Ramsar) and other Multinational Environmental Agreements (MEA's).
National Waste Management Policy, 2010	This policy is focusing specifically on Waste Management and use of various technologies waste treatment and disposal to minimize health risks. It is also geared to have a unified waste management system country wide. This policy provides the necessary guidance on the processes related to waste management in the MOHSS, wider Namibia health and social welfare sectors, and other relevant stakeholders. It is taking into consideration the process of integrated waste management from generation to final disposal. This practice also focus on medical, household, mining, agricultural, and construction waste.

Forest Act No. 12 of 2001 and its amendments	The purpose of this Act guides the use and management of forestry and related resources. The aims of the forest management as per the Act, is to achieve manage of forest "for which forest resources are managed and developed, including the planting of trees where necessary, to conserve soil and water resources, maintain biological diversity and to use forest produce in a way which is compatible with the Forest's primary role as the protector and enhancer of the natural environment."
National Heritage Act No. 27 of 2004	The Act provide for the protection and conservation of places and objects of heritage significance and the registration of such places and objects to establish a National Heritage Council to establish a National Heritage Register and to provide for incidental matters.
Labor Act No. 11 of 2007)	Consolidate and amend the labor law to establish a comprehensive labor law for all employers and employees to entrench fundamental labor rights and protections to regulate basic terms and conditions of employment to ensure the health, safety and welfare of employees to protect employees from unfair labor practices to regulate the registration of trade unions and employers' organizations to regulate collective labor relations to provide for the systematic prevention and resolution of labor dispute to establish the Labor Advisory Council, the Labor Court, the Wages Commission and the labor inspectorate to provide for the appointment of the Labor Commissioner and the Deputy Labor Commissioner and to provide for incidental matters.
Public Health Act, No. 36 of 1919 and Amendments and Regulations	This Act makes provision for the prevention and control of infectious diseases, venereal diseases and epidemics. It also regulates sanitation, food and public water supplies.

CHAPTER 4: DESCRIPTION OF EXISTING ENVIRONMENT

Appropriate standard methodologies were used to describe the existing environment. These included undertaking an inventory of the physical and biological environments, conducting interviews and reviewing of relevant literature. In addition, mapping of the project area was done using a hand? Held GPS unit and plotted on Google Earth.

Objective	**Management Measure**	**Monitoring Action & Method**	**Responsibility**	**Progress 10th June**
Environmental Clearance	Apply for environmental Clearance	File clearance	Proponent	Completed, EMP approved, clearance certificate issued
Adhering to EMP Requirements	EMP should be shared and Discussed **prior** to layout of building.	Site plan to ensure that layout of buildings reduces visual impact as per the Scoping Report	Proponent	The Proponent has appointed a person (Manager) to Oversee all building operations. He has a copy of the EMP and it is apparent that it is used.
	Organize an awareness meeting with all building staff to ensure awareness and the need for compliance with EMP	Complete EMP awareness Training	Contractor	This happens on an ongoing basis. Mr. Kennedy Kaali discusses with the sub? Contractors responsible for the filling station structures the layout and together the areas are demarcated with tape. General workers may need to be informed as to why an EMP is important.
Socioeconomic benefits				
Conserve existing Vegetation	Layout & design should incorporate the existing trees	Layout & design complies with proposed mitigation. Large specimen trees must not be removed	Contractor/Proponent	Yes, carefully demarcated. See photo 1.
Minimize land degradation & erosion	Improve the access road to ensure least possible waterlogging threat (drainage structures to be built where required)	Monitor accessibility	Contractor	The Proponent has ordered culverts for the section of the track most prone to water? Logging.

Objective	Management Measure	Monitoring Action & Method	Responsibility	Progress
To ensure that provisions of the EMP are implemented during	Contractor to report at every site meeting with local authority and the proponent	Included in site meeting notes	Proponent	Proponent's agent noted all comments and requested information on soak Always which has been forwarded to him.
Construction	representative (or representative) on implementation of EMP			
	Contractor to conduct training & awareness for workers	Workers awareness & training meeting	Proponent	Ongoing but probably reasons for an EMP require further Awareness training.
	Copy of EMP included as part of contractor's instructions and available to all staff and sub? Contractors	EMP available on site	Proponent	The Proponent is managing a team of subcontractors but person responsible for oversight has a copy of the EMP which is used.
	A signoff procedure should there be any change to the EMP or should there be any deviation from the clauses or intention of the EMP	Updates and instructions included in construction instructions	Contractor	There has only been one nonsignificant deviation – concrete slabs (100 mm) cast for service areas but this offset by no use of concrete in bungalows.
Minimize damage to environment during construction	Demarcate area which shall be subjected to disturbance	Common understanding on extent of construction area	Contractor	Done – see photo 2.
	Detailed instructions to be issued on rehabilitation of disturbed areas	Instructions shared with contractor	Contractor	Will be done once construction nears completion.
	Protection of woody plants. Where possible these should be incorporated into the design	Compliance with contractor instructions	Contractor	Yes, done. See photo 1.

