

APP-002447

**OCTAGON CONSTRUCTION'S TEMPORARY CONSUMER FUEL  
INSTALLATION, OPUWO**

**ENVIRONMENTAL SCOPING ASSESSMENT REPORT**



Assessed by:




Assessed for:



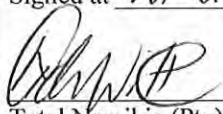
March 2021



|                                  |   |   |
|----------------------------------|---|---|
| <b>Project:</b>                  | <b>OCTAGON CONSTRUCTION'S TEMPORARY CONSUMER FUEL INSTALLATION, OPUWO: ENVIRONMENTAL ASSESSMENT SCOPING REPORT</b>  |   |
| <b>Report Version/Date:</b>      | Final<br>March 2021   |   |
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| <b>Report Approval</b>           | <br><b>André Faul</b><br>Conservation Ecologist  |   |

I Willem de Wit acting as a representative of Total Namibia hereby confirm that the project description contained in this report is a true reflection of the information which the Proponent provided to Geo Pollution Technologies. All material information in the possession of the proponent that reasonably has or may have the potential of influencing any decision or the objectivity of this assessment is fairly represented in this report and the report is hereby approved.

Signed at Windhoek on the 14th day of April 2021.

  
Total Namibia (Pty) Ltd

CY\1977\4078  
Business Registration/ID Number



## EXECUTIVE SUMMARY

The Opuwo Town Council is establishing a township on Portion B of the Remainder of Farm Opuwo Townlands No. 1115 and Portion Y of the Remainder of Opuwo Townlands No. 876. Octagon Construction was contracted for the construction and installation of services for the township establishment, and as such requires the use of earthmoving equipment and heavy motor vehicles. Octagon Construction established a construction camp at the site of township establishment and intends to add a temporary consumer fuel installation to the construction camp. The consumer fuel installation will supply diesel to Octagon Construction's earthmoving and related vehicles. The installation will consist of steel diesel tanks inside steel bunding that will be transported to, and placed on, the site. Being a mobile unit, this consumer fuel installation will require no specific construction activities apart from levelling the ground where it will be placed.

Octagon Construction contracted Total Namibia (Pty) Ltd for the supply of the tanks and the fuel for the proposed consumer fuel installation. Total Namibia (the Proponent) in turn appointed Geo Pollution Technologies (Pty) Ltd to undertake an environmental assessment for the temporary consumer fuel installation.

The environmental assessment is conducted to determine all environmental, safety, health and socio-economic impacts associated with the commissioning, operations and decommissioning of the facility. Relevant environmental data has been compiled by making use of secondary data and from a reconnaissance site visit. Potential environmental impacts and associated social impacts were identified and are addressed in this report. Due to the nature and location of the facility, limited impacts are expected on the surrounding environment, see summary impacts table below. The facility is surrounded undeveloped land with no direct neighbours.

The major concerns related to the operations of the facility are that of potential groundwater, surface water and soil contamination. This will however be limited by adherence to South African National Standards and to relevant Material Safety Data Sheet instructions. Furthermore, noise levels should meet the minimum requirements of the World Health Organisation. By appointing local contractors and employees and implementing educational programs, the positive socio-economic impacts can be maximised while mitigating any negative impacts.

The environmental management plan included in Section 10 of this document should be used as an on-site reference document during all phases (commissioning, operations and decommissioning) of the facility. All monitoring and records kept should be included in a report to ensure compliance with the environmental management plan. Parties responsible for transgression of the environmental management plan should be held responsible for any rehabilitation that may need to be undertaken. A Health, Safety, Environment and Quality policy as well as Environmental Policy could be used in conjunction with the environmental management plan. Operators and responsible personnel must be taught the contents of these documents. Municipal or national regulations and guidelines must be adhered to and monitored regularly as outlined in the environmental management plan.

### Impact Summary Class Values

| Impact Category                             | Impact Type                                       | Commissioning /<br>Decommissionin | Operations |
|---|---|-----------------------------------|------------|
| <i>Positive Rating Scale: Maximum Value</i> |   | 5                                 | 5          |
| <i>Negative Rating Scale: Maximum Value</i> |   | -5                                | -5         |
| EO  | Employment and Skills                             | 2                                 | 2          |
| SC  | Demographic Profile and Community Health          | -1                                | -1         |
| EO  | Fuel Supply                                       |                                   | 2          |
| SC  | Traffic   | -1                                | 1          |
| SC  | Health, Safety and Security                       | -2                                | -2         |
| PC  | Fire  |                                   | -2         |
| PC  | Noise   | -1                                | -1         |
| PC  | Waste Production                                  | -1                                | -1         |
| PC/BE                                       | Groundwater, Surface Water and Soil Contamination | -2                                | -2         |
| PC  | Cumulative Impact                                 | -1                                | -1         |

BE = Biological/Ecological    EO = Economical/Operational    PC = Physical/Chemical    SC = Sociological/Cultural



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## **LIST OF ABBREVIATIONS**

|              |   |
|--------------|---|
| <b>AIDS</b>  | Acquired Immune Deficiency Syndrome                 |
| <b>BE</b>    | Biological/Ecological                               |
| <b>DWA</b>   | Department of Water Affairs                         |
| <b>EA</b>    | Environmental Assessment                            |
| <b>EIA</b>   | Environmental Impact Assessment                     |
| <b>EMA</b>   | Environmental Management Act No 7 of 2007           |
| <b>EMP</b>   | Environmental Management Plan                       |
| <b>EMS</b>   | Environmental Management System                     |
| <b>EO</b>    | Economic/Operational                                |
| <b>ES</b>    | Environmental Classification                        |
| <b>GPT</b>   | Geo Pollution Technologies                          |
| <b>HIV</b>   | Human Immunodeficiency Virus                        |
| <b>IAPs</b>  | Interested and Affected Parties                     |
| <b>IUCN</b>  | International Union for Conservation of Nature      |
| <b>LNAPL</b> | Light Non-Aqueous Phase Liquids                     |
| <b>m/s</b>   | Meter per second                                    |
| <b>mbs</b>   | Meters below surface                                |
| <b>MEFT</b>  | Ministry of Environment, Forestry and Tourism       |
| <b>mm/a</b>  | Millimetres per annum                               |
| <b>MSDS</b>  | Material Safety Data Sheet                          |
| <b>PC</b>    | Physical/Chemical                                   |
| <b>PPE</b>   | Personal Protective Equipment                       |
| <b>ppm</b>   | Parts per million                                   |
| <b>SANS</b>  | South African National Standards                    |
| <b>SC</b>    | Sociological/Cultural                               |
| <b>UNCCD</b> | United Nations Convention to Combat Desertification |
| <b>WHO</b>   | World Health Organization                           |



## **GLOSSARY OF TERMS**

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

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

**Competent Authority** - means a body or person empowered under the local authorities act or Environmental Management Act to enforce the rule of law.

**Construction** - means the building, erection or modification of a facility, structure or infrastructure that is necessary for the undertaking of an activity, including the modification, alteration, upgrading or decommissioning of such facility, structure or infrastructure.

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

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

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

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

**Environmental Management System (EMS)** - An Environment Management System, or EMS, is a comprehensive approach to managing environmental issues, integrating environment-oriented thinking into every aspect of business management. An EMS ensures environmental considerations are a priority, along with other concerns such as costs, product quality, investments, PR productivity and strategic planning. An EMS generally makes a positive impact on a company’s bottom line. It increases efficiency and focuses on customer needs and marketplace conditions, improving both the company’s financial and environmental performance. By using an EMS to convert environmental problems into commercial opportunities, companies usually become more competitive.

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

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

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

**Mitigate** - The implementation of practical measures to reduce adverse impacts.

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

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

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

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

**Stakeholder Engagement** - The process of engagement between stakeholders (the proponent, authorities and I&APs) during the planning, assessment, implementation and/or management of proposals or activities. The level of stakeholder engagement varies depending on the nature of the proposal or activity as well as the level of commitment by stakeholders to the process. Stakeholder engagement can therefore be described by a spectrum or continuum of increasing levels of engagement in the decision-making process. The term is considered to be more appropriate than the term “public participation”.

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

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

## 1 BACKGROUND AND INTRODUCTION

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The Opuwo Town Council is establishing a township on Portion B of the Remainder of Farm Opuwo Townlands No. 1115 and Portion Y of the Remainder of Opuwo Townlands No. 876. Octagon Construction was contracted for the construction and installation of services for the township establishment, and as such requires the use of earthmoving equipment and heavy motor vehicles. Octagon Construction established a construction camp at the site of township establishment and intends to add a temporary consumer fuel installation to the construction camp (Figure 2-1). The consumer fuel installation will supply diesel to Octagon Construction's earthmoving and related vehicles. The installation will consist of steel diesel tanks inside steel bunding that will be transported to, and placed on, the site. Being a mobile unit, this consumer fuel installation will require no specific construction activities apart from levelling the ground where it will be placed.

Octagon Construction contracted Total Namibia (Pty) Ltd for the supply of the tanks and the fuel for the proposed consumer fuel installation. Total Namibia (the Proponent) in turn appointed Geo Pollution Technologies (Pty) Ltd to undertake an environmental assessment for the temporary consumer fuel installation. The environmental assessment will focus on the commissioning, operations and decommissioning of the mobile fuel installation and the activities that will be assessed include:

- ◆ Earthworks to level the area
- ◆ Transport and placement of the fuel installation
- ◆ Filling of the storage tanks with fuel from road transport tankers
- ◆ Dispensing of fuel to vehicles making use of drip trays
- ◆ Tank dips and fuel volume reconciliations
- ◆ General operational activities and maintenance procedures associated with the consumer fuel installation

A risk assessment was undertaken to determine the potential impact of the commissioning, operations and decommissioning of the facility on the environment. The environment being defined in the Environmental Assessment Policy and Environmental Management Act as “land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, paleontological or social values”.

The environmental assessment was conducted to apply for an environmental clearance certificate in compliance with Namibia's Environmental Management Act (Act No 7 of 2007) (EMA).

**Project Justification** – The consumer fuel installation will serve to provide a reliable supply of fuel to fleet vehicles of Octagon Construction. This will in turn allow them to fulfil their contract for services provision as part of township establishment at Opuwo. By refuelling the vehicles at the consumer fuel installation and not in town, various risks and impacts related to the movement of large earthmoving equipment, such as graders and frontend loaders, in town, are prevented. Such impacts include accidents, traffic congestion and road damage. In general, the construction activities performed by Octagon Construction will ultimately contribute to formal township establishment and thus the development of Opuwo. The overall development is expected to have a positive financial and social impact on the town.

