

# **BENGUELA PETROLEUM SUPPLIES CC**

SCOPING (INCLUDING IMPACT ASSESSMENT) REPORT

THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY

LOCATED IN NORTHPORT, WALVIS BAY, ERONGO REGION, NAMIBIA

FEBRUARY 2026



**SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY**

<b>DOCUMENT CONTROL</b>	
<b>REPORT TITLE</b>	SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY
<b>PROJECT NO.</b>	JF245
<b>CONSULTANT</b>	I.N.K ENVIRO CONSULTANTS CC P.O BOX 31908 WINDHOEK NAMIBIA
<b>CLIENT</b>	BENGUELA PETROLEUM SUPPLIES CC 28 LANGER HEINRICH CRESANT STREET, KEJIN PARK WALVIS BAY NAMIBIA
<b>DATE</b>	FEBRUARY 2026
<b>CURRENT REVISION</b>	FINAL REPORT
<b>AUTHOR</b>	MR. IMMANUEL KATALI

### **CONSULTANT'S EXPERTISE**

I.N.K Enviro Consultants cc is the independent firm of consultants that has been appointed by Benguela Petroleum Supplies ccto undertake the environmental impact assessment process.

Immanuel N. Katali, the EIA Lead Practitioner holds a B.Arts (Honors) in Geography, Environmental Studies and Sociology and has over ten years of relevant experience in conducting/managing Environmental Impact Assessments (EIAs), Socio-Economic Impact Assessments (SIA) and compiling Environmental Management Plans (EMPs) in Namibia. Immanuel is certified as an environmental practitioner under the Environmental Assessment Professionals Association of Namibia (EAPAN).

### **DECLARATION OF INDEPENDENCE AND DISCLAIMER**

The consultant herewith declare that this report represents an independent, objective assessment of the environmental impacts associated with the activities of the proposed bulk fuel storage on the request of Benguela.

I.N.K has prepared this report based on an agreed scope of work and acts in all professional matters as an independent environmental consultant to Benguela and exercises all reasonable skill and care in the provision of its professional services in a manner consistent with the level of care and expertise exercised by members of the environmental profession.

The information, statements and commentary contained in this Report have been prepared by I.N.K from information provided by Benguela and from discussions held with stakeholders. I.N.K does not express an opinion as to the accuracy or completeness of the information provided, the assumptions made by the party that provided the information, or any conclusions reached. I.N.K has based this Report on information received or obtained, on the basis that such information is accurate and, where it is represented to I.N.K as such, complete.

I.N.K is not responsible and will not be liable to any other person or organisation for or in relation to any matter dealt within this report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in this report (including without limitation matters arising from any negligent act or omission of I.N.K or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in this report). This report must not be altered or added to without the prior consent of I.N.K and Benguela.

## TABLE OF CONTENTS

1 Introduction .....	5
1.1 Background .....	5
1.2 Motivation (Need and Desirability) .....	5
1.3 Introduction to the Environmental Impact Assessment .....	7
1.4 EIA Process .....	8
1.5 EIA Team .....	9
2 SCOPING METHODOLOGY .....	10
2.1 Information collection .....	10
2.2 Scoping Report .....	10
2.3 Public Participation Process .....	12
2.4 The Project I&APs .....	12
2.5 Steps in the consultation process .....	13
2.6 General Assumptions and Limitations .....	14
3 ENVIRONMENTAL LAWS AND POLICIES .....	15
3.1 Applicable Laws and Policies .....	15
3.2 National Policies and Plans .....	16
3.3 Summary of Applicable Namibian legislation and standards .....	17
3.4 Applicable Listed activities .....	17
4 Description of the current Environment .....	19
4.1 Climatic Conditions .....	19
4.1.1 Temperature .....	19
4.1.2 Precipitation .....	19
4.1.3 Wind .....	19
4.2 Geology and Hydrogeology .....	20
4.3 Surface Water .....	20
4.4 Noise .....	21
4.5 Fauna and Flora .....	21
4.6 Traffic .....	22
4.7 Social and Economic Environment .....	22
4.7.1 Land-use .....	22
4.7.2 Health .....	22
4.7.3 Walvis Bay Economy .....	23
5 DESCRIPTION OF THE PROPOSED fuel retail ACTIVITIES .....	24
5.1 Proposed Fuel Retail Activities .....	24
5.1.1 Construction Equipment .....	24
5.2 Installation of Fuel Tanks .....	24
5.3 Delivery of fuel to the tanks .....	24

SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY

5.4 Oil Tank Capacity .....	24
5.5 Timeframe .....	24
5.6 Employment .....	24
5.7 Staff/Employment and Accommodation .....	24
5.8 Access Roads .....	25
6 Project Alternatives .....	26
6.1 Alternative Site Location .....	26
6.2 The “no-go” option .....	26
7 identification and description of aspects and POTENTIAL environmental impacts .....	27
7.1 Aspect and Impact identification .....	27
8 Environmental Impact Assessment .....	35
8.1 Biodiversity .....	37
8.2 Third Parties’ health and safety .....	38
8.3 Air and Noise Pollution .....	39
8.4 Socio-economic environment .....	40
8.5 Surface Water .....	43
8.6 Groundwater .....	44
8.7 Issue/Impact: Waste Management .....	45
9 Conclusion .....	46
10 References .....	47

## TABLE OF FIGURES

Figure 1 : Locality Map .....	6
Figure 2 : Technical Layout .....	7
Figure 3 : Day time and night time wind roses (SLR, 2016) .....	20
Figure 4 : <i>Arthraerua leubnitziae</i> (Pencil Bush) observed on site .....	22
Figure 4 : <i>Arthraerua leubnitziae</i> stretching along the proposed site .....	22

## LIST OF TABLES

Table 1 : EIA Process .....	8
Table 2 : Scoping report Requirements stipulated in the EIA regulations .....	10
Table 3 : Project Stakeholders .....	12
Table 4 : Consultation process with I&APs and Authorities .....	13
Table 6 : relevant legislation and policies .....	16
Table 7 : Listed activities triggered by the proposed Project .....	18
Table 8 : environmental aspects and Potential impacts .....	28
Table 9 : Assessment Methodology and Criteria .....	35

## 1 INTRODUCTION

### 1.1 Background

Benguela Petroleum Supplies cc (hereinafter referred to as Benguela) intends on obtaining an Environmental Clearance Certificate (ECC) for their proposed development and operation of a bulk fuel storage facility (Diesel, ULP, JET A 1, HFO / VLSFO), with a maximum capacity of 120 000 000 litres in above-ground fuel tanks on a piece of land measuring approximately 10 hectares (ha), located within the North Port of Walvis Bay, Erongo Region Namibia (Figure 1 and 2).

The objective of the proposed project is to support the fuel and transport activities of Walvis Bay by creating an alternative bulk supply of fuel to commercial retail industries such as fuel stations in Walvis Bay and across the country.

Prior to the implementation of the activities, environmental clearance is required from the Ministry of Environment, Forestry and Tourism (MEFT): Department Environmental Affairs (DEA) based on an approved EIA process, in terms of the Environmental Management Act, 2007 (No. 7 of 2007).

I.N.K Enviro Consultants cc, an independent firm of environmental consultants based in Namibia, has been appointed by Benguela to undertake and manage the EIA process.

### 1.2 Motivation (Need and Desirability)

Namibia is spending billions expanding its port in Walvis Bay to secure sea lanes and establish itself as a maritime powerhouse on the continent. Its efforts are also designed to capitalize on the growth in shipping demands, increased cargo volumes, oil and gas sectors, business, recreational uses and more.