	Wildlife not to be disturbed, trapped or killed and any offender shall be reported to MEFT for further action	Incidents to be recorded and reported to MEFT and other Law enforcement agents	Contractor	Will be observed throughout the construction and operational phase
	To minimize soil or water Pollution	Spillages of potentially harmful substances must be cleared immediately and disposed of at an appropriate site	Contractor	Spillages to be report.
	To ensure that sound waste management is practiced during the construction phase and should be classified as industrial (oil, metal and chemical based materials)_ solid waste (normal household waste) and human waste (sewerage)	Management & disposal of waste is undertaken on the principle of removal from the site and disposal at an appropriate dump	Contractor	a) All waste taken to Swakopmund dumpsite b) A new design for soak away for septic tanks required and this has been shared with the Proponent on 11th March. See photo 4 for existing soak- Away hole and the damp towards the bottom of the hole. A long narrow and shallower soak- Away shall be a better solution and the site manager has willingly agreed to alter the design.
	Servicing of vehicles and equipment not undertaken on site	Servicing outsourced to off? site service providers	Contractor	Vehicles serviced off site.
	No contamination of soil or water by fuels or oil	Ensure that all fuels stored and managed to reduce risk of spillages		Filling Station Manager

CHAPTER 5. ENVIRONMENTAL MONITORING AND SOCIOECONOMIC IMPACT (Operational Phase)

The following represents key monitoring activities but Filling Station management may add as the need arises

Note: Most of the monitoring is the responsibility of the manager BUT he/she may delegate as required but those responsible need to have the task included in job description

To be Monitored	**What needs to be monitored**	**Frequency**	**Responsibility**	**Findings**
Water consumption	Liters used per guest/staff/services	Monthly	Filling Station Manager	
Sewerage system	Septic tanks	Every three months	Filling Station Manager	
Sewerage pipes	Leaks	Monthly	Filling Station Manager	
Grey water pipes	Leaks	Monthly	Filling Station Manager	
Fat traps	Functioning equipment	Weekly	Filling Station Manager	
Water installations	Functioning of purification equipment	Weekly	Filling Station Manager	
Soak Always	Drainage	Weekly	Filling Station Manager	
Tracks	Erosion	Monthly but more intensively after rainfall Events	Filling Station Manager	

5.1 Operational Phase

Objective	Management Measure	Monitoring Action &Method	Responsibility	Findings
To ensure that EMP and the Scoping Report understood by management & staff	EMP & Scoping Report incorporated into contract of Filling Station Manager	Contract which aligns EMP & Scoping Report	Proponent	
	Staff receive training and understand the implications and reasons for the EMP	Training held & roles and responsibilities of various staff members clearly spelt out and included in job descriptions	Filling Station Manager	

To ensure that the agreed socioeconomic benefits of the (if a contract exist) are achieved	Implement contract monitoring tool			
Minimize impacts on vegetation	Existing vegetation in Filling Station area is not removed except where it is a hindrance to operations	Conduct regular inspections and keep staff informed	Filling Station Manager	
	Introduced ornamental plants must only be indigenous to the area	N/A	Filling Station Manager	
	Staff do not fell trees or damage vegetation	Inform staff of policy as well as the repercussions should there be none Compliance. Include in code of conduct for staff	Filling Station Manager	
Minimize land degradation & erosion	Rainfall run-off at Filling Station does not cause undue erosion	Regular inspections and if required remedial contouring or drainage	Filling Station Manager	
	Ensure that tracks used exclusively for Filling Station activities are not subjected to erosion or excessive waterlogging	Undertake inspections regularly and, if required, install additional drainage or undertake whatever repairs required to rehabilitate and reduce erosion	Filling Station Manager	
To preserve scenic quality & "sense of place"	Mitigation measures implemented during construction phase are maintained	Regular inspections of screens etc. hiding services & installations are functional and if required repair	Filling Station Manager	
Minimize impact on water	Staff are aware of the need to not use water wastefully	Undertake staff training	Filling Station Manager	