## 2 SCOPE

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The scope of this assessment is to:

1. Determine the potential environmental impacts emanating from the commissioning, operations and decommissioning activities of the consumer fuel installation.
2. Identify a range of management actions which could mitigate the potential adverse impacts to acceptable levels.
3. Comply with the requirements of EMA.

4. Provide sufficient information to the MEFT to make an informed decision regarding the commissioning, operations and decommissioning of the facility.

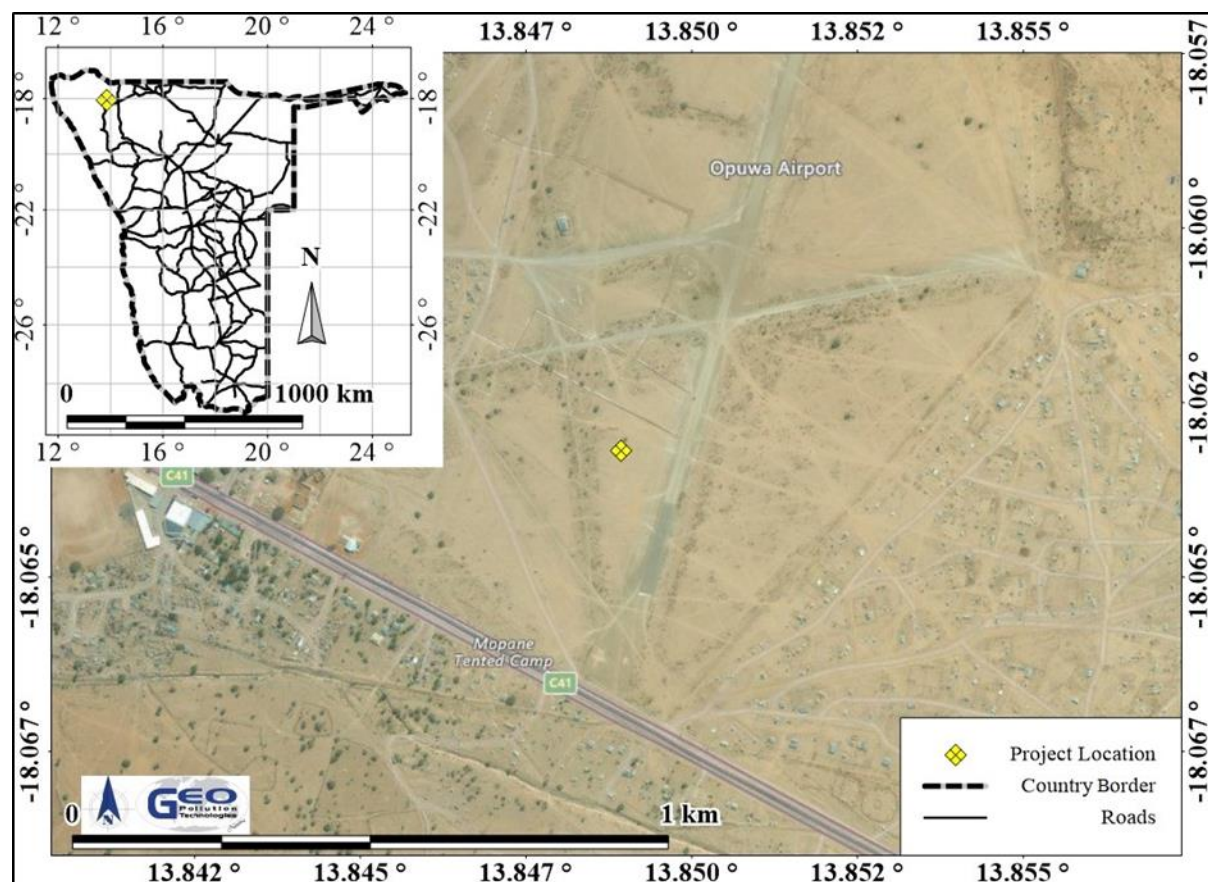


Figure 2-1. Project location

### 3 METHODOLOGY

The following methods were used to investigate the potential impacts on the social and natural environment due to the commissioning, operations and decommissioning of the facility:

1. Baseline information about the site and its surroundings was obtained from existing secondary information as well as from a reconnaissance site visit.
2. As part of the scoping process to determine potential environmental impacts, interested and affected parties (IAPs) were consulted about their views, comments and opinions, all of which are presented in this report.
3. Potential environmental impacts emanating from the commissioning, operations and decommissioning of the facility were determined and possible enhancement measures were listed for positive impacts while mitigation / preventative measures were provided for negative impacts.
4. As per the findings of this scoping report, an environmental management plan (EMP) was incorporated into this report to be submitted to the Ministry of Environment, Forestry and Tourism (MEFT).

### 4 PROJECT INFORMATION

It is anticipated that the consumer fuel installation will be commissioned once an environmental clearance certificate has been issued by the MEFT and the various additional permits and licences, such as the consumer installation certificate from the Ministry of Mines and Energy, have been issued.

#### 4.1 COMMISSIONING

Since the consumer fuel installation is of a temporary nature and completely mobile, no actual construction activities need to be performed. Steel diesel tanks of 23 m<sup>3</sup> each will be transported to the Octagon Construction camp together with steel bunding. An area inside and near the boundary fence of the construction camp will be levelled and the steel bunding placed on the ground. The steel tanks will be placed and secured inside the steel bunding together with pumps used to refuel vehicles. An area immediately outside the construction camp, and directly opposite the tanks, will be demarcated as refuelling area.

#### 4.2 OPERATIONAL ACTIVITIES

Normal operations associated with the consumer fuel installation will take place. This involves the receipt of diesel from road tankers, storage of the fuel in the storage tanks, and dispensing of fuel to fleet vehicles. During all refuelling processes, drip trays will be used to collect any minor spills that may occur. Regular tank dips and reconciliations will be performed to ensure there are no product losses and that fuel deliveries are scheduled on time. Administrative tasks, site security and cleaning of the premises continue on a daily basis to ensure the effective operations of the facility.

#### 4.3 DECOMMISSIONING

Once Octagon Construction has fulfilled their contract, the entire construction camp, inclusive of the consumer fuel installation, will be decommissioned. All equipment will be collected and transported to a new site or storage yard. The tanks, bunding and pumps will also be collected by Total Namibia and transported to a new site or storage area. Any soil that may have become polluted by diesel during the operations will be collected and disposed of as hazardous waste.

## 5 ALTERNATIVES TO THE PROPOSED FACILITY

Since the facility is a temporary installation that must still adhere to SANS standards or better, no alternatives in design parameters are proposed. The proposed location is located in an already disturbed area earmarked for the construction camp, and is currently used for that purpose. The proposed consumer fuel installation will aid in alleviating congestion at fuel retail facilities while providing convenient and reliable fuel supply to construction vehicles. From an environmental perspective the environmental assessment did not find any reason why the facility may not be established at this site.

## 6 ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS

To protect the environment and achieve sustainable development, all projects, plans, programmes and policies deemed to have adverse impacts on the environment require an environmental assessment, as per the Namibian legislation. The legislation and standards provided in Table 6-1 to Table 6-3 govern the environmental assessment process in Namibia and/or are relevant to the facility.

**Table 6-1. Namibian law applicable to the consumer fuel installation**

| Law   | Key Aspects   |
|---|---|
| <b>The Namibian Constitution</b>  | <ul style="list-style-type: none"> <li>◆ Promote the welfare of people</li> <li>◆ Incorporates a high level of environmental protection</li> <li>◆ Incorporates international agreements as part of Namibian law</li> </ul>   |
| <b>Environmental Management Act</b><br>Act No. 7 of 2007, Government Notice No. 232 of 2007 | <ul style="list-style-type: none"> <li>◆ Defines the environment</li> <li>◆ Promote sustainable management of the environment and the use of natural resources</li> <li>◆ Provide a process of assessment and control of activities with possible significant effects on the environment</li> </ul> |

| Law   | Key Aspects  |
|---|--|
| <b>Environmental Management Act</b><br>Government Notice No. 28-30 of 2012                        | <ul style="list-style-type: none"> <li>◆ Commencement of the Environmental Management Act</li> <li>◆ List activities that requires an environmental clearance certificate</li> <li>◆ Provide Environmental Impact Assessment Regulations</li> </ul>  |
| <b>Petroleum Products and Energy Act</b><br>Act No. 13 of 1990, Government Notice No. 45 of 1990  | <ul style="list-style-type: none"> <li>◆ Regulates petroleum industry</li> <li>◆ Makes provision for impact assessment</li> <li>◆ Petroleum Products Regulations (Government Notice No. 155 of 2000)               <ul style="list-style-type: none"> <li>○ Prescribes South African National Standards (SANS) or equivalents for construction, operation and decommissioning of petroleum facilities (refer to Government Notice No. 21 of 2002)</li> </ul> </li> </ul> |
| <b>The Water Act</b><br>Act No. 54 of 1956  | <ul style="list-style-type: none"> <li>◆ Remains in force until the new Water Resources Management Act comes into force</li> <li>◆ Defines the interests of the state in protecting water resources</li> <li>◆ Controls water abstraction and the disposal of effluent</li> <li>◆ Numerous amendments</li> </ul>   |
| <b>Water Resources Management Act</b><br>Act No. 11 of 2013                                       | <ul style="list-style-type: none"> <li>◆ Provide for management, protection, development, use and conservation of water resources</li> <li>◆ Prevention of water pollution and assignment of liability</li> <li>◆ Not in force yet</li> </ul>  |
| <b>Local Authorities Act</b><br>Act No. 23 of 1992, Government Notice No. 116 of 1992             | <ul style="list-style-type: none"> <li>◆ Define the powers, duties and functions of local authority councils</li> <li>◆ Regulates discharges into sewers</li> </ul>  |
| <b>Public Health Act</b><br>Act No. 36 of 1919  | <ul style="list-style-type: none"> <li>◆ Provides for the protection of health of all people</li> </ul>  |
| <b>Public and Environmental Health Act</b><br>Act No. 1 of 2015, Government Notice No. 86 of 2015 | <ul style="list-style-type: none"> <li>◆ Provides a framework for a structured more uniform public and environmental health system, and for incidental matters</li> <li>◆ Deals with Integrated Waste Management including waste collection disposal and recycling; waste generation and storage; and sanitation</li> </ul>  |
| <b>Labour Act</b><br>Act No 11 of 2007, Government Notice No. 236 of 2007                         | <ul style="list-style-type: none"> <li>◆ Provides for Labour Law and the protection and safety of employees</li> <li>◆ Labour Act, 1992: Regulations relating to the health and safety of employees at work (Government Notice No. 156 of 1997)</li> </ul>   |
| <b>Atmospheric Pollution Prevention Ordinance</b><br>Ordinance No. 11 of 1976                     | <ul style="list-style-type: none"> <li>◆ Governs the control of noxious or offensive gases</li> <li>◆ Prohibits scheduled process without a registration certificate in a controlled area</li> <li>◆ Requires best practical means for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled process</li> </ul>  |



| Law   | Key Aspects   |
|---|---|
| <b>Hazardous Substances Ordinance</b><br>Ordinance No. 14 of 1974   | <ul style="list-style-type: none"> <li>◆ Applies to the manufacture, sale, use, disposal and dumping of hazardous substances as well as their import and export</li> <li>◆ Aims to prevent hazardous substances from causing injury, ill-health or the death of human beings</li> </ul> |
| <b>Pollution Control and Waste Management Bill (draft document)</b> | <ul style="list-style-type: none"> <li>◆ Not in force yet</li> <li>◆ Provides for prevention and control of pollution and waste</li> <li>◆ Provides for procedures to be followed for licence applications</li> </ul>   |