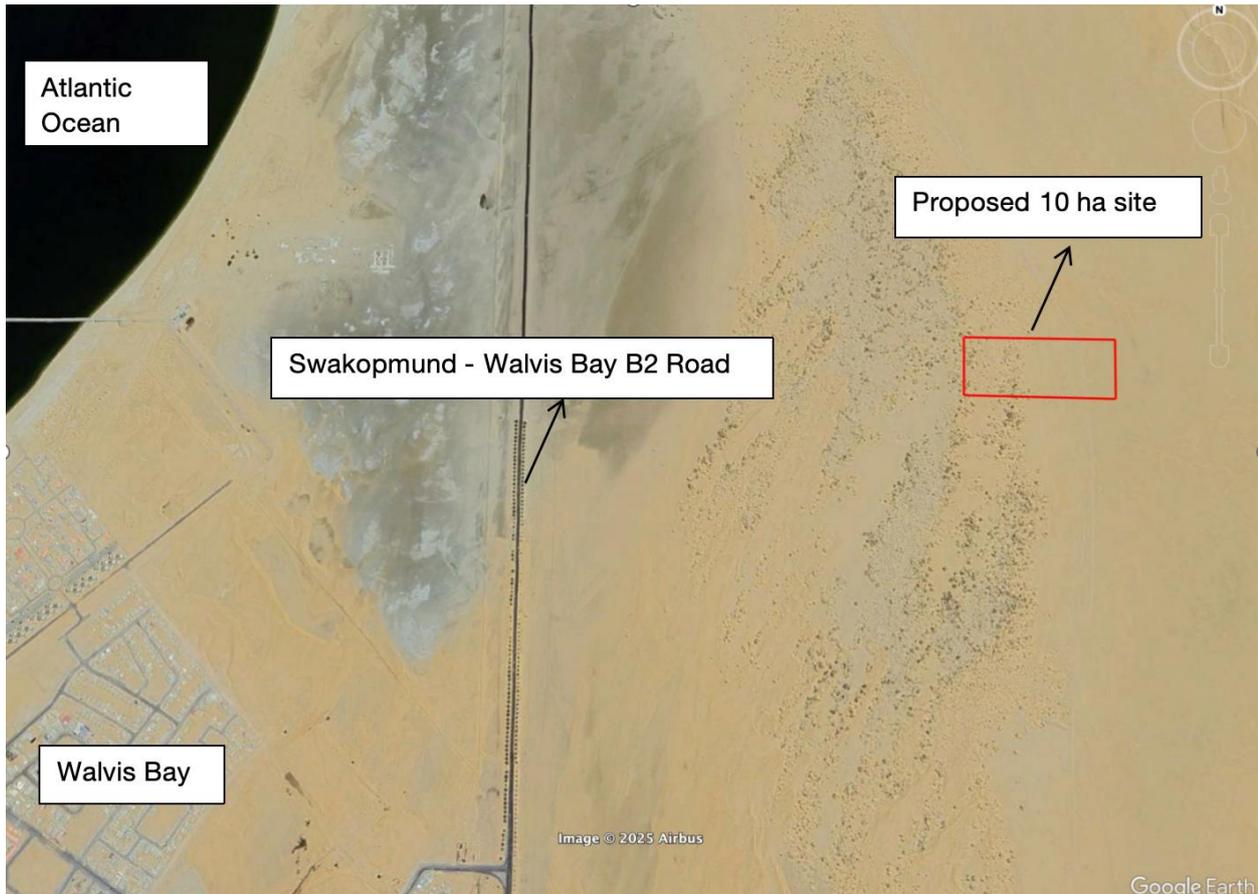
The Walvis Bay port is part of a much bigger ambition for Namibia to become a logistics hub for southern Africa. The current position of the port is neighbouring residential properties located on the outskirts of the port, indicating that the port does not have enough space to expand and create additional storage space to meet growing demands, hence the proposed location of the fuel retail facility.

The project has a great potential to boost Namibia's logistics hub capabilities by providing alternative bulk supply of fuel to commercial retail industries such as fuel stations in Walvis Bay and across the country.

Benguela aims to capitalize on the increase in traffic volumes and rising fuel requirements by developing a fuel retail facility intended to store and supply fuel. The proposed fuel retail facility

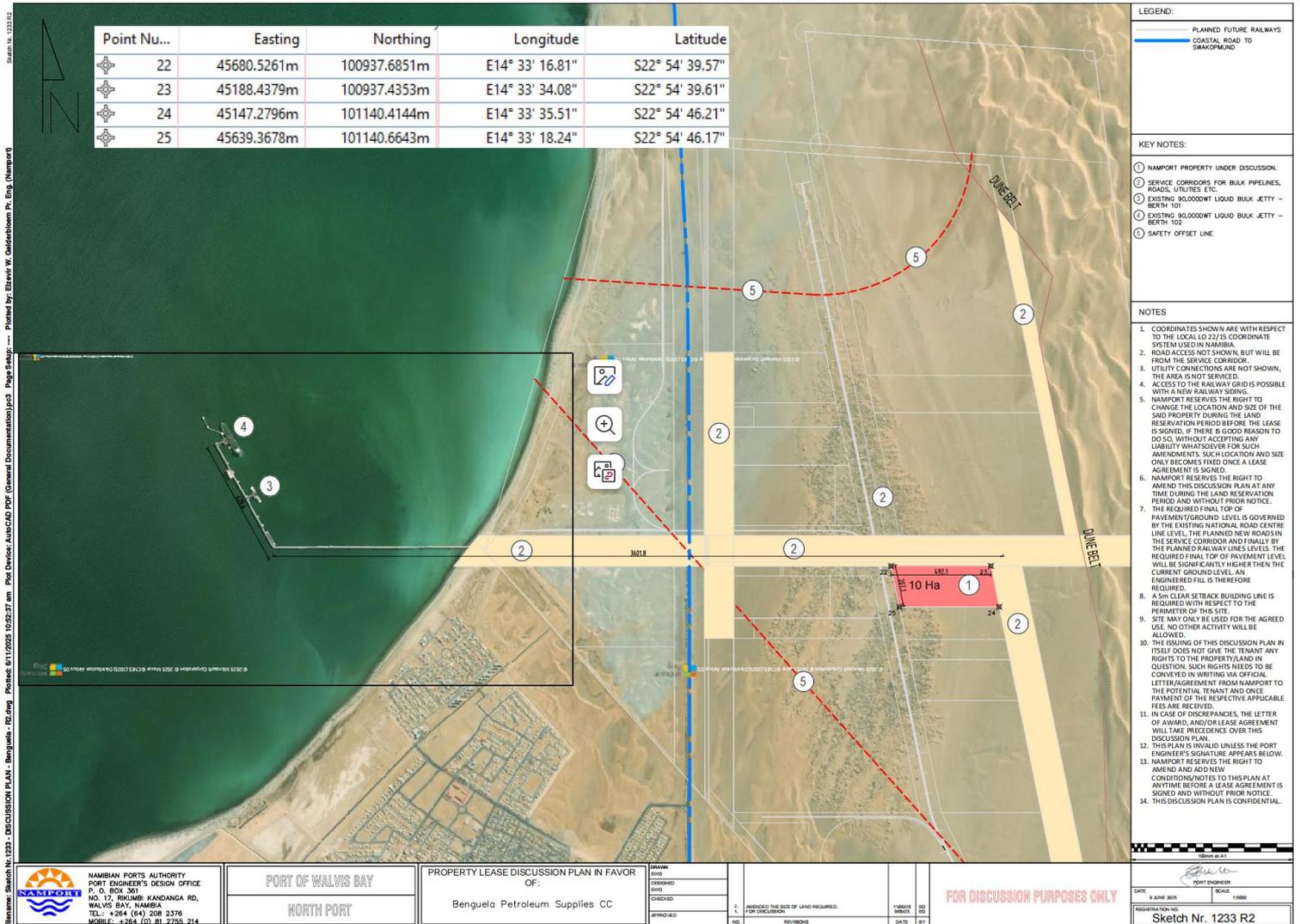
**SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY**

is part of a much bigger ambition for Benguela to become a fuel logistics hub in the energy and transportation industry. The allocated 10 ha makes it sufficient for Benguela to create adequate space to develop the proposed fuel retail facility.



**Figure 1: Locality Map**

**SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY**



**Figure 2: Technical Layout**

**1.3 Introduction to the Environmental Impact Assessment**

Environmental Impact Assessments are regulated by the Ministry of Environment, Forestry and Tourism (MEFT) in terms of the Environmental Management Act, 7 of 2007. This Act was gazetted on 27 December 2007 (Government Gazette No. 3966) and enacted on 6 February 2012. The Environmental Impact Assessment Regulations: Environmental Management Act, 2007 (Government Gazette No. 4878) were promulgated on 6 February 2012.

Prior to the commencement of the proposed activities, an environmental clearance is required from the Ministry of Environment, Forestry and Tourism (MEFT): Department Environmental Affairs (DEA) on the basis of an approved EIA process.

**SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY**

This EIA process is conducted in terms of the Environmental Management Act, 7 of 2007 and the above-mentioned EIA regulations. This process includes: a screening phase and a scoping phase, which will include an impact assessment and an Environmental Management Plan (EMP).

This report is the Scoping Report, with assessment included. The main purpose of this report is to provide information relating to the proposed activities and to indicate which environmental aspects and potential impacts have been identified during the Screening and Scoping phases. This report consists of information obtained from site observations. The potential impacts of the proposed activities (and associated ancillary infrastructure) could therefore be assessed, and the assessment is also included in this report.

It is thought that this Scoping Report (including an assessment of impacts), together with the attached EMP, will provide sufficient information for the MEFT to make an informed decision regarding the proposed project, and whether an environmental clearance certificate can be issued or not.