resources	Water usage & consumption is within the "best practice guidelines"	Monitor water usage on a monthly basis and calculate usage per guest and for staff members and compare against targets	Filling Station Manager	
	There is no leakage from water systems	Undertake regular inspections of all water pipes	Filling Station Manager	
Minimize soil & water pollution	Spillages of potentially harmful substances must be cleared immediately and disposed of at an appropriate site	Inspection and follow-up cleanups if required	Filling Station Manager	
	Functional septic tanks	Undertake regular inspections and, if required, dislodge	Filling Station Manager	
	Functional fat traps	Inspect & clean on a regular basis and store matter in sealed containers	Filling Station Manager	
	Functional soak always	Inspect on a regular Basis	Filling Station Manager	
	Functional and leak free waste water pipes	Inspect on a regular basis on repair if required	Filling Station Manager	
	Use of environment friendly soaps & detergents	Ensure that procurement specifies this need	Filling Station Manager	
	No contamination of soil or water by fuels or oil	Ensure that all fuels stored and managed to reduce risk of spillages	Filling Station Manager	

5. Environmental Monitoring (Operational Phase)

The following represents key monitoring activities but Filling Station management may add as the need arises Note: Most of the monitoring is the responsibility of the manager BUT he/she may delegate as required but those responsible need to have the task included in job description

To be Monitored	What needs to be	Frequency	Responsibility	Findings

	monitored			
Water consumption	Liters used per guest/staff/services	Monthly	Filling Station Manager	
Sewerage system	Septic tanks	Every three months	Filling Station Manager	
Sewerage pipes	Leaks	Monthly	Filling Station Manager	
Grey water pipes	Leaks	Monthly	Filling Station Manager	
Fat traps	Functioning equipment	Weekly	Filling Station Manager	
Water installations	Functioning of purification equipment	Weekly	Filling Station Manager	
Soak always	Drainage	Weekly	Filling Station Manager	
Tracks	Erosion	Monthly but more intensively after rainfall events	Filling Station Manager	

Table 2: Criterion and classification of impacts

Assessment Evaluation Criteria	**Rating (Severity)**	
Impact Type	**A**	Negative
	=	No Impact or Negligible Impact
	+	Positive
Extent of impact	**I**	Immediate (the site and immediate surroundings)
	L	Local
	R	Regional
	N	National
	IT	International
Duration of impact	**ST**	Short term (0F5 years)
Duration of impact	**ST**	Short term (0F5 years)
	MT	Medium term (5F15 years)
	LT	Long term (lifetime of the development)
Intensity of impact	**L**	Low (where natural, cultural and social functions and processes are not affected)
	M	Medium (where the affected environment is altered but natural, cultural and social functions and processes can continue)
	H	High (where the affected environment is altered to the extent that natural, cultural and social functions and processes will temporarily or permanently cease).

Probability of impact	**LP**	Low probability (possibility of impact occurring is low)
	P	Probable (where there is a distinct possibility that it will occur)
	HP	Highly probable (where the impact is most likely to occur)
	D	Definite (where the impact will occur)
Significance of impact	**L**	Low (where natural, cultural and social and economic functions and processes are not affected). In the case of adverse impacts, mitigation is either easily achieved or little will be required, or both. In the case of beneficial impacts, alternative means of achieving this benefit are likely to be easier, cheaper, more effective and less time-consuming
	M	Medium (where the affected environment is altered but natural, cultural, social and economic functions and processes can continue). An impact exists but is not substantial in relation to other impacts that might take effect within the bounds of those that could occur. In the case of Beneficial impacts, other means of achieving this benefit are about equal in time, cost and effort.
	H	High (where the affected environment is altered to the extent that natural, cultural, social and economic functions and processes will temporarily or permanently cease). In the case of adverse impacts, there is no possible mitigation that could offset the impact, or mitigation is difficult, expensive, time consuming or a combination of these. In the case of beneficial impacts, the impact is of a Substantial order within the bounds of impacts that could occur.

5.1 Potential Impacts

5.5.1 Socio-Economic Impacts

Impact: Increased Employment Opportunities

The development will create additional job opportunities for the town members of the Swakopmund and the surrounding small town like Arandis residents. At preparatory, construction and operational stages, local Community members will be employed and consequently livelihood support for family members will be improved (short-term and long-term) – in particular as on average support from one job benefits five family members.

Impact: Increase in Local Population

The development will not have a significant impact on the population size of the area. The proposed development will source a very small number of highly skilled personnel from outside the Constituency during the construction phases. All semiskilled and unskilled staff will be employed from the Constituency and appropriate training will be provided. Human presence in the remote project site will though increase. It is not expected that this increase of human presence will significantly negatively impact in the area. It is however expected that this increased human presence financial injection into the local business of the Swakopmund town and its surroundings locations especial DRC and Vinneta.