**Table 6-2. Relevant multilateral environmental agreements for Namibia and the development**

| Agreement  | Key Aspects   |
|--|---|
| <b>Stockholm Declaration on the Human Environment, Stockholm 1972.</b> | <ul style="list-style-type: none"> <li>◆ Recognizes the need for a common outlook and common principles to inspire and guide the people of the world in the preservation and enhancement of the human environment</li> </ul>  |
| <b>1985 Vienna Convention for the Protection of the Ozone Layer</b>    | <ul style="list-style-type: none"> <li>◆ Aims to protect human health and the environment against adverse effects from modification of the Ozone Layer are considered.</li> <li>◆ Adopted to regulate levels of greenhouse gas concentration in the atmosphere</li> </ul> |
| <b>United Nations Framework Convention on Climate Change (UNFCCC)</b>  | <ul style="list-style-type: none"> <li>◆ The Convention recognises that developing countries should be accorded appropriate assistance to enable them to fulfil the terms of the Convention</li> </ul>  |
| <b>Convention on Biological Diversity, Rio de Janeiro, 1992</b>        | <ul style="list-style-type: none"> <li>◆ Under article 14 of The Convention, EIAs must be conducted for projects that may negatively affect biological diversity</li> </ul>   |

**Table 6-3. Standards or Codes of Practise**

| Standard or Code                               | Key Aspects   |
|--|---|
| <b>South African National Standards (SANS)</b> | <ul style="list-style-type: none"> <li>◆ The Petroleum Products and Energy Act prescribes SANS standards for the construction, operations and demolition of petroleum facilities</li> <li>◆ SANS 10131: 2004 deals with above-ground storage tanks for petroleum products</li> <li>◆ SANS 10089-3:2010 is specifically aimed at storage and distribution of petroleum products at fuel retail facilities and consumer installations <ul style="list-style-type: none"> <li>○ Provide requirements for spill control infrastructure</li> </ul> </li> </ul> |

The consumer fuel installation is listed as an activity requiring an environmental clearance certificate as per the following points from Section 9 of Government Notice No. 29 of 2012:

Hazardous Substance Treatment, Handling and Storage

9.1 “The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.” (The facility store and handle hazardous substances in the form of fuel.)

9.2 “Any process or activity which requires a permit, licence or other form of authorisation, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, licence or authorisation or which requires a new permit, licence or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste.” (The

facility store and handle hazardous substances in the form of fuel which is permitted by the Ministry of Mines and Energy.)

9.4 “The storage and handling of a dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic metres at any one location.”  
(The facility store and handle more than 30 m<sup>3</sup> of fuel.)

9.5 “Construction of filling stations or any other facility for the underground and aboveground storage of dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin.” (The facility is a filling station with diesel.)

## **7 ENVIRONMENTAL CHARACTERISTICS**

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This section lists pertinent environmental characteristics of the study area and provides a statement on the potential environmental impacts on each.

### **7.1 LOCALITY AND SURROUNDING LAND USE**

The Octagon Construction camp is located on a vacant area adjacent to the Opuwo airstrip within the townlands of Opuwo (Remainder of Opuwo Townlands No.876), Kunene Region (18.0631 °S, 13.8490 °E). This area is earmarked for township establishment. The consumer fuel installation will be located within the construction camp (Figure 2-1). Apart from the construction camp, the project location and direct surrounding area are currently undeveloped with no infrastructure or neighbours on site, and all the surrounding land falls under the ownership and authority of the Opuwo Town Council. Based on observations made during the site visit it seems that the airstrip near the facility is no longer in use or maintained.



**Photo 7-1. Construction camp**



**Photo 7-2. Area earmarked for the refuelling area**



**Photo 7-3. Construction camp and surroundings**



**Photo 7-4. Airstrip**

### ***Implications and Impacts***

The entire area is earmarked for township development and no neighbours or receptors are currently located close to the proposed location of the consumer fuel installation. Also, since it is a temporary installation, no impacts on any receptors are expected in the long term.

## **7.2 CLIMATE**

The project location is in the semi-arid Kaokoland and is part of a savannah biome. The general lack of functioning weather stations in Namibia limits the availability of long term, true weather data. As a best possible workaround, long term climate data was obtained from Atlas of Namibia Project (2002) and the CHIRPS-2 database (Funk et al., 2015), see Table 7-1, Table 7-2, Figure 7-1, Figure 7-2 and Figure 7-3. Atlas of Namibia Project data was compiled from almost 300 rainfall stations across Namibia, the data was contoured in 50 mm intervals prior to 1999 for variable length data sets. The CHIRPS-2 dataset (Climate Hazards Group Infra-Red Precipitation with Station data version 2) consist of long term rainfall data (1981 to near-present) obtained from satellite imagery and, where present, in-situ station data. The resultant dataset provides a reasonably well represented overview of the climatic conditions and historic weather conditions of a general area. True values for single, site specific meteorological events may however differ to some degree. This is especially true where the dominant rainfall is depended on localized storm cells that causes a high rainfall variability over short distances.

In the project area, days are mostly warm with very hot days during the summer months, while nights are generally cool. The rain season normally starts in October and last until April, peaking

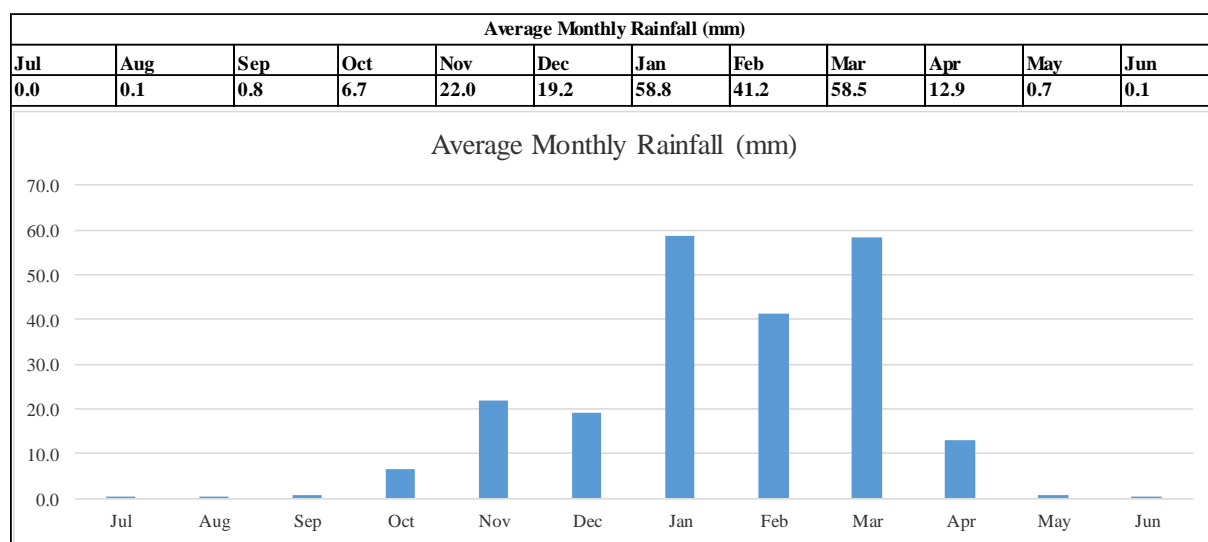
in January, February and March. Heavier rainfall (single day events) occur between November and March, with a single event of 45.2 mm in January (last 39 years data) being the highest.

The average annual rainfall for the last 39 years was calculated as 276 mm/a, with a coefficient of variance of 27% (Table 7-2). This coefficient of variance correlates with Atlas of Namibia Project data (Table 7-1). Daily and seasonal rainfall data (Funk et al., 2015) is presented in Figure 7-2. Seasonal (July to June) total rainfall, centred on the average line for the last 39 years, is presented, with the daily total rainfall and the seasonal cumulative rainfall.

From the figure it is clear that Opuwo has received mostly below average rainfall since the 2012-2013 season and is currently dry. The driest year (last 39 years data) being 2019 with about 100 mm recorded (Figure 7-3).

**Table 7-1. Summary of climate data for Opuwo (Atlas of Namibia Project, 2002)**

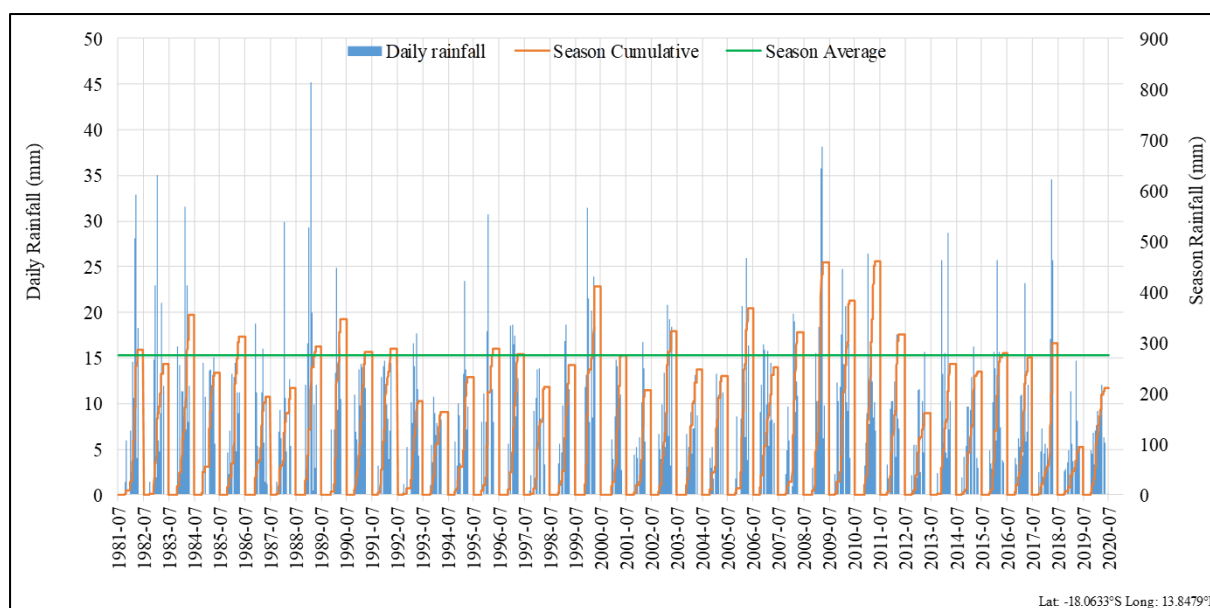
|                                   |             |
|-----------------------------------|-------------|
| Average annual rainfall (mm/a)    | 300-350     |
| Variation in annual rainfall (%)  | 40-50       |
| Average annual evaporation (mm/a) | 3,000-3,200 |
| Water deficit (mm/a)              | 1,701-1,900 |
| Average annual temperatures (°C)  | 21-22       |