**1.4 EIA Process**

The EIA Scoping process and corresponding activities are outlined in Table 1

**Table 1: EIA Process**

Objectives	Corresponding activities
<b>Project initiation and Screening phase</b>	
<ul style="list-style-type: none"> <li>• <b>Initiate the screening process</b></li> <li>• <b>Initiate the environmental impact assessment process.</b></li> </ul>	<ul style="list-style-type: none"> <li>• Site Visit</li> <li>• Identify Key Stakeholders</li> <li>• Early identification of environmental aspects and potential impacts associated with the proposed project.</li> </ul>
<b>EIA Phase with combined Scoping and Assessment</b>	
<ul style="list-style-type: none"> <li>• <b>Notify the decision-making authority of the proposed project</b></li> <li>• <b>Identify interested and/or affected parties (I&amp;APs) and involve them in the scoping process through information sharing.</b></li> <li>• <b>Identify potential environmental issues associated with the proposed project.</b></li> <li>• <b>Consider alternatives.</b></li> <li>• <b>Identify any fatal flaws.</b></li> <li>• <b>Determine the terms of reference for additional</b></li> </ul>	<ul style="list-style-type: none"> <li>• Notify government authorities and I&amp;APs of the project and EIA process.</li> <li>• Conduct Public Participation Process</li> <li>• Investigations by technical project team.</li> <li>• Compilation of draft scoping (combined assessment) and EMP reports.</li> <li>• Distribute draft scoping (combined assessment) and EMP reports to authorities and I&amp;APs for review.</li> <li>• Forward the final scoping (combined assessment) and EMP reports and I&amp;APs comments to MET for review.</li> <li>• MEFT review and Record of Decision.</li> </ul>

<p>assessment work.</p> <ul style="list-style-type: none"><li>• Provide a detailed description of the potentially affected environment.</li><li>• Assessment of potential environmental impacts.</li><li>• Design requirements and management and mitigation measures.</li><li>• Receive feedback on application.</li></ul>	
---	--

### 1.5 EIA Team

I.N.K Enviro Consultants cc is the independent environmental consultants that has been appointed by Benguela to undertake environmental impact assessment and related processes.

Immanuel N. Katali, the EIA project manager and lead practitioner, holds a B.Arts (Honours) Degree in Geography, Environmental Studies and Sociology and has over nine years of relevant experience in conducting/managing EIAs, compiling EMPs and Socio-Economic Studies. Immanuel is certified as an environmental practitioner under the Environmental Assessment Professionals Association of Namibia (EAPAN).

## 2 SCOPING METHODOLOGY

### 2.1 Information collection

I.N.K used various information sources to identify and assess the issues associated with the proposed project. These include:

- Site visits by I.N.K.
- Consultation with Project Technical Team.
- Consultation with MEFT via online application system.
- Consultation with I&Aps.
- Google Earth.
- Internet sources.

### 2.2 Scoping Report

The main purpose of this Scoping Report is to indicate which environmental aspects relating to the proposed project might have an impact on the environment, to assess them and to provide management and mitigation measures to avoid or minimize these impacts.

Table 2 outlines the Scoping Report requirements as set out in Section 8 of the Environmental Impact Assessment Regulations that were promulgated in February 2012 in terms of the Environmental Management Act, 7 of 2007.

**Table 2: Scoping report Requirements stipulated in the EIA regulations**

Requirements for a Scoping Report in terms of the February 2012 regulations	Reference in report
(a) the curriculum vitae of the EAPs who prepared the report;	Section 1.4.2 and
(b) a description of the proposed activity;	Section 4
(c) a description of the site on which the activity is to be undertaken and the location of the activity on the site;	Sections 4 & 6
(d) a description of the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed listed activity;	Sections 6, 7
(e) an identification of laws and guidelines that have been considered in the preparation of the Scoping Report;	Section 3
(f) details of the public consultation process conducted in terms of regulation 7(1) in connection with the application, including - (i) the steps that were taken to notify potentially interested and affected parties of the proposed application;	Section 2.3
(g) a description of the need and desirability of the proposed listed activity and any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives have on	Sections 1.3 and 5

**SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY**

the environment and on the community that may be affected by the activity;	
(h) a description and assessment of the significance of any significant effects, including cumulative effects, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the proposed listed activity;	Sections 7
(i) terms of reference for the detailed assessment; and	Section 7
(j) a management plan, which includes - (i) information on any proposed management, mitigation, protection or remedial measures to be undertaken to address the effects on the environment that have been identified including objectives in respect of the rehabilitation of the environment and closure. (ii) as far as is reasonably practicable, measures to rehabilitate the environment affected by the undertaking of the activity or specified activity to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development; and (iii) a description of the manner in which the applicant intends to modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation remedy the cause of pollution or degradation and migration of pollutants.	Separate Document

## 2.3 Public Participation Process

The public participation process for the proposed project is conducted to ensure that all persons and/or organisations that may be affected by, or interested in the proposed project, were informed of the project and could register their views and concerns. By consulting with relevant authorities and I&APs, the range of environmental issues to be considered in this Scoping Report (including the assessment of impacts) has been given specific context and focus.

Included below is a summary of the I&APs consulted, the process that was followed and the issues that were identified.

## 2.4 The Project I&APs

The table below provides a broad list of persons, group of persons or organisations that were informed about the project and were requested to register as I&APs should they be interested and/or affected.

**Table 3: Project Stakeholders**

GOVERNMENT MINISTRIES				
<b>Ministry of Environment, Forestry and Tourism</b>				
	Name	Position	Email	Cell/Tel No
	Saima Angula	Environmental Assessment Specialist: MEFT	<a href="mailto:Saima.Angula@mef.gov.na">Saima.Angula@mef.gov.na</a>	061284 2701
	Damian Nchindo	Chief Conservation Scientist	<a href="mailto:dinchindo@met.na">dinchindo@met.na</a>	0813424606
<b>Ministry of Works and Transport</b>				
	Johannes Muzanima	DPT. Of Maritime Affairs	<a href="mailto:jmuzanima@mwt.gov.na">jmuzanima@mwt.gov.na</a>	064203317 / 0811220532
	Sheyouyuni Fikunawa	Director: Maritime Affairs	Sheyouyuni.Fikunanwa@mwt.gov.na	064203317
<b>Ministry of Industries, Mines and Energy</b>				
	Ben Nangombe	Executive Director	<a href="mailto:BeN.Nangombe@mime.gov.na">BeN.Nangombe@mime.gov.na</a>	0612848219
REGIONAL COUNCIL/S				
<b>Erongo Regional Council</b>				
	Susan Tseibes	Public Relations Officer		0811423447
	Dr. M. Ntelamo	Acting CRO	<a href="mailto:cro@erongorc.gov.na">cro@erongorc.gov.na</a> <a href="mailto:sntelamo@erongorc.gov.na">sntelamo@erongorc.gov.na</a>	0644105729

SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY

LOCAL AUTHORITIES				
<b>Walvis Bay Municipality</b>				
	David Uushona	Manager: Solid Waste and Environmental Management	<a href="mailto:duushona@walvisbaycc.org.na">duushona@walvisbaycc.org.na</a>	064214304
PARASTATALS				
<b>Environment Investment Fund</b>				
	Benedict Libanda	CEO	<a href="mailto:BLibanda@EIF.ORG.NA">BLibanda@EIF.ORG.NA</a> <a href="mailto:OZamuee@EIF.ORG.NA">OZamuee@EIF.ORG.NA</a>	0614317700
<b>Namport</b>				
	Richard Ibwima	Executive Port Operations	<a href="mailto:G.Frans@namport.com.na">G.Frans@namport.com.na</a>	064 208 2219
OTHER				
<b>Namibia Investment Promotion Development Board</b>				
	Nelulu Uaandja	CEO	<a href="mailto:info@nipdb.com">info@nipdb.com</a> / <a href="mailto:catherine.shipushu@nipdb.com">catherine.shipushu@nipdb.com</a>	083338600

## 2.5 Steps in the consultation process

The table below sets out the steps that were followed as part of the consultation process:

**Table 4: Consultation process with I&APs and Authorities**

TASK	DESCRIPTION
<b>Notification - regulatory authorities and IAPs</b>	
Notification to MEFT	I.N.K submitted the Application Form (online system) as a form of project registration and notification to MEFT.
IAP identification	A stakeholder database was developed for the proposed project and ESIA process. Additional I&APs will be updated during the ESIA process as required.
Distribution of background information document (BID)	BIDs were made available to all I&APs on the project's stakeholder database. Copies of the BID were available on request to I.N.K.  The purpose of the BID was to inform I&APs and authorities about the proposed project, the ESIA process, possible environmental impacts and means of providing input into the ESIA process. Attached to the BID

SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY

TASK	DESCRIPTION
<b>Notification - regulatory authorities and IAPs</b>	
	was a registration and response form, which provided I&APs with an opportunity to submit their names, contact details and comments on the project.
Email	Key Stakeholders were notified about the ESIA process via emails.
Newspaper Advertisements	<p>Newspaper advertisements were placed as follows:</p> <ul style="list-style-type: none"> <li>◆ Die Republikein (21 and 28 January 2026)</li> <li>◆ The Namibian Sun (21 and 28 January 2026)</li> <li>◆ Allgemeine Zeitung (21 and 28 January 2026)</li> </ul> 

## 2.6 General Assumptions and Limitations

The key assumptions and limitations of this Report are detailed below.

- ◆ It is assumed that the information provided by Benguela, relating to the project activities is accurate and that the project will be implemented and operated as described.

### 3 ENVIRONMENTAL LAWS AND POLICIES

The Republic of Namibia has five tiers of law and a number of policies relevant to environmental assessment and protection, which includes:

- The Constitution.
- Statutory law.
- Common law.
- Customary law.
- International law.