Impact: Increase in Local Economic Activities

Trading opportunities among the local people are expected to increase. Food and other household necessities will be sold to the construction staff, providing both a short-term and long-term positive economic activity. Increased employment numbers within the Constituency will also support local trade through increased income in the area, including sale of hand crafts.

Impact: Water Supply Availability

The development is unlikely to put pressure on water demand in the area and will not overwhelm the groundwater resources, as clients are just stopping over for fuel and relaxation and proceed to their destinations.

Impact: Loss on Cultural Site

No significant impact determined.

Impact: Increased Demand for Health Services

During construction and operations, all occupational health related injuries will be referred to the local health facilities for immediate attention, in Swakopmund. This will not have a significant impact on the capacity of the staff and facilities to meet the demand for health care, since most of the employed people will be from the area and already reside there. HIV and AID programs for the Contractors, and for the local communities will need to be developed and provide so to ensure that all participating people are not exposed to increased risk of HIV/AIDS spread.

Impact: Worker Safety

During the construction and operation phases, light to heavy machinery will be employed for the digging and putting up associated infrastructure. Absence of clear safety guidelines may lead to accidents affecting worker's safety and productivity, however, this will not be the case during the construction of this development and clear safety guidelines will be available and all workers will be briefed and trained accordingly, taking into consideration that the activity is place alongside a highway.

Impact: Increased Traffic

Increased traffic flow in and out of the area is expected during construction and operations. During operations, this increase is expected to be high as service will be available to the road user, and that it is no more a remote route from the outsider and slight increase in local traffic can be expected.

Impact: Blasting noise and vibration

There is a possibility of blasting that might take place during the construction depending on the type of underground layers that will be encountered. However limited vibrations from machinery and tools could be perceived as intrusion. This will only occur during limited construction time

5.5.2 Environmental Impacts

Impact: Displacement of people

No impact, as it is owned by the town council.

Impact: Machinery noise and vibration

During the construction and operational phases, noise and vibrations from the vehicles and machineries will result into noise and vibration. This impact will be insignificant to Wild animals. The construction workers are the most vulnerable and therefore they should wear protective gear.

Impact: Water quality No impact.

Impact: Solid Waste Disposal

Waste will be produced at the site during the setting up of supporting infrastructure and digging trenches for the pipeline. Piles of sand cleared or dug out are not environmental pollutant hazard, but can reduce the area aesthetics value, therefore it will be done with little to no significant and site to restore in a shortest time less than a year.

Impact: Air Pollution

The major source of the impact will be dust from vehicles ferrying materials, possible blasting. However most of the material will be ferried via the tarred road which has less dust apart from burning of fuel, this impact is insignificant. Care should be taken not to expose workers to excessive dust and exhaust fumes.

Impact: Loss of Historical and Cultural Site:

There are no existing historical and cultural site within the site or in its immediate surrounding environment.

Impact: Loss of Productive Land

The plot is situated in a business zoned area, therefore no loss or impact on any wildlife or livestock, being that the site is between two busy main roads.

Impact: Loss of Wildlife Habitat, Indigenous Flora and Fauna

The project site will not interfere directly with any existing stock live that currently use the grazing land illegal, there are no wildlife since the plot is within town and completely cleared and serviced.

Impact: Erosion of the Topsoil

The nature of the project demands the use of machinery during construction. There will be soil removed for the development that might cause erosion. However, the nature of development

requires such activity to be performed. Unless rehabilitation is not done properly after construction and no regular maintenance is carried out during the operational phase of the project.

Impact: Siltation and Sedimentation the nature of business will require that excavation is required.

Impact: Soil degradation

No impact on a larger scale, only the development site

The following Tables below present the proposed impact analysis. Table 3: Evaluation of impacts during preconstruction phase

PRECONSTRUCTION PHASE							
Identified Impact	**Impact Type**	**Extent**	**Duration**	**Intensity**	**Probability**	**Significance**	
						Unmitigated	**Mitigated**
Surface water pollution	**=**						
Ground water pollution	**=**						
Soil erosion	**=**						
Soil pollution	**=**						
Air pollution	**=**						
Land use potential	**=**						
Habitat transformation	**=**						
Fauna displacement	**=**						

Damage to Flora	**=**						
Traffic impacts	=						
Visual & aesthetic Impacts	=						
Social	**+**	**L**	**ST**	**M**	**D**	**L**	**M**
Economic	**+**	**L**	**ST**	**M**	**D**	**L**	**M**