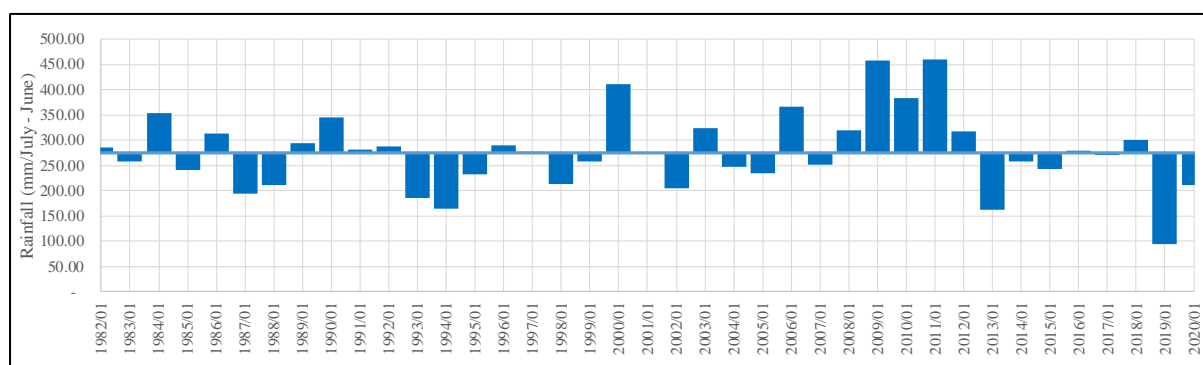
**Figure 7-1. Average monthly rainfall for the Opuwo area (Atlas of Namibia Project, 2002)**

**Table 7-2. Rainfall statistics based on CHIRPS-2 data (Funk et al., 2015)**

| Month                              | Jan            | Feb   | Mar   | Apr   | May   | Jun                                   | Jul   | Aug | Sep                             | Oct   | Nov  | Dec   |
|------------------------------------|----------------|-------|-------|-------|-------|---------------------------------------|-------|-----|---------------------------------|-------|------|-------|
| Minimum (mm)                       | 0.0            | 3.8   | 17.2  | 0.0   | 0.0   | 0.0                                   | 0.0   | 0.0 | 0.0                             | 0.0   | 0.0  | 0.0   |
| Maximum (mm)                       | 167.6          | 166.9 | 128.3 | 134.3 | 1.2   | 0.1                                   | 0.0   | 0.0 | 3.2                             | 38.9  | 41.4 | 158.7 |
| Average (mm)                       | 63.1           | 61.2  | 63.9  | 20.1  | 0.0   | 0.0                                   | 0.0   | 0.0 | 0.6                             | 7.5   | 19.4 | 39.7  |
| Variability (%)                    | 58.0           | 59.0  | 44.0  | 119.0 | 616.0 | 366.0                                 | 358.0 | NA  | 168.0                           | 108.0 | 58.0 | 84.0  |
| Daily maximum (mm)                 | 45.2           | 31.5  | 38.2  | 34.5  | 1.2   | 0.1                                   | 0.0   | 0.0 | 3.2                             | 16.3  | 18.8 | 31.4  |
| Average rain days                  | 8              | 9     | 9     | 3     | 0     | 0                                     | 0     | 0   | 0                               | 2     | 4    | 6     |
| Season July - June average: 276 mm |                |       |       |       |       | Season coefficient of variation: 27 % |       |     |                                 |       |      |       |
| Data range                         | 1981-Jul-01 to |       |       |       |       | 2020-Jun-30                           |       |     | Lat: -18.0633°S Long: 13.8479°E |       |      |       |



**Figure 7-2. Daily and seasonal rainfall from CHIRPS-2 data (Funk et al., 2015)**



**Figure 7-3. Average annual rainfall from CHIRPS-2 data (Funk et al., 2015)**

### ***Implications and Impacts***

Water is a scarce and valuable resource in Namibia and the extreme variability in seasonal rainfall makes water an extremely vulnerable resource. Rainfall events are typically thunderstorms with heavy rainfall that can occur in short periods of time (cloud bursts). The consumer fuel installation must meet all prescribed SANS requirements and therefore should not pose any environmental threat due to Namibia's climatic conditions. Water resources would thus be safe under typical conditions and expected extremes.

### **7.3 TOPOGRAPHY AND DRAINAGE**

The greater area is dominated by long northwest to north trending valleys with high relief and large scale geological folding. The valley floors have lower relief and drain to a north-western direction into the Namib terrain. The relief east of Opuwo, near the project area, tend to be low relief. The project area is located within the sub-catchment of the Hoarusib River, an ephemeral river, which covers an approximate area of 500 km<sup>2</sup> (Interconsult, 1997). The Hoarusib River drains in a north-western direction towards the Opuwo town where it later drains more west to the Atlantic Ocean. All local rivers in the sub catchment drain in a north-western direction.

The project area itself is relatively flat and slopes slightly towards the northeast. A map showing surface drainage directions can be seen in Figure 7-4.



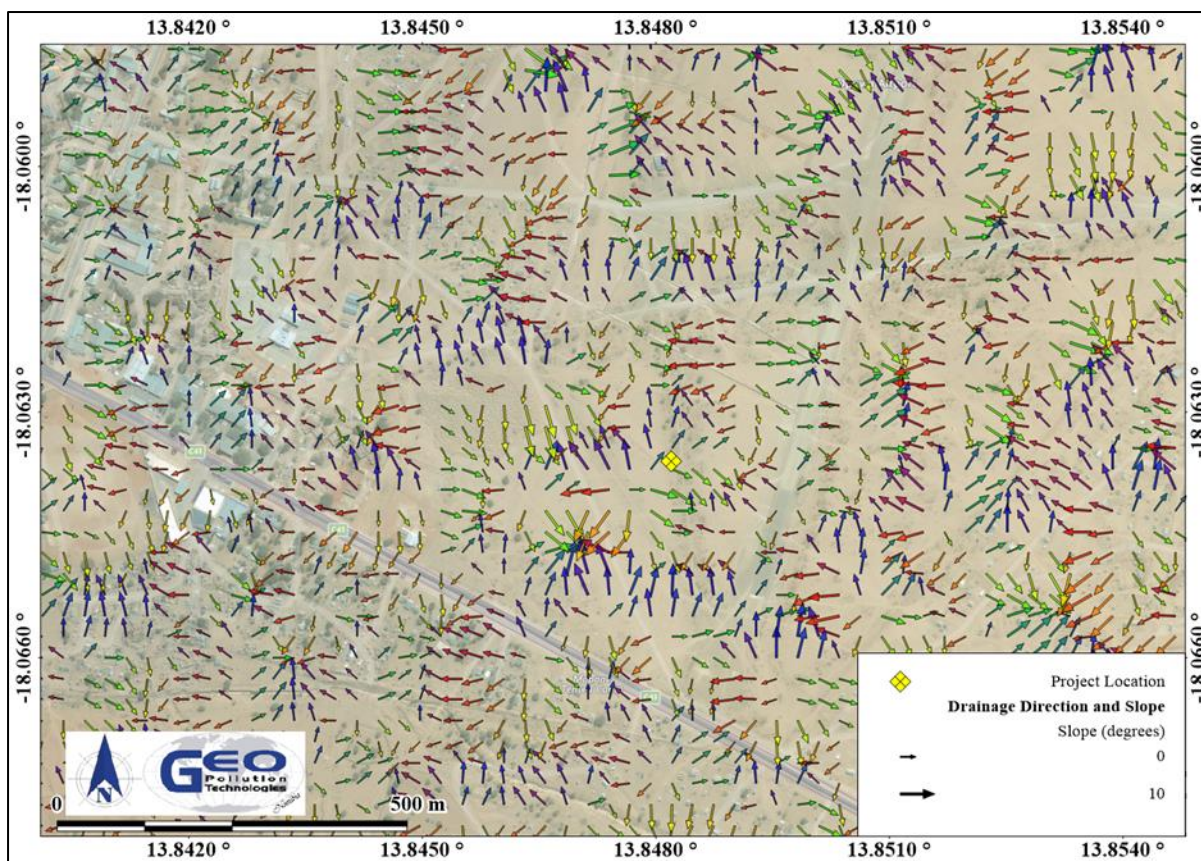


Figure 7-4. Drainage direction and slope

#### *Implications and Impacts*

Any pollutants that are not contained and are transported via surface water flow will be transported out of the site via the storm water drainage lines and potentially pollute the surrounding environment. Therefore, the storage and use of fuel must be strictly controlled according to SANS 10089 standards.

#### **7.4 GEOLOGY AND HYDROGEOLOGY**


The geology of the project area consist of rocks and deposits from the Quaternary-, Tertiary-, Permo-Carniferous- and Namibian Age. The Quaternary and Tertiary Age geology comprise of Kalahari Group deposits, which is sand, calcrete and gravel. These deposits originate mainly from fluvial deposition with some reworking through aeolian processes. The Karoo Supergroup rocks of the Permo-Carniferous overlie discordantly on Namibian-Age Damara Sequence rocks. The Karoo Supergroup consist locally of the Dwyka Formation, which typically form horizontal layering of tillite, boulder shale and sandstone. Locally the Damara Sequence consists of the Nosib Group and Otavi Group. The Abenab - and Tsumeb Sub Groups make up the Otavi Group rocks. Although a thin layer of surficial deposits may occur, rocks from the Abenab Subgroup makes up the subsurface geology of the project area. This Subgroup commonly comprises of dolomite, limestone, shale and quartzite.