Relevant policies currently in force include:

- The EIA Policy (1995).
- Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation (1994).
- The National Climate Change Policy of Namibia (September 2010).
- Policy for the Conservation of Biotic Diversity and Habitat Protection (1994).

As the main source of legislation, the Constitution of the Republic of Namibia (1990) makes provision for the creation and enforcement of applicable legislation. In this context and in accordance with its constitution, Namibia has passed numerous laws intended to protect the natural environment and mitigate against adverse environmental impacts.

The management and regulation of the proposed activities falls within the jurisdiction of the Ministry of Mines and Energy (MME), with environmental regulations guided and implemented by the Department of Environmental Affairs (DEA) within the Ministry of Environment, Forestry and Tourism (MEFT).

The section below summarised the various applicable laws and policies, international treaties and protocols.

#### 3.1 Applicable Laws and Policies

In the context of the proposed activities, there are several laws and policies currently applicable. They are reflected in Table 5.

**Table 6: relevant legislation and policies**

YEAR	NAME	Natural Resource Use (energy & water)	Emissions into the air (fumes, dust & odours)	Emissions to land (non-hazardous & hazardous)	Emissions to water (industrial & domestic)	Noise (remote only)	Visual	Vibrations	Impact on Land use	Impact on biodiversity	Impact on Archeology	Emergency situations	Socio-economic	Safety & Health	Other
1990	The Constitution of the Republic of Namibia of 1990	X	X	X	X	X	X	X	X	X	X	X	X	X	
1997	Namibian Water Corporation Act, 12 of 1997	X											X		
2013	Water Resources Management Act 11 of 2013	X			X								X		
2004	National Heritage Act 27 of 2004										X			X	
2007	Environmental Management, Act 7 of 2007	X	X	X	X	X	X	X	X	X	X		X	X	
2012	Regulations promulgated in terms of the Environmental Management, Act 7 of 2007	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1975	Nature Conservation Ordinance 14 of 1975	X			X					X	X				
1976	Atmospheric Pollution Prevention Ordinance 11 of 1976		X												
1995	Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation	X	X	X	X	X	X	X	X	X	X	X		X	
2004	Pollution Control and Waste Management Bill (3rd Draft September 2003)		X	X	X	X									
1990	Petroleum Products and Energy Act, No. 13 of 1990		X	X	X					X				X	X
1974	Hazardous Substance Ordinance No. 14 of 1974	X	X	X						X	X		X		

### 3.2 National Policies and Plans

Namibia's policies provide the framework to the applicable legislation. Whilst policies do not often carry the same legal recognition as official statutes, policies are used in providing support to legal interpretation. Relevant policies and plans currently in force include:

- The EIA Policy (1995).
- Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation (1995).
- White Paper on the Energy Policy, 1998.
- Namibia Vision 2030.

**SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY**

- National Development Plan, 201/2018 – 2021/2022, guided by Vision 2030.
- Policy for the Conservation of Biotic Diversity and Habitat Protection, 1994.
- Namibia's Second National Biodiversity Strategy and Action Plan (2013-2022).
- National Environmental Health Policy (2002).
- National Waste Management Policy (2010).
- The National Climate Change Policy of Namibia (September 2010).
- New Equitable Economic Empowerment Framework Policy, 2011.
- National Rangeland Management Policy and Strategy of 2012

### **3.3 Summary of Applicable Namibian legislation and standards**

In the context of the Project and associated infrastructure, the following legislation is applicable:

- The Public Health Act 36 of 1919.
- Water Act, 1956 (No. 54 of 1956), as amended.
- Explosive Act No. 26 of 1956.
- National Monuments Act 28 of 1969.
- Soil Conservation Act 76 of 1969.
- Nature Conservation Ordinance 14 of 1975.
- Atmospheric Pollution Prevention Ordinance 11 of 1976.
- The Constitution of the Republic of Namibia of 1990.
- Nature Conservation General Amendment Act 1990.
- Foreign Investment Act No. 27 of 1990.
- The Regional Councils Act No. 22 of 1992.
- Nature Conservation Amendment Act 5.
- Namibian Water Corporation Act, No. 12 of 1997.
- Road Traffic and Transport Act, 1999 (No. 22 of 1999).
- Pollution Control and Waste Management Bill (3rd Draft September 2003).
- National Heritage Act 27 of 2004.
- Labour Act, 2007 (No. 11 of 2007).
- Environmental Management, Act 7 of 2007.
- Regulations promulgated in terms of the Environmental Management, Act 7 of 2007.
- Water Resources Management Act 11 of 2013.
- Public and Environmental Health Act No. 1 of 2015.
- Nature Conservation Amendment Act 3.

### **3.4 Applicable Listed activities**

The EIA Regulations promulgated in terms of the Environmental Management Act identify certain activities which could have a substantially detrimental effect on the environment. These listed activities require environmental clearance from MEFT prior to commencing. The following activities identified in the regulations apply to the proposed Project:

Table 7: Listed activities triggered by the proposed Project

LISTED ACTIVITY
9.1 The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substance Ordinance, 1974.



## 4 DESCRIPTION OF THE CURRENT ENVIRONMENT

This section was compiled utilizing the following sources of information:

- ◆ Visual observations during a site visit by I.N.K.
- ◆ Google Earth.
- ◆ Internet sources.

### 4.1 Climatic Conditions

The weather at the coast is significantly different from that to the inland. There is little rain at the coast, the average temperatures are much lower, radiation and sunshine is less and frost is absent. Yet, the winds are stronger and humidity is higher due to frequent fog. The climate of the area is mainly influenced by the Benguela Current and the South Atlantic Anticyclone. The Walvis Bay area experiences over 125 days of fog per year. February, which is the most humid month in Walvis Bay, can reach over 90% humidity whereas June is 60-70% humid.

#### 4.1.1 Temperature

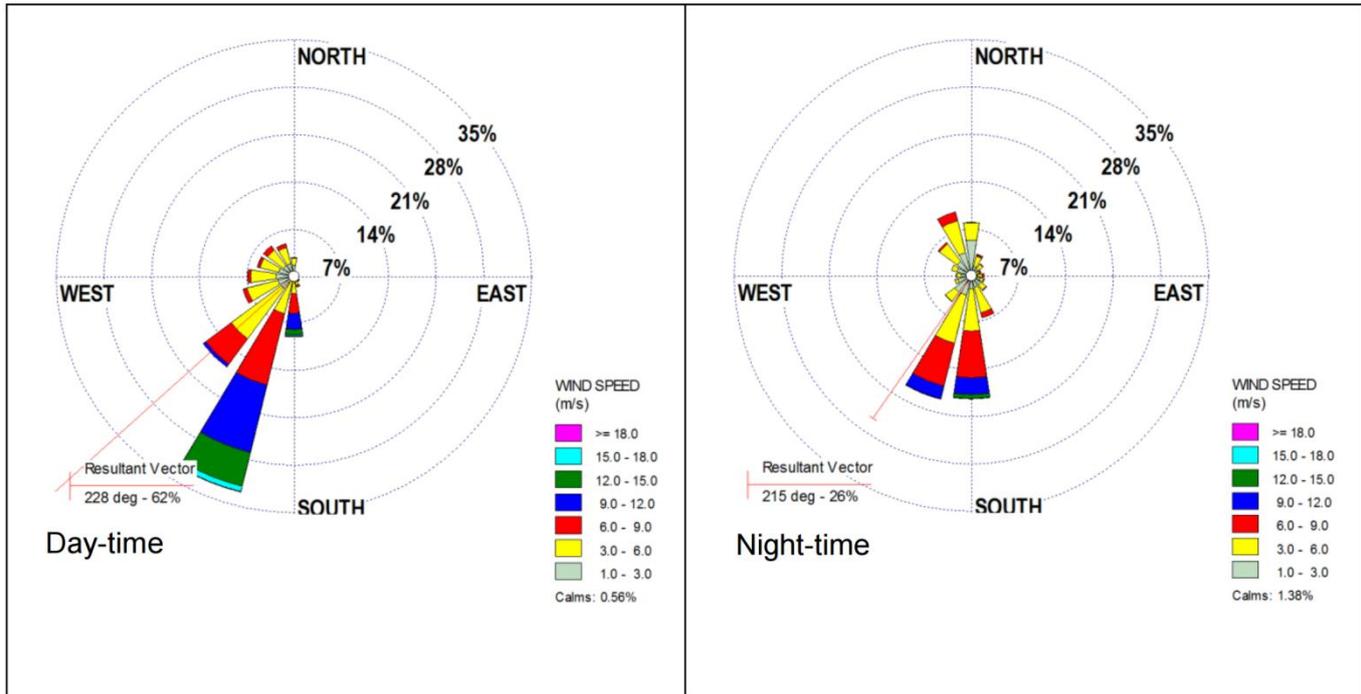
The average annual temperature is less than 16°C. The sites, as well as the rest of Walvis Bay are situated within the Coastal Fog Zone. This zone forms a band along the coast of approximately 20 km in width. As a result of this, the climate is predominantly cool and humid with frequent fog occurring.