Table 4: Evaluation of impacts during construction phase

CONSTRUCTION PHASE							
Identified Impact	**Impact Type**	**Extent**	**Duration**	**Intensity**	**Probability**	**Significance**	
						Unmitigated	**Mitigated**
Surface water pollution	**=**						
Ground water pollution	**=**						
Soil erosion	**A**	**I**	**ST**	**L**	**LP**	**L**	**=**
Soil pollution	**A**	**I**	**ST**	**L**	**LP**	**L**	**=**
Air pollution	**A**	**I**	**ST**	**L**	**P**	**L**	**=**
Land use potential	**A**	**I**	**ST**	**L**	**P**	**L**	**=**
Habitat transformation	**=**						
Fauna displacement	**A**	**I**	**ST**	**L**	**LP**	**L**	**=**
Damage to Flora	=						
Traffic impacts	**A**	**I**	**ST**	**L**	**P**	**L**	**=**

Visual & aesthetic Impacts	**A**	**I**	**ST**	**L**	**P**	**L**	**=**
Social	**+**	**L**	**ST**	**M**	**D**	**M**	**H**
Economic	**+**	**L**	**ST**	**M**	**D**	**M**	**H**

Table 5: Evaluation of impacts during operational phase

OPERATIONS PHASE							
Identified Impact	**Impact Type**	**Extent**	**Duration**	**Intensity**	**Probability**	**Significance**	
						Unmitigated	**Mitigated**
Surface water pollution	**=**						
Ground water pollution	**=**						
Soil erosion	**A**	**I**	**ST**	**L**	**P**	**L**	**=**
Soil pollution	**A**	**I**	**ST**	**L**	**P**	**L**	**=**
Air pollution	**=**						
Land use potential	**+**	**L**	**LT**	**M**	**D**	**M**	**L**
Habitat transformation	**=**						
Fauna displacement	**=**						
Damage to Flora	**=**						

Traffic impacts	**=**						
Visual & aesthetic Impacts	**+**	**L**	**LT**	**M**	**D**	**M**	**H**
Social	**+**	**L**	**LT**	**M**	**D**	**M**	**H**
Economic	**+**	**N**	**LT**	**M**	**D**	**M**	**H**

CHAPTER 6: ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN (EMP)

From the above identification of adverse and positive impacts measures have been proposed for mitigation. In order to achieve this, an Environmental Management Plan (EMP) has been developed as part of this document.

CHAPTER 7: CONCLUSION

A project of this magnitude will bring with it both positive and negative environmental and socio-economic impacts. These can be localized to the project site or can also affect areas within the project's vicinity. While positive impacts from this development are expected to affect the wider Conservancy and its members, the adverse effects can be considered much localized. For this development project, the positive impacts outweigh the negative impacts to which amelioration measures have been proposed to cushion their impacts.

Therefore, we recommend that the project be considered for approval for implementation, especially since the proposed site for the construction development is not a sensitive site, and unlikely to generate long term significant negative impacts.

This Scoping Report has revealed that a full EIA will not be required in order to identify gaps in information or to accurately identify all project's aspects that could generate significant negative impacts.

APPENDICES

APPENDIX A: Letter from Swakopmund municipality

APPENDIX A1: Design or layout of the Filling station

APPENDIX B: Proponents Leasehold/Contract

APPENDIX C: CV. Albertina Simon/COMPANY PROFILE

BIBLIOGRAPH

Burke, A. 2009. Wild flowers of the Northern Namib. Solitaire Press (Pty) Ltd. Windhoek, Namibia.

Burke, A. 2009. Wild flowers of the Central Namib. Solitaire Press (Pty) Ltd. Windhoek, Namibia.

Christelis G. & Struck Meier W. 2001. Groundwater in Namibia: an explanation to the hydrogeology map. John Meinert Printing (Pty) Ltd. Windhoek, Namibia.

Legal Assistance Center Website. http://www.lac.org.na/. Accessed May 2019 to August 2019.

Mendelsohn, J. 2003. Atlas of Namibia: A portrait of land and its people. David Philip Publishers. Cape Town, South Africa.

Muller M.A.N. 2007. Grasses of Namibia. John Meinert Printing (Pty) Ltd. Windhoek, Namibia.

National Planning Commission (NPC). 2012. Namibia 2011 population and housing census preliminary results. Windhoek, Namibia.

Palgrave K.C. 1993.Trees of Southern Africa. 2nd Ed. Struik Publishers. Cape Town.

US Department of State Geographer. Google Earth. Accessed May 2019 to August 2019.

THE PROJECT SITE MAP

PROPOSED SITE


ADVANCED
Environmental Agency
Notice for public participation : Environmental impact assessment
BLACK RIVER INVESTMENT (PTY)LTD