Numerous faulting-, thrusting- rifting- folding episodes have complicated the geology in the project area. A prominent geological structure, the Opuwo Lineament, occurs about 7 km north of the town and strikes towards west-northwest. The main fault orientation strikes roughly toward the northwest and to the east-northeast. Groundwater flow is expected to take place through primary porosity in the surface cover, while it is expected to flow along fractures, faults, dykes/mineralised faults or along contact zones (secondary porosity) and other geological structures present within the underlying formations (hard rock formations). Karstification tends to take place within the rocks of the Otavi Group. Groundwater flow from the site can be expected

in a northern to north-western direction. Local flow patterns may vary due to groundwater abstraction.

The project location is situated in the Kunene North Groundwater Basin. Localised groundwater flow may take place along preferred flow paths in different directions, but the larger scale groundwater flow is expected to be in a north-western direction (Figure 7-5). According to the borehole data of the Department of Water Affairs (DWA), as seen in Table 7-3, there are at least 22 known boreholes within a 5 km radius around the study area. The average expected depth of the groundwater is 30 m below surface but can be as shallow as 20 m below surface. The project location falls outside a water control area and therefore a permit is not required for drilling. All groundwater remains the property of the Government of Namibia.

**Table 7-3. Groundwater borehole statistics for the area**

| Query Centre: Octagon Construction Camp; -18.0633°S; 13.8479°E                    |  | Query Box Radius: 5.0km   |            |           |             |                           |                   |                    |           |                |               |                |
|---|--|---------------------------|------------|-----------|-------------|---------------------------|-------------------|--------------------|-----------|----------------|---------------|----------------|
|  |  | NUMBER OF KNOWN BOREHOLES | LATITUDE   | LONGITUDE | DEPTH (mbs) | YIELD (m <sup>3</sup> /h) | WATER LEVEL (mbs) | WATER STRIKE (mbs) | TDS (ppm) | SULPHATE (ppm) | NITRATE (ppm) | FLUORIDE (ppm) |
| <b>Data points</b>  |  | <b>22</b>                 |            |           | 22          | 22                        | 20                | 20                 | 7         | 7              | 5             | 6              |
| <b>Minimum</b>  |  |                           | -18.018304 | 13.800571 | 33          | 0                         | 20                | 30                 | 1090      | 228            | 1             | 0              |
| <b>Average</b>  |  |                           |            |           | 94          | 19                        | 30                | 41                 | 1530      | 504            | 2             | 1              |
| <b>Maximum</b>  |  |                           | -18.108296 | 13.895229 | 150         | 72                        | 40                | 69                 | 2029      | 747            | 4             | 2              |
| <b>Group A</b>  |  |                           |            |           | 4.55%       | 72.73%                    | 0.00%             | 0.00%              | 0.00%     | 0.00%          | 100.00%       | 83.33%         |
| <i>Limit</i>  |  |                           |            |           | 50          | >10                       | 10                | 10                 | 1000      | 200            | 10            | 1.5            |
| <b>Group B</b>  |  |                           |            |           | 63.64%      | 18.18%                    | 100.00%           | 80.00%             | 28.57%    | 85.71%         | 0.00%         | 16.67%         |
| <i>Limit</i>  |  |                           |            |           | 100         | >5                        | 50                | 50                 | 1500      | 600            | 20            | 2.0            |
| <b>Group C</b>  |  |                           |            |           | 31.82%      | 4.55%                     | 0.00%             | 20.00%             | 57.14%    | 14.29%         | 0.00%         | 0.00%          |
| <i>Limit</i>  |  |                           |            |           | 200         | >0.5                      | 100               | 100                | 2000      | 1200           | 40            | 3.0            |
| <b>Group D</b>  |  |                           |            |           | 0.00%       | 4.55%                     | 0.00%             | 0.00%              | 14.29%    | 0.00%          | 0.00%         | 0.00%          |
| <i>Limit</i>  |  |                           |            |           | >200        | <0.5                      | >100              | >100               | >2000     | >1200          | >40           | >3             |

Statistical grouping of parameters is for ease of interpretation, except for the grouping used for sulphate, nitrate and fluoride, which follow the Namibian guidelines for the evaluation of drinking-water quality for human consumption, with regard to chemical, physical and bacteriological quality. In this case the groupings has the following meaning:

Group A: Water with an excellent quality

Group B: Water with acceptable quality

Group C: Water with low health risk

Group D: Water with a high health risk, or water unsuitable for human consumption.

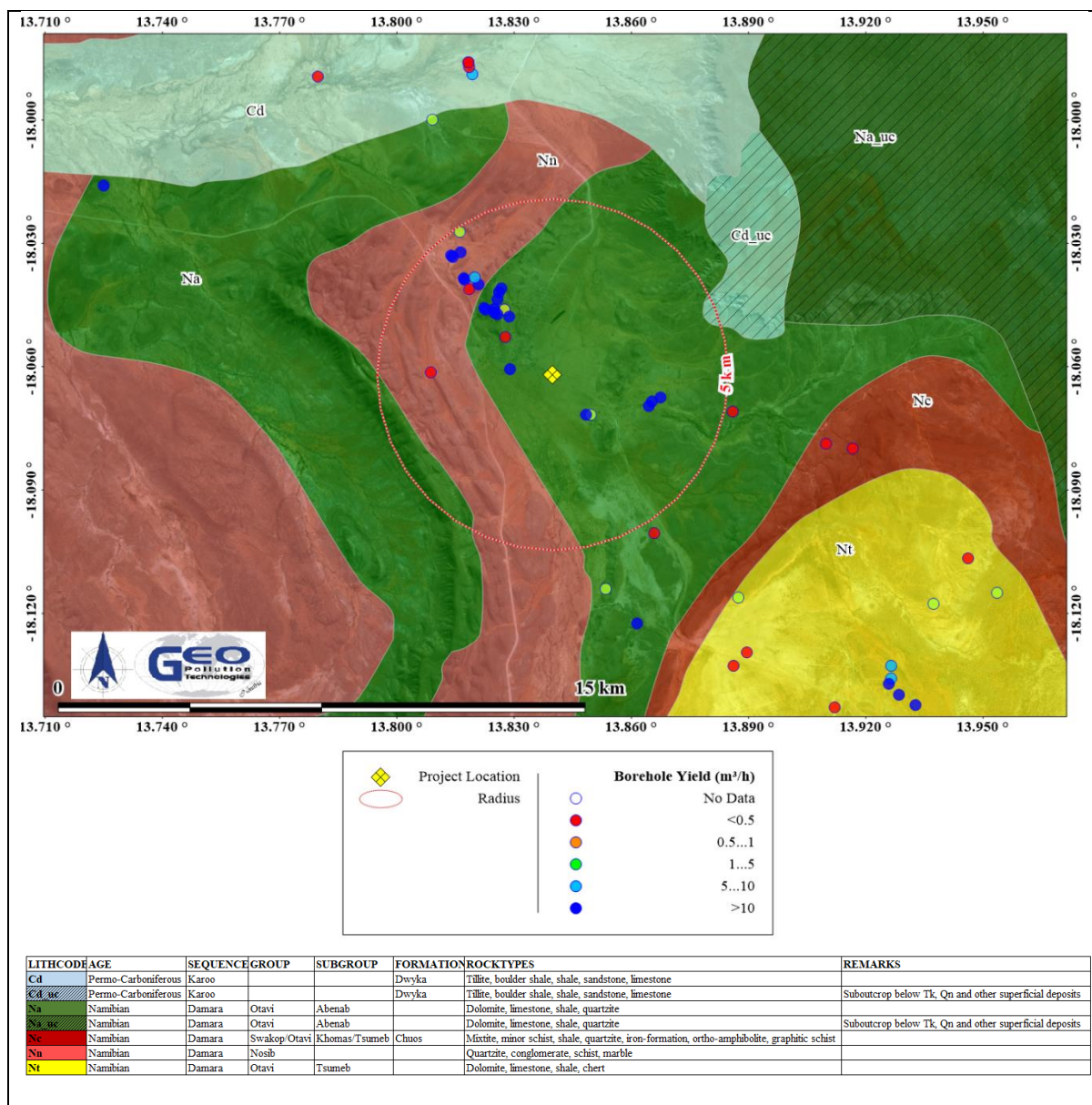


Figure 7-5. Hydrogeology

**Implications and Impacts**

Groundwater is utilised in the area. Pollution of the groundwater is prohibited. Spill control structures such as bunding around tanks and the use of drip trays should successfully prevent pollution of groundwater, surface water or soil.

**7.5 PUBLIC WATER SUPPLY**

Groundwater is the only bulk water supply to Opuwo, and is sourced from a combination of production boreholes situated in and around the town. Opuwo has a history of experiencing water supply interruptions and shortages, mainly due to groundwater quality leading to reduction in borehole yields.

**Implications and Impacts**

Groundwater remains an important resource and would be at risk if fuel spills are not contained, cleaned and disposed of properly.



## 7.6 FAUNA AND FLORA

The site lies in the Savanna Biome with a Karstveld vegetation type. Trees such as *Acacia reficiens*, *Commiphora* species, *Euphorbia guerichiana*, *Colophospermum mopane*, *Maerua schinzii*, *Adenolobus garipensis* and a variety of other trees are characteristic of this vegetation type. Table 7-4 and Table 7-5 present a summary of the general fauna and flora of the broader area. No vegetation are present on site and no animals of particular significance are expected in the area.

**Table 7-4. General flora data (Atlas of Namibia Project, 2002)**

|                                     |  |
|-------------------------------------|--|
| <b>Biome</b>                        | Savanna  |
| <b>Vegetation type</b>              | Karstveld  |
| <b>Vegetation structure type</b>    | Woodland   |
| <b>Diversity of higher plants</b>   | High (Diversity rank = 4 [1 to 7 representing highest to lowest diversity])  |
| <b>Number of plant species</b>      | 400 – 500  |
| <b>Percentage tree cover</b>        | 2 – 10   |
| <b>Tree height (m)</b>              | 2 – 5  |
| <b>Percentage shrub cover</b>       | 11 – 25  |
| <b>Shrub height (m)</b>             | 0.5 – 2  |
| <b>Percentage dwarf shrub cover</b> | 2 – 10   |
| <b>Dwarf shrub height (m)</b>       | < 0.5  |
| <b>Percentage Grass Cover</b>       | 2 – 10   |
| <b>Grass Height (m)</b>             | < 0.5  |
| <b>Dominant plant species</b>       | <i>Acacia reficiens</i> , <i>Commiphora</i> species, <i>Euphorbia guerichiana</i> , <i>Colophospermum mopane</i> , <i>Maerua schinzii</i> , <i>Adenolobus garipensis</i> |

**Table 7-5. General fauna data (Atlas of Namibia Project, 2002)**

|                           |                 |
|---------------------------|-----------------|
| <b>Mammal Diversity</b>   | 76 - 90 Species |
| <b>Rodent Diversity</b>   | 24 - 27 Species |
| <b>Bird Diversity</b>     | 111-140 Species |
| <b>Reptile Diversity</b>  | 61 - 70 Species |
| <b>Snake Diversity</b>    | 30 - 34 Species |
| <b>Lizard Diversity</b>   | 32 - 35 Species |
| <b>Termite Diversity</b>  | 10 - 12 Genera  |
| <b>Scorpion Diversity</b> | 10 - 11 Species |

### *Implications and Impacts*

The consumer fuel installation will be established in an area earmarked for township establishment and which has previously been impacted. No further impact on the local ecology is expected.