#### 4.1.2 Precipitation

The mean annual precipitation (MAP) at the coast is very low, with much of the precipitation being associated with fog (the Atlas of Namibia quotes the average number of fog days at Walvis Bay as 146) and only occasional rainfall events. The Meteorological Office had a rainfall station at Pelican Point for a number of years and the record from this shows the MAP is 9.5 mm, while the median is 3.8 mm. The monthly evaporation for all months is significantly higher than the rainfall, indicating that the area is a water negative area.

#### 4.1.3 Wind

Wind is a dominating feature of the coast. The presence of the subtropical South Atlantic Anticyclone (SAA) off the coast of Namibia strongly influences the wind pattern, generating gale force winds along the coast in all seasons, but most frequently during mid-summer and spring. Although their strength decreases inland, their effect is noticeable for distances of up to 200 km from the coast. The daytime and night time wind roses for Walvis Bay are provided in Figure 5.



**Figure 3: Day time and night time wind roses (SLR, 2016)**

The prevailing wind direction at Walvis Bay is from the south-southwest, southwest and the south. During the day the south-southwesterly winds were more dominant with a shift to more frequent southerly winds during night-time. As is typical of night-time conditions the percentage calm conditions increase and the wind speeds decrease. Day-time wind speeds exceeding 5.4 m/s occurred for 32% of the time with the maximum recorded at 22.5 m/s.

## 4.2 Geology and Hydrogeology

The Walvis Bay area is underlain by Late Quaternary to Holocene unconsolidated sediments, which are a product of the modern Benguela Ecosystem and its interaction with the adjacent hinterland and the Kuiseb River and is therefore a product of fluvial, estuarine, coastal and aeolian processes. Bedrock of the Swakop Group, part of the Damara Sequence, is expected to be located approx. 60 m below ground level and hence any aquifer contained within the rocks is going to be as deep.

## 4.3 Surface Water

The study area is located in the lower part of the Kuiseb River catchment, but the Project site is located in a municipal zone which does not have any natural drainage pattern.

#### 4.4 Noise

The only source of disturbance in the vicinity originates from the vehicles travelling on the Walvis Bay - Swakopmund B2 road and other recreational activities such as off road 4x4 driving. The prevailing sources of noise within and in the proximity of the project site encompass natural sounds produced by the wind, the movement of vehicles on the public road network, and the noise from the day-to-day recreational activities. The potential recipients of noise are the neighboring residential community, though located approximately 1.8 - 2 km from the proposed site. The receptiveness of noise recipients typically escalates during the night when the environment is tranquil, and ambient noise levels are at their minimum. The standard daytime noise levels in an industrial zone are recorded at 70 decibels (Safetch, 2009).

#### 4.5 Fauna and Flora

##### *The Coastal Hummock Species*

The coastal hummock belt refers to a narrow stretch of area from the high-water mark, directly inland from the littoral zone. The inland site hosts the primary vegetation species which are very distinct and dominated by *Arthroerua leubnitziaec*(Figures 16).

Hummocks are critical landforms that enhance desert biodiversity by retaining soil moisture, moderating temperatures, and reducing wind erosion.

The ecological significance of the hummocks is profound, serving as a buffer zone that protects inland habitats from saltwater intrusion and erosion. These ecosystems are not only pivotal for local wildlife, providing essential habitat for numerous bird and small mammal species, but they also play a critical role in nutrient cycling. The unique soil composition here, often characterized by salinity and specific organic matter, supports the growth of halophytes and other specialized plant species.



**Figure 4: *Arthroerua leubnitziae* (Pencil Bush) observed on site**



**Figure 4: *Arthroerua leubnitziae* stretching along the proposed site**

#### **4.6 Traffic**

The traffic observed is the vehicles traveling on the Walvis Bay - Swakopmund B2 road.

#### **4.7 Social and Economic Environment**

##### **4.7.1 Land-use**

The surrounding terrain at the site consist of urban residential housing situated approximately 1.8 - 2 km to the southwest of the proposed site. The surrounding landscape is characterized by its captivating natural beauty, where the arid terrain meets the coastline.. Refer to figure 1.

##### **4.7.2 Health**

Walvis Bay has a main district government hospital and a private hospital, the Kuisebmond health centre and three clinics – Narraville, Coastal and Walvis Bay clinics. The main health

challenges as listed by the Ministry of Health and Social Services are HIV/AIDS, TB, substance abuse, respiratory system diseases and children in need of care.

#### 4.7.3 Walvis Bay Economy

The economy of the town is largely built around fishing, the port, tourism and salt production.



## 5 DESCRIPTION OF THE PROPOSED FUEL RETAIL ACTIVITIES

### 5.1 Proposed Fuel Retail Activities

The proposed activities will include the following primary activities/infrastructure.

- Employment.
- Removal and stockpiling of topsoil.
- Use of heavy equipment/machinery for excavations.
- Fencing of the project site.

#### 5.1.1 Construction Equipment

The primary fleet consists of all the equipment required to perform construction; all other equipment required is classified as secondary equipment. The primary equipment includes: -

- excavators.
- haul trucks.

The ancillary equipment utilised by the activities contractor are as follows:

- grader.
- front end loader.

### 5.2 Installation of Fuel Tanks

Puma service company will assist with the installation of the fuel storage tanks.

### 5.3 Delivery of fuel to the tanks

The puma fuel company will oversee all the delivery job. Fuel will be delivered to site by fuel truck and will be pumped into the fuel storage tanks.

### 5.4 Oil Tank Capacity

The fuel supply tanks will consist of diesel, ULP, JET A 1, HFO / VLSFO, with a maximum capacity of 120 000 000 litres in above-ground fuel tanks

### 5.5 Timeframe

It will take approximately 2 months for the installation.

### 5.6 Employment

About 18 employees will be required for the installation phase and 10 for the operations phase.

### 5.7 Staff/Employment and Accommodation

The construction and operational workforce will be accommodated in Swakopmund and Walvis Bay.

## 5.8 Access Roads

The site is located adjacent to the Walvis Bay - Swakopmund B2 tarred road. Benguela will engage with the Roads Authority to create an entry and exit point from the facility into the B2 tarred road.



## 6 PROJECT ALTERNATIVES

Due to the nature and the scale of the proposed project, limited alternative options exist as described below.

### 6.1 Alternative Site Location

As indicated in section 1.2, The Walvis Bay port is part of a much bigger ambition for Namibia to become a logistics hub for southern Africa. The current position of the port is neighbouring residential properties located on the outskirts of the port, indicating that the port does not have enough space to expand and create additional storage space to meet growing demands, hence the proposed location of the fuel retail facility. Thus, the identified land offers sufficient room to develop the fuel retail facility and address this escalating need.

Failing to execute the project at this particular site with favorable conditions would consequently impose constraints on the fuel storage capacities of Walvis Bay.

### 6.2 The “no-go” option

Even though the proposed activity may result in potential negative environmental and social impacts which are discussed in detail in Sections 7 & 8 of this report, it can be concluded that proceeding with this proposed project will have benefits at the local, regional and national scale, which will result in significant positive social and economic impacts such as employment, investment, economic boost and procurement of goods and services.

## 7 IDENTIFICATION AND DESCRIPTION OF ASPECTS AND POTENTIAL ENVIRONMENTAL IMPACTS

### 7.1 Aspect and Impact identification

Table 7 provides a summary of all the operational activities/facilities and the potential impacts associated with the proposed fuel retail activities.

The relevance of the potential impacts (“screening”) is also presented in the tables below to determine if certain aspects need to be assessed in further detail (Section 8 of this report). Because of the existing baseline information obtained from the various studies conducted in the past; the detailed history of Environmental Applications; potential impacts of a similar nature have been assessed as part of this EIA process. Also, the relevant management and mitigation measures, to minimise or prevent the potential impacts, will be provided in Section 8 of this report.

Table 8: environmental aspects and Potential impacts

ACTIVITY/FACILITY	ASPECT	POTENTIAL ENVIRONMENTAL IMPACT	RELEVANCE (SCREENING) OF POTENTIAL IMPACT	Ref
Land Preparation	Clearing of vegetation and soil stripping (earthmoving equipment)	<p>Potential impact on biodiversity and heritage sites (physical impacts and general disturbance)</p> <ul style="list-style-type: none"> <li>• Loss of fertile soil</li> <li>• Loss of habitat</li> <li>• Loss of biodiversity</li> <li>• Loss of heritage sites</li> </ul>	<p>The potential impacts relating to the physical destruction and disturbance of the hummock species is assessed as having a high significance (without mitigation) reducing to high-medium (with mitigation). However, no heritage sites have been identified during the assessment and public participation process. Therefore, heritage is not assessed further,</p> <p>Taking the above into consideration, the potential physical impacts on biodiversity have been assessed (refer to Section 8). The related management and mitigation measures are stipulated in the EMP.</p>	<b>R01</b>
		<p>Impact on groundwater and surface water quality</p>	<p>The proposed activities pose the risk of contamination of water resources, mainly through accidental spills of hydrocarbons etc. However, due to the nature of the project, there is a high risk of hydrocarbon spillages.</p> <p>The potential impacts on groundwater have been assessed as part of this EIA. Refer to Section 8 for the assessment of the potential impacts relating to surface water and groundwater.</p> <p>The related management and mitigation measures as presented in the EMP.</p>	<b>R02</b>
	Truck movement causing dust	<p>Increase in dust levels/health impacts</p>	<p>The air quality impacts are expected to be high and significant for the project, due to the strong winds experienced in the desert area. The potential impacts of dust generation have been assessed as part of this EIA. Refer to Section 8 for the assessment of the potential impacts</p>	<b>R03</b>

SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY

ACTIVITY/FACILITY	ASPECT	POTENTIAL ENVIRONMENTAL IMPACT	RELEVANCE (SCREENING) OF POTENTIAL IMPACT	Ref
		<ul style="list-style-type: none"> <li>Nuisance / Air pollution</li> <li>Increased risk of respiratory diseases</li> </ul>	relating to air quality. The related management and mitigation measures are stipulated in the updated EMP.	
	Fuel retail activities causing noise	Increase in disturbing noise levels (nuisance) <ul style="list-style-type: none"> <li>Noise pollution</li> </ul>	The anticipated noise related impacts are expected to be less significant due to the current and high traffic volume and constant movement of vehicles on the B2 road, the potential impacts of noise generation have been assessed as part of this EIA. Refer to Section 8 for the assessment of the potential impacts relating to noise. The related management and mitigation measures are stipulated in the updated EMP.	<b>R04</b>
	Dust and other air emissions	Increase in dust levels (nuisance & health impacts)	Refer to reference R03 (similar comments apply).	<b>R05</b>
	Movement of haul trucks on roads	3 <sup>rd</sup> party safety <ul style="list-style-type: none"> <li>Increased risk of accidents</li> </ul>	Given the significantly small scope and scale of the activities, this issue will not be further assessed in this report.	<b>R06</b>
	Oil and diesel spillages from earth moving equipment	<ul style="list-style-type: none"> <li>Contamination of surface water and groundwater resources</li> <li>Soil pollution</li> </ul>	The potential for hydrocarbon spillages from earthmoving equipment (also during the refuelling of machinery and equipment) is always a possibility. Hydrocarbon spillages have the potential to cause an impact on soil, and even groundwater.  Even though the proposed project is small in scale and in scope (with assumed lower impacts), the potential pollution related impacts on soil, surface water and groundwater have been assessed as part of this EIA. Refer to Section 8 for the assessment of these potential impacts. The related management and mitigation measures are stipulated in the	<b>R07</b>

SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY

ACTIVITY/FACILITY	ASPECT	POTENTIAL ENVIRONMENTAL IMPACT	RELEVANCE (SCREENING) OF POTENTIAL IMPACT	Ref
			updated EMP	
		Potential impact on archaeological sites	Refer to reference R01 (similar comments apply).	<b>R08</b>
	Visual	Increased visual impact <ul style="list-style-type: none"> <li>Loss of aesthetics</li> </ul>	Given that the proposed project is smaller in scale and in scope (with assumed lower visual impacts), the potential visual impacts have been assessed as part of this EIA. Refer to Section 8 for the assessment of these potential impacts. The related management and mitigation measures are stipulated in the updated EMP.	<b>R09</b>
Transport, storage and handling of fuel	Increase in vehicular movement	Increased traffic impacts on the roads	Given that the site is located adjacent to the Swakopmund - Walvis Bay B2 tarred road. The potential visual impacts have been assessed as part of this EIA. Refer to Section 8 for the assessment of these potential impacts. The related management and mitigation measures are stipulated in the updated EMP.	<b>R10</b>
	Potential spillage/leakage of hydrocarbons etc.	Pollution of surface water resources, groundwater resources and soil contamination	Refer to reference R02 (similar comments apply).	<b>R11</b>
General activities, offices and buildings, ablution facilities, domestic waste generation	Waste disposal	Emissions to land, impact on biodiversity, environmental degradation and nuisance impacts.  Health and Safety impacts on people.	Due to the scope and scale of the proposed project, the type and volumes of waste will be minimal. The operational workforce will be approximately 11 people and therefore overall waste generation is expected to be limited. The recyclable portion of general waste (including scrap metal, wood, paper, plastic, glass and cans) will likely be separated at source and will be removed from site to appropriate recycling facilities. Endeavours will be made to return e-waste and chemical containers to the suppliers. Waste bins will be removed from the site and the contents dumped in the Walvis Bay landfill. The waste will be periodically covered to prevent windblown litter and	<b>R12</b>

SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY

ACTIVITY/FACILITY	ASPECT	POTENTIAL ENVIRONMENTAL IMPACT	RELEVANCE (SCREENING) OF POTENTIAL IMPACT	Ref
			<p>scavengers.</p> <p>All hazardous waste will be removed from site and disposed of at a licensed hazardous waste disposal site in Walvis Bay.</p> <p>Due to the significance of the potential impact as a result of hydrocarbons, pollution has been assessed further in section 8.</p>	

SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY

ACTIVITY/FACILITY	ASPECT	POTENTIAL ENVIRONMENTAL IMPACT	RELEVANCE (SCREENING) OF POTENTIAL IMPACT	Ref
General operations, employment and resource management	Economic impacts In-migration and community health /safety and security	Impacts on local economy, informal settlements, <ul style="list-style-type: none"> <li>• Increased employment opportunities</li> <li>• Opportunity for skills transfers</li> <li>• Improvement in the business environment</li> <li>• increasing pressure on government services,</li> <li>• increased demand for basic infrastructure.</li> </ul>	The significance of the socio-economic impacts is assessed. Even though the proposed project is small in scale and in scope (with assumed low impacts), the potential socio-economic impacts (positive and negative) have been assessed as part of this EIA. Refer to Section 8 for the assessment of these potential impacts. The related management and mitigation measures are stipulated in the updated EMP	R13

SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED DEVELOPMENT AND OPERATION OF A BULK FUEL STORAGE FACILITY

ACTIVITY/FACILITY	ASPECT	POTENTIAL ENVIRONMENTAL IMPACT	RELEVANCE (SCREENING) OF POTENTIAL IMPACT	Ref
General Operational Health and Safety	Impacts on 3 <sup>rd</sup> Party Health and Safety	Fire and Explosions	The proposed activities include the handling and storage of fuel which is hazardous and pose a risk of fire and explosion if not appropriately handled. Due to the significance of the potential impact as a result of fire and explosion risks; the health and safety has been assessed further in section 8.	

With reference to Table 7 above, the following issues were identified as requiring assessment.

- Physical impacts on biodiversity due to bush clearing activities.
- Third party health and safety.
- Air quality impacts (dust).
- Noise.
- Waste Management.

Refer to Section 8 of this Scoping Report for an assessment of the above-mentioned issues.



## 8 ENVIRONMENTAL IMPACT ASSESSMENT

Table 8 shows the methodology used to conduct the qualitative assessment. Both the criteria used to assess the impacts and the method of determining the significance of the impacts is outlined. This method complies with the Environmental Impact Assessment Regulations: Environmental Management Act, 2007 (Government Gazette No. 4878) EIA regulations. Part A provides the approach for determining impact consequence (combining severity, spatial scale and duration) and impact significance (the overall rating of the impact). Impact consequences and significance are determined from Part B and C. The interpretation of the impact significance is given in Part D. Both mitigated and unmitigated scenarios are considered for each impact.

**Table 9: Assessment Methodology and Criteria**

PART A: DEFINITION AND CRITERIA					
<b>Definition of SIGNIFICANCE</b>		<b>Significance = consequence x probability</b>			
<b>Definition of CONSEQUENCE</b>		<b>Consequence is a function of severity, spatial extent and duration</b>			
<b>Criteria for ranking of the SEVERITY/NATURE of environmental impacts</b>	<b>H</b>	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action. Irreplaceable loss of resources.			
	<b>M</b>	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints. Noticeable loss of resources.			
	<b>L</b>	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints. Limited loss of resources.			
	<b>L+</b>	Minor improvement. Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.			
	<b>M+</b>	Moderate improvement. Will be within or better than the recommended level. No observed reaction.			
	<b>H+</b>	Substantial improvement. Will be within or better than the recommended level. Favourable publicity.			
<b>Criteria for ranking the DURATION of impacts</b>	<b>L</b>	Quickly reversible. Less than the project life. Short term			
	<b>M</b>	Reversible over time. Life of the project. Medium term			
	<b>H</b>	Permanent. Beyond closure. Long term.			
<b>Criteria for ranking the SPATIAL SCALE of impacts</b>	<b>L</b>	Localised - Within the site boundary.			
	<b>M</b>	Fairly widespread – Beyond the site boundary. Within 20 km of the site boundary.			
	<b>H</b>	Widespread – Far beyond site boundary. Regional/ national			
PART B: DETERACTIVITIES CONSEQUENCE					
SEVERITY = L					
<b>DURATION</b>	Long term	<b>H</b>	Medium	Medium	Medium
	Medium term	<b>M</b>	Low	Low	Medium
	Short term	<b>L</b>	Low	Low	Medium
SEVERITY = M					
<b>DURATION</b>	Long term	<b>H</b>	Medium	High	High
	Medium term	<b>M</b>	Medium	Medium	High
	Short term	<b>L</b>	Low	Medium	Medium
SEVERITY = H					
<b>DURATION</b>	Long term	<b>H</b>	High	High	High
	Medium term	<b>M</b>	Medium	Medium	High
	Short term	<b>L</b>	Medium	Medium	High
			<b>L</b>	<b>M</b>	<b>H</b>
			Localised Within site boundary Site	Fairly widespread Beyond site boundary Local	Widespread Far beyond site boundary Regional/ national
SPATIAL SCALE					
PART C: DETERACTIVITIES SIGNIFICANCE					
<b>PROBABILITY (of exposure to)</b>	Definite/ Continuous	<b>H</b>	Medium	Medium	High
	Possible/ frequent	<b>M</b>	Medium	Medium	High

impacts)	Unlikely/ seldom	L	Low	Low	Medium
			L	M	H
<b>CONSEQUENCE</b>					
<b>PART D: INTERPRETATION OF SIGNIFICANCE</b>					
<b>Significance</b>	<b>Decision guideline</b>				
High	It would influence the decision regardless of any possible mitigation.				
Medium	It should have an influence on the decision unless it is mitigated.				
Low	It will not have an influence on the decision.				