## 7.7 DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS

The project area falls within the Kunene Region with a population of 88,300 and a density of approximately 0.8 people per km<sup>2</sup>. The Opuwo constituency has a population density of 10 to 25 people/km<sup>2</sup> (National Planning Commission, 2012). Table 7-6 provides demographic information for the Opuwo Constituency, the region and nationally.

**Table 7-6. Demographic characteristics of Opuwo, the Kunene Region and nationally (Namibia Statistics Agency, 2011)**

|                                 | <b>Opuwo</b> | <b>Kunene Region</b> | <b>Namibia</b> |
|---------------------------------|--------------|----------------------|----------------|
| <b>Population (Males)</b>       | 13,376       | 43,900               | 1,021,912      |
| <b>Population (Females)</b>     | 13,896       | 44,400               | 1,091,165      |
| <b>Population (Total)</b>       | 27,272       | 88,300               | 2,113,077      |
| <b>Unemployment (15+ years)</b> | 41%          | 19.8%                | 33.8%          |
| <b>Literacy (15+ years)</b>     | 62%          | 64.9%                | 87.7%          |

***Implications and Impacts***

No impact or influence on the local demography is expected from the temporary consumer fuel installation.

**7.8 CULTURAL, HERITAGE AND ARCHAEOLOGICAL ASPECTS**

There are no known cultural, heritage or archaeologically significant sites in the immediate vicinity of the fuel retail facility. Artefacts dating back to 12,000 BC to +1000 AD, in the form of macrolithic stone artefacts, microlithic stone artefacts and pottery have however previously been uncovered in the Opuwo District (Vogelsang & Keding, 2013). These artefacts point towards hunter-gatherers as well as pastoralists previously inhabiting the greater area and may be of cultural importance.

***Implications and Impacts***

No heritage or cultural resources are expected to be impacted by the temporary consumer fuel installation.

**8 PUBLIC CONSULTATION**

Consultation with the public forms an integral component of an environmental assessment investigation and enables Interested and Affected Parties (IAPs) e.g. neighbouring landowners, local authorities, environmental groups, civic associations and communities, to comment on the potential environmental impacts associated with the proposed facility and to identify additional issues which they feel should be addressed in the environmental assessment.

As part of the public participation process, advertisements were placed in two national newspapers on the 23<sup>rd</sup> of February and the 2<sup>nd</sup> of March 2021, respectively. A site notice was placed at the site and the Opuwo Town Council was notified. No neighbours are present at the site which could be notified. For proof of the public participation process, see Appendix A.

**9 MAJOR IDENTIFIED IMPACTS**

During the scoping exercise a number of potential environmental impacts have been identified. The following section provides a brief description of the most important of these impacts.

**9.1 HYDROCARBON POLLUTION**

This section describes the most pertinent pollution impacts that are expected from the facility and its operations. Groundwater and soil pollution from hydrocarbon products are major issues associated with the storage and handling of such products. Both forms of pollution are prohibited in Namibia.

When a release of hydrocarbon products takes place to the soil, the Light Non-Aqueous Phase Liquids (LNAPL) will infiltrate into the soil and start to migrate vertically. LNAPL transport in the subsurface environment occurs in several phases, including bulk liquid, dissolved, and vapour phases. Mechanisms that influence transport include the physicochemical properties of the specific compounds present such as density, vapour pressure, viscosity, and hydrophobicity, as well as the physical and chemical properties of the subsurface environment, including geology and hydrogeology. Hydrocarbon liquids are typically complex mixtures composed of numerous compounds, each with its own individual physicochemical and, therefore, transport properties.

If small volumes of spilled LNAPL enter the unsaturated zone (i.e. vadose zone), the LNAPL will flow through the central portion of the unsaturated pores until residual saturation is reached. A three-phase system consisting of water, LNAPL, and air is formed within the vadose zone. Infiltrating water dissolves the components within the LNAPL (e.g., benzene, xylene, and toluene) and transports them to the water table. These dissolved contaminants form a contaminated plume radiating from the area of the residual product. Many components found in LNAPL are volatile and can partition into soil air and be transported by molecular diffusion to other parts of the aquifer. As these vapours diffuse into adjoining soil areas, they may partition

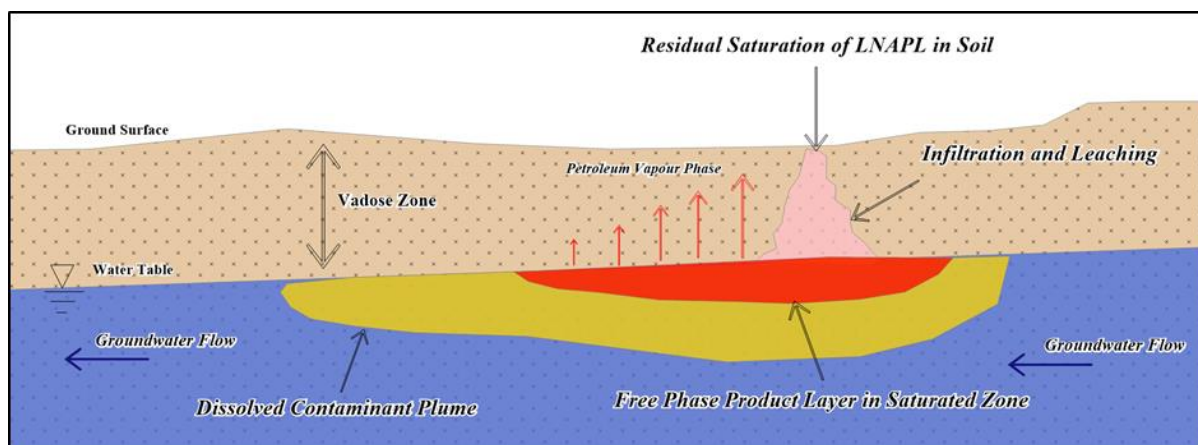
back into the water phase and transfer contamination over wider areas. If the soil surface is relatively impermeable, vapours will not diffuse across the surface boundary and concentrations of contaminants in the soil atmosphere may build up to equilibrium conditions. However, if the surface is not covered with an impermeable material, vapours may diffuse into the atmosphere.

If large volumes of LNAPL are spilled, the LNAPL flows through the pore space to the top of the capillary fringe of the water table. Dissolved components of the LNAPL precede the less soluble components and may change the wetting properties of the water, causing a reduction in the residual water content and a decrease in the height of the capillary fringe.

Since LNAPL are lighter than water, it will float on top of the capillary fringe. As the head formed by the infiltrating LNAPL increases, the water table is depressed and the LNAPL accumulate in the depression. If the source of the spilled LNAPL is removed or contained, LNAPL within the vadose zone continue to flow under the force of gravity until reaching residual saturation. As the LNAPL continue to enter the water table depression, it spread laterally on top of the capillary fringe. The draining of the upper portions of the vadose zone reduces the total head at the interface between the LNAPL and the groundwater, causing the water table to rebound slightly. The rebounding water displaces only a portion of the LNAPL because the LNAPL remain at residual saturation. Groundwater passing through the area of residual saturation dissolves constituents of the residual LNAPL, forming a contaminant plume. Water infiltrating from the surface also can dissolve the residual LNAPL and add to the contaminant load of the aquifer.

Decrease in the water table level from seasonal variations may lead to dropping of the pool of LNAPL. If the water table rises again, part of the LNAPL may be pushed up, but a portion remains at residual saturation below the new water table. Variations in the water table height, therefore, can spread LNAPL over a greater thickness of the aquifer, causing larger volumes of aquifer materials to be contaminated.

Hydrocarbon products do biodegrade in the subsurface, although the effectiveness of this process depends on subsurface conditions. The type of hydrocarbon product plays a further role in the duration of biodegradation, with the longer chain components taking much longer to biodegrade.



**Figure 9-1. Conceptual LNAPL release to the vadose zone**

## 9.2 NOISE IMPACTS

Low level noise impacts will be limited to workers on site that will be exposed to vehicle noise during refuelling operations.

## 9.3 TRAFFIC IMPACTS

The presence of the consumer fuel installation will reduce traffic impacts within Opuwo town and on nearby roads and as such can be regarded as a positive impact.

#### 9.4 FIRE

Diesel is not as flammable as other fuel types and the likelihood of a fire originating as a result of the diesel storage and handling is very low.

#### 9.5 HEALTH

Hydrocarbons are carcinogenic and dermal contact and inhalation of fumes should be prevented.

#### 9.6 SOCIO-ECONOMIC IMPACTS

Social ills including spread of disease, alcohol misuse, theft, etc., may result from construction personnel and job seekers moving into the area or due to the larger workforce if employees are not sourced locally.

### 10 ASSESSMENT AND MANAGEMENT OF IMPACTS

The purpose of this section is to assess and identify the most pertinent environmental impacts that are expected from the commissioning, operational and decommissioning activities of the facility. An EMP based on these identified impacts are also incorporated into this section.

For each impact an Environmental Classification was determined based on an adapted version of the Rapid Impact Assessment Method (Pastakia, 1998). Impacts are assessed according to the following categories: Importance of condition (A1); Magnitude of Change (A2); Permanence (B1); Reversibility (B2); and Cumulative Nature (B3) (see Table 10)

Ranking formulas are then calculated as follow:

$$\text{Environmental Classification} = A1 \times A2 \times (B1 + B2 + B3)$$

The environmental classification of impacts is provided in Table 11.

The probability ranking refers to the probability that a specific impact will happen following a risk event. These can be improbable (low likelihood); probable (distinct possibility); highly probable (most likely); and definite (impact will occur regardless of prevention measures).

**Table 10-1. Assessment criteria**

| Criteria   | Score |
|--|-------|
| Importance of condition (A1) – assessed against the spatial boundaries of human interest it will affect              |       |
| Importance to national/international interest  | 4     |
| Important to regional/national interest  | 3     |
| Important to areas immediately outside the local condition   | 2     |
| Important only to the local condition  | 1     |
| No importance  | 0     |
| Magnitude of change/effect (A2) – measure of scale in terms of benefit/disbenefit of an impact or condition          |       |
| Major positive benefit   | 3     |
| Significant improvement in status quo  | 2     |
| Improvement in status quo  | 1     |
| No change in status quo  | 0     |
| Negative change in status quo  | -1    |
| Significant negative disbenefit or change  | -2    |
| Major disbenefit or change   | -3    |
| Permanence (B1) – defines whether the condition is permanent or temporary  |       |
| No change/Not applicable   | 1     |
| Temporary  | 2     |
| Permanent  | 3     |
| Reversibility (B2) – defines whether the condition can be changed and is a measure of the control over the condition |       |
| No change/Not applicable   | 1     |
| Reversible   | 2     |
| Irreversible   | 3     |

|  |   |
|--|---|
| Cumulative (B3) – reflects whether the effect will be a single direct impact or will include cumulative impacts over time, or synergistic effect with other conditions. It is a means of judging the sustainability of the condition – not to be confused with the permanence criterion. |   |
| Light or No Cumulative Character/Not applicable  | 1 |
| Moderate Cumulative Character  | 2 |
| Strong Cumulative Character  | 3 |

**Table 10-2. Environmental classification (Pastakia 1998)**

| Environmental Classification | Class Value | Description of Class          |
|------------------------------|-------------|-------------------------------|
| 72 to 108                    | 5           | Extremely positive impact     |
| 36 to 71                     | 4           | Significantly positive impact |
| 19 to 35                     | 3           | Moderately positive impact    |
| 10 to 18                     | 2           | Less positive impact          |
| 1 to 9                       | 1           | Reduced positive impact       |
| 0                            | -0          | No alteration                 |
| -1 to -9                     | -1          | Reduced negative impact       |
| -10 to -18                   | -2          | Less negative impact          |
| -19 to -35                   | -3          | Moderately negative impact    |
| -36 to -71                   | -4          | Significantly negative impact |
| -72 to -108                  | -5          | Extremely Negative Impact     |

### 10.1 RISK ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN

The EMP provides management options to ensure impacts of the facility are minimised. An EMP is a tool used to take pro-active action by addressing potential problems before they occur. This should limit the corrective measures needed, although additional mitigation measures might be included if necessary. The environmental management measures are provided in the tables and descriptions below. These management measures should be adhered to during the various phases of the commissioning, operations and decommissioning of the facility. This section of the report can act as a stand-alone document. All personnel taking part in the commissioning, operations and decommissioning of the facility should be made aware of the contents in this section, so as to plan the operations accordingly and in an environmentally sound manner.

The objectives of the EMP are:

- ◆ to include all components of commissioning, operations and decommissioning of the facility;
- ◆ to prescribe the best practicable control methods to lessen the environmental impacts associated with the project;
- ◆ to monitor and audit the performance of operational personnel in applying such controls; and
- ◆ to ensure that appropriate environmental training is provided to responsible commissioning, operational and decommissioning personnel.

Some impacts will emanate from the commissioning, operational and decommissioning phases. The majority of these impacts can be mitigated or prevented. The impacts, risk rating of impacts as well as prevention and mitigation measures are listed below.

As depicted in the tables below, impacts are expected to mostly be of low significance. The extent of impacts are mostly site specific to local and are not of a permanent nature. Due to the nature of the surrounding areas, cumulative impacts are unlikely.

### 10.1.1 Planning

During the phases of planning for commissioning, operations and decommissioning of the facility, it is the responsibility of Proponent to ensure they are and remain compliant with all legal requirements. The Proponent must also ensure that all required management measures are in place prior to and during all phases, to ensure potential impacts and risks are minimised. The following actions are recommended for the planning phase and should continue during various other phases of the project:

- ◆ Ensure that all necessary permits from the various ministries, local authorities and any other bodies that governs the project remains valid.
- ◆ Ensure all appointed contractors and employees enter into an agreement which includes the EMP. Ensure that the contents of the EMP are understood by the contractors, sub-contractors, employees and all personnel present or who will be present on site.
- ◆ Make provisions to have a Health, Safety and Environmental (HSE) Coordinator to implement the EMP and oversee occupational health and safety as well as general environmental related compliance at the site.
- ◆ Have the following emergency plans, equipment and personnel on site where reasonable to deal with all potential emergencies:
  - Risk management/mitigation/EMP/ Emergency Response Plan and HSE Manuals
  - Adequate protection and indemnity insurance cover for incidents;
  - Comply with the provisions of all relevant safety standards;
  - Procedures, equipment and materials required for emergencies.
- ◆ If one has not already been established, establish and maintain a fund for future ecological restoration of the project site should project activities cease and the site is decommissioned and environmental restoration or pollution remediation is required.
- ◆ Establish and/or maintain a reporting system to report on aspects of construction activities, operations and decommissioning as outlined in the EMP.
- ◆ Submit 6 monthly environmental monitoring reports to allow for future environmental clearance certificate renewal applications if needed.
- ◆ Appoint a specialist environmental consultant to update the EA and EMP and apply for renewal of the environmental clearance certificate prior to expiry, if needed.

### 10.1.2 Employment and Skills

During the commissioning, operations and decommissioning of the facility some employment will be sustained and training provided.

| Project Activity/Resource       | Nature (Status)  | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|---------------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Commissioning / Decommissioning | Employment, technological development and transfer of skills | 2               | 1              | 2               | 3                  | 1               | 12                           | 2           | Probable    |
| Daily Operations                | Employment, technological development and transfer of skills | 2               | 1              | 2               | 3                  | 1               | 12                           | 2           | Definite    |

**Desired Outcome:** To see an increase in employment and skills of local Namibians

#### **Actions**

##### **Mitigation:**

- ◆ If the skills exist locally, employees must first be sourced from the town, then the region, and then nationally. Deviations from this practice must be justified.
- ◆ Employees to be informed about parameters and requirements for references upon employment.

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

- ◆ Record should be kept of training provided (6 monthly monitoring reports).
- ◆ Ensure that all training is certified or managerial reference provided (proof provided to the employees) inclusive of training attendance, completion and implementation.

### 10.1.3 Demographic Profile and Community Health

The project is reliant on labour during the commissioning, operations and decommissioning phases. The scale of the project, related directly to the consumer fuel installation, is limited and it is not foreseen that it will create a change in the demographic profile of the local community. Community health may be exposed to factors such as communicable disease like HIV/AIDS as well as alcoholism / drug abuse, associated with possible foreign construction teams. An increase in foreign people in the area may potentially increase the risk of criminal and socially / culturally deviant behaviour. However, such trends are considered to be more related to the actual township establishment project, which has its own environmental assessment and associated EMP.

| Project Activity/Resource        | Nature (Status)              | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|----------------------------------|------------------------------|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Commissioning, / decommissioning | In-migration and social ills | 2               | -1             | 1               | 1                  | 1               | -6                           | -1          | Improbable  |
| Daily Operations                 | In-migration and social ills | 2               | -1             | 1               | 1                  | 2               | -8                           | -1          | Probable    |

**Desired Outcome:** To prevent the in-migration and growth in informal settlements and related social ills and to prevent the spread of diseases such as HIV/AIDS.

#### **Actions:**

##### **Prevention:**

- ◆ Employ only local people from the area, deviations from this practice should be justified appropriately.

##### **Mitigation:**

- ◆ Educational programmes for employees on HIV/AIDs and general upliftment of employees' social status.

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractor

##### **Data Sources and Monitoring:**

- ◆ Report based on educational programmes and training conducted.
- ◆ Report and review of employee demographics.



### 10.1.4 Fuel Supply

The facility will aid in securing fuel supply to the construction team for purposes of township establishment

| Project Activity/Resource | Nature (Status)      | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|---------------------------|----------------------|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Daily Operations          | Reliable fuel supply | 2               | 1              | 1               | 2                  | 1               | 8                            | 2           | Definite    |

**Desired Outcome:** Ensure a secure fuel supply remains available to the construction team

**Actions**

**Mitigation:**

- ◆ Ensure compliance to the petroleum regulations of Namibia.
- ◆ Proper management to ensure constant supply.
- ◆ Record supply problems and take corrective actions.

**Responsible Body:**

- ◆ Proponent
- ◆ Contractor

**Data Sources and Monitoring:**

- ◆ Record supply problems and corrective actions taken.

### 10.1.5 Traffic

The facility will prevent traffic impacts in town. Some traffic impacts may be expected during the delivery and removal of the equipment during the commissioning and decommissioning phases.

| Project Activity/Resource       | Nature (Status)   | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|---------------------------------|---|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Commissioning / Decommissioning | Delivery and removal of equipment such as tanks and bunding | 1               | -1             | 2               | 2                  | 1               | -5                           | -1          | Improbable  |
| Daily Operations                | Increase traffic, road wear and tear and accidents          | 1               | 1              | 2               | 2                  | 1               | -5                           | 1           | Probable    |

**Desired Outcome:** Minimum impact on traffic and no transport or traffic related incidents.

#### **Actions**

##### **Prevention:**

- ◆ Erect clear signage regarding access and exit points at the facility.

##### **Mitigation:**

- ◆ If any traffic impacts are expected, traffic management should be performed to prevent these.
- ◆ The placement of signs to warn and direct traffic will mitigate traffic impacts.

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractor

##### **Data Sources and Monitoring:**

- ◆ Any complaints received regarding traffic issues should be recorded together with action taken to prevent impacts from repeating itself.
- ◆ A report should be compiled of all incidents reported, complaints received, and action taken.

### 10.1.6 Health, Safety and Security

Activities that will be associated with the commissioning, operations and decommissioning of the facility are reliant on human labour and therefore will expose them to health and safety risks. Activities such as the operation of machinery and handling of hazardous chemicals (inhalation and carcinogenic effect of some petroleum products), will pose the main risks to employees. Security risks will be related to unauthorized entry, theft and sabotage.

| Project Activity/Resource       | Nature (Status)  | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|---------------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Commissioning / Decommissioning | Physical injuries, exposure to chemicals and criminal activities | 1               | -2             | 3               | 3                  | 1               | -14                          | -2          | Probable    |
| Daily Operations                | Physical injuries, exposure to chemicals and criminal activities | 1               | -2             | 3               | 3                  | 2               | -16                          | -2          | Probable    |

**Desired Outcome:** To prevent injury, health impacts and theft.

#### **Actions**

##### **Prevention:**

- ◆ Clearly label dangerous and restricted areas as well as dangerous equipment and products.
- ◆ Equipment that will be locked away on site must be placed in a way that does not encourage criminal activities (e.g. theft).
- ◆ Provide all employees with required and adequate personal protective equipment (PPE).
- ◆ Ensure that all personnel receive adequate training on operation of equipment / handling of hazardous substances.
- ◆ All health and safety standards specified in the Labour Act should be complied with.
- ◆ Implementation of maintenance register for all equipment and fuel / hazardous substance storage areas.