## 8.1 Biodiversity

The section assesses the physical impacts on biodiversity associated with the proposed activities.

### *Issue: physical impacts on biodiversity (hummock species)*

#### *Introduction*

The land clearing activities associated with the proposed activities has the potential to impact the hummock species in the broadest sense. In this regard, the discussion relates to the physical destruction of specific biodiversity areas, of linkages between biodiversity areas and of related species which are significant because of their status, and/or the role that they play in the ecosystem.

#### *Assessment of impact*

##### *Severity*

In the unmitigated scenario, the clearing of the bush as well as other project related activities will result in the following impacts:

- Loss of habitats.
- Loss of shelter for smaller vertebrates, especially reptiles.
- Direct impacts to birds through removal of nest sites in plants and on the ground.
- Destruction of plants.
- Animal mortality resulting from vehicles and machinery strikes as well as through clearing of land (i.e. slow-moving animals and dormant invertebrates);
- Vehicle tracks damage the soil and inhibit root growth.
- Impacts on topsoil (i.e. damage / loss of topsoil).

In the unmitigated scenario, the severity is expected to be medium. With the implementation of mitigation measures, the severity can be reduced to low.

##### *Duration*

In the unmitigated scenario the loss of biodiversity and related functionality and subsequent colonisation of alien/invasive species is long term and will continue after the life of the operation. This is a high duration. In the mitigated scenario, the duration reduces to medium.

##### *Spatial scale*

Biodiversity processes are not confined to the project area. Due to ecosystem linkages and movement of animals, the loss of biodiversity has a medium rating.

##### *Consequence*

In the unmitigated scenario, the consequence is high. With mitigation, the consequence is low.

### **Probability**

In the unmitigated scenario, the probability of the impact occurring is high. With the implementation of mitigation measures, the probability reduces to low.

### **Significance**

The significance of this potential impact is medium in the unmitigated scenario and low in the mitigated scenario.

Tabulated summary of the assessed impact – physical destruction of biodiversity

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	M	H	M	H	M	M
Mitigated	L	M	M	L	L	L

## **8.2 Third Parties' health and safety**

### **ISSUE: Fire and Explosion Risks**

#### **Introduction**

This involves activities which can lead to having an impact on third parties' health and safety.

#### **Assessment of impact**

##### **Severity**

The unmitigated scenario presents a potential risk of injury and/or death to both animals and third parties. This is a potential high severity. In the mitigated scenario the severity reduces to low as access control will be implemented at the site to prevent and/or mitigate impacts.

##### **Duration**

In the context of this assessment, death or permanent injury is considered a long term, permanent impact. This is a high duration.

##### **Spatial scale**

Direct impacts will be located within the site boundary, with or without mitigation. The potential indirect impacts could extend beyond the site boundary to the families/communities to which the injured people and/or animals belong. This is a medium spatial scale.

##### **Consequence**

The consequence is high in both the unmitigated and mitigated scenarios.

##### **Probability**

In the unmitigated scenario, without management interventions, the probability of the impact occurring is expected to be medium due to the remoteness of the site. The mitigation measures

focus on limiting access to third parties and animals which reduces the probability of the impact occurring to low.

### **Significance**

In the unmitigated scenario, the significance of this potential impact is high. With the implementation of mitigation measures, the significance of this potential impact is medium because the probability of the potential impact occurring is reduced.

Tabulated summary of the assessed impact – dangerous excavations

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	H	H	M	H	M	H
Mitigated	L	H	M	H	L	M

## **8.3 Air and Noise Pollution**

### **ISSUE: Air pollution**

#### **Introduction**

The activities have the potential to cause additional noise and dust related impacts due to the truck movement and strong winds.

#### **Assessment of impact**

##### **Severity**

The main source of nuisance of noise and dust associated with the proposed project is caused by truck movement.

In the unmitigated scenario, where the community members reside, the severity of this impact is high.

In the mitigated scenario the severity reduces to low as an alternative route further away from the households (more than 1 km) will be followed (or third parties are relocated) and additional noise and dust mitigation measures will be applied.

##### **Duration**

In both the unmitigated and mitigated scenarios, if human health impacts occur, these are potentially medium to long term in nature. This is a medium to high duration. Dust fallout impacts are of medium (nuisance) duration.

##### **Spatial scale**

Cumulative noise and air quality impacts are expected to be limited to the site boundary. This is a low spatial scale.

##### **Consequence**

In the unmitigated scenario, the consequence is medium to high. With the implementation of mitigation measures, the consequence reduces to low as the severity is reduced.

### **Probability**

The health and nuisance impact probability are linked to the probability of ambient concentrations exceeding acceptable limits at third party receptors. Given that acceptable limits relating to specifically nuisance impacts will most likely be exceeded in the unmitigated scenario, the probability is high. Given the small scale and limited duration of the activities, the likelihood of health-related impacts is possible in the unmitigated scenario. With mitigation the probability reduces to low.

### **Significance**

In the unmitigated scenario, the significance of the potential impact is medium high. In the mitigated scenario, the significance reduces to low.

Tabulated summary of the assessed air quality impacts – dust fallout

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	H	M-H	L	M-H	H	M-H
Mitigated	L	M	L	L	L	L

## **8.4 Socio-economic environment**

### **Socio-Economic Benefits**

#### **Introduction**

The project has the potential to create socio-economic benefits through employment creation and economic contributions. The benefits include employment opportunities, skills and development training and indirect capital injection into businesses in Walvis Bay and overall Erongo Region.

The project has potential to create employment, particularly for unskilled and semi-skilled labour.

Due to the fact that social impacts cannot be assessed in isolation, the assessments presented below are cumulative.

#### **Severity**

The proposed project will contribute to the economy in the following positive ways:

Direct benefits include the sales of services provided by the operations; direct number of persons employed and their wages and salaries, taxes paid, and profits earned.

The provision of products and services to the project in order to produce, as well as the inputs purchased by the upstream supply chain will provide indirect economic benefits.

#### **Impact on Government revenue**

The project will be responsible for corporate tax, sales tax and import duties. Some additional revenue will be gathered from the personal income tax of direct employees, their municipal rates, and VAT on goods and services they purchase, similarly for other employees in the supply chain of goods and services.

**Duration**

In the normal course, the direct positive economic impacts associated with the project will occur for the life of operations. After decommissioning and closure there will be limited opportunities through aftercare and monitoring activities. The project would have contributed to the establishment of a critical economic mass and hence the benefits of wealth creation and a better skilled workforce are expected to continue beyond the life of operations.

Quantitatively assessing the post closure impacts is not possible at this stage as there are a number of important unknown factors such as the general state of the future economy (local, national and world-wide) and the future state of the energy and other industrial sectors.

Skills development of local people would be for the long-term, and therefore, the duration of the positive impacts is **positive high**.

**Scale**

In both the unmitigated and mitigated scenarios, the impact will be experienced both in the region and throughout Namibia. The spatial scale is widespread beyond the project site and is therefore classified as high.

The severity and scale would therefore be **positive high**.

**Consequence**

The consequence of these potential positive impacts is **positive high**.

**Probability**

The probability of the positive impacts is considered **positive high**.

**Significance**

The significance of the positive impacts is **positive high**, particularly if local people are employed.

Summary of cumulative Positive Impacts on Socio-Economic Environment

MITIGATION	SEVERITY	DURATION	SPATIAL SCALE	CONSEQUENCE	PROBABILITY OF OCCURRENCE	SIGNIFICANCE
Unmitigated	+H	+H	+H	+H	+H	+H
Mitigated	H	H	H	H	H	H+

## *Issue: Negative Impacts on the Socio-economic Environment*

### *Introduction*

Although the project may benefit the socio-economic environment, the project may also draw people to the town (in-migration), which may place pressure on existing services and opportunities and may create health and safety issues, such as housing, health, sanitation and educational facilities. The influx of people may also result in an increase in negative social behaviours including an increase in the crime rate. It may also lead to increase in the spread of diseases.

### *Severity*

The project is likely to stimulate a considerable influx of jobseekers. In-migration usually leads to an increased incidence of social ills including alcoholism, drug abuse, prostitution, gambling and criminality. Alcohol abuse is part of the accepted social norm in Namibia and is often stimulated by cash earnings which increase the likelihood of domestic violence (usually against women and children), unprotected sex and the spread of HIV. The influx of job seekers may increase over-crowding which increases the spread of TB.

Most of the seasonal workforce is unlikely to bring their families for a short-term contract. Management must therefore encourage local employment. There will be an increased demand on existing government infrastructure, in particular housing and medical facilities as a result of the project.

In the unmitigated scenario, the inward migration issue is predicted to have a cumulative **medium** severity. In the mitigated scenario, the inward migration severity may reduce to **low**.

### *Duration*

In the normal course, these social impacts associated with the project will occur for the life of the operations. However, issues associated with inward migration can become self-feeding and are likely to extend for a much longer period.

The negative impacts, if not kept in check and mitigated, will be **medium**. If mitigated in conjunction with the Karasburg Town Council, the impacts could be reduced to **low**.

### *Scale*

In both the unmitigated and mitigated scenarios, the impacts of inward migration and pressure on Government services will be felt mainly in the region. The spatial scale is therefore **medium** but can be reduced to **low** through mitigation.

### *Consequence*

The consequence of the negative impacts will be **medium** but if mitigated, then **low**.

### *Probability*

The probability of the negative impacts is considered **medium** if unmitigated, and **medium** to **low** if mitigated.

### Significance

The probability of the negative impacts is considered **medium** but if mitigated, the impacts are considered to be **medium to low**.

Summary of cumulative negative Impacts on Socio-Economic Environment

MITIGATION	SEVERITY	DURATION	SPATIAL SCALE	CONSEQUENCE	PROBABILITY OF OCCURRENCE	SIGNIFICANCE
Unmitigated	M	M	M	M	M	M
Mitigated	L	L	L	L	M-L	M-L

## 8.5 Surface Water

### Issue: Pollution of surface water runoff

This section addresses the possible impacts of the proposed project on surface water quality. The main factors which would affect the water quality are the hydrocarbons/fuels from tanks, trucks and which would be stored.

The unmitigated impact was assessed as medium significance. Recommended mitigation measures would consist of all contact storm water generated on site being collected by perimeter berms and channelled into other systems.

### Severity

Possible pollution transported downstream from irrigation farm to Okavango River. Possible deterioration especially close to site, so severity is medium in the unmitigated case reducing to low in the mitigated case.

### Duration

The duration of potential for pollution is for the life of the irrigation farm project, so medium impact in both the unmitigated and the mitigated cases.

### Spatial Scale

Beyond the site boundary possibly down to the Okavango River, but strong dilution effect of Okavango, hence medium influence in the both the unmitigated and the mitigated cases.

### Consequence

Based on the above assessment the detractivities consequence is medium in the unmitigated case and low in the mitigated case.

### Probability

Probability of occurrence is medium in the unmitigated case and low in the mitigated case.

### **Significance**

Summarising the above assessment, the overall significance is rated as medium in the unmitigated case and low in the mitigated case

<b>MITIGATION</b>	<b>SEVERITY</b>	<b>DURATION</b>	<b>SPATIAL SCALE</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY OF OCCURRENCE</b>	<b>SIGNIFICANCE</b>
<b>Unmitigated</b>	M	M	M	M	M	M
<b>Mitigated</b>	L	M	M	L	L	L

## **8.6 Groundwater**

### **Issue: Groundwater Quality Impacts**

The impact on groundwater quality would be an issue.

The groundwater quality depends on the hydrocarbon spillages and its containment, thereof.

#### **Severity**

The fact that the project will make use drip trays and impermeable surfaces, the severity of the impacts on groundwater will be medium (as opposed to high in the context of uncontrolled use thereof). This can however be reduced to low through further mitigation.

#### **Spatial Scale**

The impact would extend beyond the site boundary as contamination transport is expected to follow the groundwater flow patterns, hence medium influence in both the unmitigated and mitigated cases.

#### **Duration**

The duration of potential for pollution from irrigation is longer than the operations, so the impact duration is high in both the unmitigated and the mitigated scenarios.

#### **Consequence**

Based on the above assessment the detractivities consequence is medium in the unmitigated case and medium in the mitigated case.

#### **Probability**

Probability of occurrence is medium in the unmitigated case and low in the mitigated case.

#### **Significance**

**SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED INSTALLATION OF A FUEL RETAIL FACILITY CONSISTING OF TWO ABOVE-GROUND FUEL SUPPLY TANKS AND ONE ABOVE-GROUND FUEL STORAGE TANK**

The significance of groundwater contamination is high in the unmitigated scenario but is low in the mitigated scenario.

<b>MITIGATION</b>	<b>SEVERITY</b>	<b>DURATION</b>	<b>SPATIAL SCALE</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY OF OCCURRENCE</b>	<b>SIGNIFICANCE</b>
<b>Unmitigated</b>	M	M	M	M	M	M
<b>Mitigated</b>	L	M	M	L	L	L

## **8.7 Issue/Impact: Waste Management**

### ***Introduction***

Due to the scope and scale of the proposed project, the type and volumes of waste will be minimal. The operational workforce will be approximately 11 people and therefore overall waste generation is expected to be limited. The recyclable portion of general waste (including scrap metal, wood, paper, plastic, glass and cans) will likely be separated at source and will be removed from site to appropriate recycling facilities. Endeavours will be made to return e-waste and chemical containers to the suppliers. Waste bins will be removed from the site and the contents dumped in the Walvis Bay landfill. The waste will be periodically covered to prevent windblown litter and scavengers.

All hazardous waste will be removed from site and disposed of at a licensed hazardous waste disposal site in Walvis Bay.

### ***Assessment of impact***

#### ***Severity***

The potential for waste to be blown beyond the site exists, due to the strong winds and pose a contamination risk. Therefore, the severity of the impact is medium in the unmitigated scenario and low in the mitigated scenario.

#### ***Duration***

The waste management impact is reversible overtime therefore the duration in the unmitigated scenario is medium and low in the mitigated scenario.

#### ***Spatial Scale***

The waste management impacts are not localised as it can blow beyond the site boundaries into Therefore, the spatial scale is rated high in the unmitigated scenario and low in the mitigated scenario.

#### ***Consequence***

**SCOPING (INCLUDING ASSESSMENT) REPORT FOR THE PROPOSED INSTALLATION OF A FUEL RETAIL FACILITY CONSISTING OF TWO ABOVE-GROUND FUEL SUPPLY TANKS AND ONE ABOVE-GROUND FUEL STORAGE TANK**

The impact of waste on site could have detrimental/cumulative effects, leading to the possible contamination of the surrounding area. Therefore, the consequence of this impact is medium in the unmitigated scenario and low in the mitigated scenario.

***Probability***

The probability of the waste management impact occurring is medium in the unmitigated scenario and low in the mitigated.

***Significance***

The perception of the land, in terms of its nature could potentially change in the unmitigated scenario. Therefore, the significance is rated high in the unmitigated scenario and could be reduced to low through mitigation.

<b>Mitigation</b>	<b>Severity</b>	<b>Duration</b>	<b>Spatial Scale</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>
<b>Unmitigated</b>	M	M	H	M	M	M
<b>Mitigated</b>	L	L	L	L	L	L

**9 CONCLUSION**

It is I.N.K's opinion that the environmental aspects and potential impacts relating to the proposed Fuel Retail Facility have been successfully identified.

The assessment found that the proposed project presents the potential for minimal additional risks and related impacts in the mitigated scenario. With regards to air quality, and third parties' safety, without mitigation in place, the impacts related to people is likely to result in unacceptable impacts. With mitigation measures in place, the impacts reduce significantly.

## 10 REFERENCES

Cunningham, P.L. (Environment & Wildlife Consulting Namibia) 2010a. Desktop Study: Vertebrate Fauna and Flora Expected in the Desert Star South – Phase 1 – Area. Prepared for LM Environmental Consulting. 27 pp.

Cunningham, P.L. (Environment & Wildlife Consulting Namibia) 2010b. Vertebrate Fauna and Flora associated with the Desert Star South – Phases 1A-C – Area. Prepared for LM Environmental Consulting. 49 pp.

Mannheimer, C.A. & Curtis, B.A. (eds) 2009. Le Roux and Muller's Field Guide to the Trees and Shrubs of Namibia. Windhoek: Macmillan Education Namibia

Mendelsohn, J., Jarvis, A., Roberts, C. and Roberts, T., 2002. Atlas of Namibia: A portrait of the land and its people. David Philip Publishers, Cape Town, RSA

Liebenberg-Enslin, H. and N. Krause (Airshed Planning Professionals). 2010. Environmental Impact Assessment for Phase 1 of the proposed Desert Star South Studios and Motion Picture Resort – Climate Report. Project done on behalf of LM Environmental Consulting. 19 pp.