##### **Mitigation:**

- ◆ Selected personnel should be trained in first aid and a first aid kit must be available on site. The contact details of all emergency services must be readily available.
- ◆ Security procedures and proper security measures must be in place to protect workers.
- ◆ Strict security that prevents unauthorised entry.

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

- ◆ Any incidents must be recorded with action taken to prevent future occurrences.
- ◆ A report should be compiled of all incidents reported. The report should contain dates when training were conducted and when safety equipment and structures were inspected and maintained.

### 10.1.7 Fire

Diesel is flammable although the chances of ignition and fire is low.

| Project Activity/Resource | Nature (Status) | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|---------------------------|-----------------|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Daily Operations          | Fire risk       | 1               | -2             | 2               | 2                  | 1               | -10                          | -2          | Improbable  |

**Desired Outcome:** To prevent property damage, possible injury and impacts caused by uncontrolled fires.

#### **Actions:**

##### **Prevention:**

- ◆ Ensure all chemicals are stored according to MSDS and SANS instructions.
- ◆ Maintain regular site, mechanical and electrical inspections and maintenance where applicable.
- ◆ Clean all spills / leaks.
- ◆ Special note must be taken of the regulations stipulated in sections 47 and 48 of the Petroleum Products and Energy Act, 1990 (Act No. 13 of 1990).
- ◆ Follow SANS standards for operation and maintenance of the facility.

##### **Mitigation:**

- ◆ A holistic fire protection and prevention plan is needed. This plan must include an emergency response plan, firefighting plan and spill recovery plan.
- ◆ Maintain firefighting equipment, good housekeeping and personnel training (firefighting, fire prevention and responsible housekeeping practices).

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

- ◆ A report should be compiled of all incidents reported. The report should contain dates when fire drills were conducted and when fire equipment was tested and training given.

### 10.1.8 Noise

Noise impacts related to heavy motor vehicles accessing the site to offload / load equipment and to refuel.

| Project Activity/Resource       | Nature (Status)  | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|---------------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Commissioning / Decommissioning | Excessive noise during the delivery or collection of equipment | 1               | -1             | 2               | 2                  | 1               | -5                           | -1          | Probable    |
| Daily Operations                | Vehicle noise during refuelling                                | 1               | -1             | 2               | 2                  | 1               | -5                           | -1          | Probable    |

**Desired Outcome:** To prevent any nuisance and hearing loss due to noise generated.

#### Actions

##### **Prevention:**

- ◆ Follow World Health Organization (WHO) guidelines on maximum noise levels (Guidelines for Community Noise, 1999) to prevent hearing impairment.
- ◆ All machinery must be regularly serviced to ensure minimal noise production.

##### **Mitigation:**

- ◆ Hearing protectors as standard PPE for workers in situations with elevated noise levels.

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

- ◆ WHO Guidelines.
- ◆ Report on complaints and actions taken to address complaints and prevent future occurrences.

### 10.1.9 Waste Production

Limited waste will be produced as a result of the functioning of the consumer fuel installation. Waste may include hazardous waste associated with the handling of hydrocarbon products etc. Contaminated soil and water is considered as hazardous wastes. Domestic waste will be generated by the facility and related operations. Waste presents a contamination risk and when not removed regularly may become a fire hazard.

| Project Activity/Resource       | Nature (Status)  | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|---------------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Commissioning / Decommissioning | Excessive waste production, littering, illegal dumping, contaminated materials | 1               | -1             | 2               | 2                  | 2               | -6                           | -1          | Probable    |
| Daily Operations                | Excessive waste production, littering, contaminated materials                  | 1               | -1             | 2               | 2                  | 2               | -6                           | -1          | Probable    |

**Desired Outcome:** To reduce the amount of waste produced, and prevent pollution and littering.

#### Actions

##### **Prevention:**

- ◆ Waste reduction measures should be implemented and all waste that can be re-used / recycled must be kept separate.
- ◆ Ensure adequate disposal storage facilities are available.
- ◆ Ensure waste cannot be blown away by wind.
- ◆ Prevent scavenging (human and non-human) of stored waste.

##### **Mitigation:**

- ◆ Waste should be disposed of regularly and at appropriately classified disposal facilities, this includes hazardous material (empty chemical containers, contaminated rugs, paper water and soil).
- ◆ See the material safety data sheets available from suppliers for disposal of contaminated products and empty containers.
- ◆ Liaise with the municipality town council regarding waste and handling of hazardous waste.

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

- ◆ A register of hazardous waste disposal should be kept. This should include type of waste, volume as well as disposal method/facility.

### 10.1.10 Groundwater, Surface Water and Soil Contamination

Heavy machinery may present a contamination risk to the soil, surface and groundwater through breakdowns resulting in leaks of fuel, oil or hydraulic fluid. Operations will entail the storage and handling of diesel which present a contamination risk. It may contaminate surface water, soil and groundwater. Contamination may either result from failing storage facilities, or spills and leaks associated with fuel handling.

| Project Activity/Resource       | Nature (Status)  | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|---------------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Commissioning / Decommissioning | Contamination from hazardous material spillages and hydrocarbon leakages | 2               | -1             | 2               | 2                  | 1               | -10                          | -2          | Improbable  |
| Daily Operations                | Contamination from hazardous material spillages and hydrocarbon leakages | 2               | -1             | 2               | 2                  | 1               | -10                          | -2          | Probable    |

**Desired Outcome:** To prevent the contamination of water and soil.

#### Actions

##### **Prevention:**

- ◆ All vehicles should be maintained to be in a good working condition during operations.
- ◆ Employ drip trays during the fuelling of vehicles to collect any spilled diesel.
- ◆ Proper training of operators must be conducted on a regular basis (fuel handling, spill detection, spill control).

##### **Mitigation:**

- ◆ Any spillage of more than 200 litre must be reported to the Ministry of Mines and Energy.
- ◆ Spill clean-up means must be readily available on site as per the relevant MSDS and any spill must be cleaned up immediately.
- ◆ Plastic sheeting must be available on site and if any soil is contaminated, such soil should immediately be collected and stored on the plastic sheeting to prevent infiltration into deeper soil and possibly the groundwater. Such soil should then be remediated or disposed of according to industry standards.

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

- ◆ A report should be compiled of all spills or leakages reported. The report should contain the following information: date and duration of spill, product spilled, volume of spill, remedial action taken, and a copy of documentation in which spill was reported to Ministry of Mines and Energy.

### 10.1.11 Cumulative Impact

Possible cumulative impacts associated with the construction and operational phase include increased traffic, dust and noise in the area.

| Project Activity/Resource       | Nature (Status)  | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|---------------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Commissioning / Decommissioning | The build-up of minor impacts to become more significant | 2               | -1             | 2               | 2                  | 1               | -10                          | -1          | Improbable  |
| Daily Operations                | The build-up of minor impacts to become more significant | 2               | -1             | 2               | 2                  | 1               | -10                          | -1          | Improbable  |

**Desired Outcome:** To minimise cumulative all impacts associated with the facility.

#### Actions

##### Mitigation:

- ◆ Addressing each of the individual impacts as discussed and recommended in the EMP would reduce the cumulative impact.
- ◆ Reviewing reports for any new or re-occurring impacts or problems would aid in identifying cumulative impacts and help in planning if the existing mitigations are insufficient

##### Responsible Body:

- ◆ Proponent

##### Data Sources and Monitoring:

- ◆ Summary report based on all other impacts must be created to give an overall assessment of the impact of the facility.



## 11 CONCLUSION

The consumer fuel installation will play a positive role in the development of Opuwo by allowing for convenient access to fuel for township establishment purposes. It will contribute locally to some employment and skills transfer and training which in turn develops the local workforce.

Negative impacts can successfully be mitigated. SANS standards relating to the petroleum industry and prescribed by Namibian law must be followed. Noise pollution should at all times meet the prescribed WHO requirements to prevent hearing loss and not to cause a nuisance. Fire prevention should be adequate, and health and safety regulations should be adhered to in accordance with the regulations pertaining to relevant laws and internationally accepted standards of operation. Any waste produced must be removed from site and disposed of at an appropriate facility or re-used or recycled where possible. Hazardous waste must be disposed of at an approved hazardous waste disposal site.

The EMP (Section 10) should be used as an on-site reference document for the commissioning, operations and decommissioning of the facility. Parties responsible for transgressing of the EMP should be held responsible for any rehabilitation that may need to be undertaken. The proponent could use an in-house Health, Safety, Security and Environment Management System in conjunction with the EMP. All commissioning, operations and decommissioning personnel must be taught the contents of these documents.

Should the Directorate of Environmental Affairs (DEA) of the MEFT find that the impacts and related mitigation measures, which have been proposed in this report, are acceptable, an environmental clearance certificate may be granted to the Proponent. The environmental clearance certificate issued, based on this document, will render it a legally binding document which should be adhered to. Focus could be placed on Section 9, which includes an EMP for this project. It should be noted that the assessment process's aim is not to stop the proposed activity, or any of its components, but to rather determine its impact and guide sustainable and responsible development as per the spirit of the EMA.

**Table 10-3. Impact Summary Class Values**

| Impact Category                             | Impact Type                                       | Commissioning /<br>Decommissionin | Operations |
|---|---|-----------------------------------|------------|
| <i>Positive Rating Scale: Maximum Value</i> |   | 5                                 | 5          |
| <i>Negative Rating Scale: Maximum Value</i> |   | -5                                | -5         |
| EO  | Employment and Skills                             | 2                                 | 2          |
| SC  | Demographic Profile and Community Health          | -1                                | -1         |
| EO  | Fuel Supply                                       |                                   | 2          |
| SC  | Traffic   | -1                                | 1          |
| SC  | Health, Safety and Security                       | -2                                | -2         |
| PC  | Fire  |                                   | -2         |
| PC  | Noise   | -1                                | -1         |
| PC  | Waste Production                                  | -1                                | -1         |
| PC/BE                                       | Groundwater, Surface Water and Soil Contamination | -2                                | -2         |
| PC  | Cumulative Impact                                 | -1                                | -1         |

BE = Biological/Ecological    EO = Economical/Operational    PC = Physical/Chemical    SC = Sociological/Cultural

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## **Appendix A: Proof of Public Consultation**

- ◆ Background Information Document
- ◆ Press and Site Notices



**Background Information Document**

**BACKGROUND INFORMATION DOCUMENT**

**ENVIRONMENTAL ASSESSMENT AND MANAGEMENT PLAN  
FOR A CONSUMER FUEL INSTALLATION AT OPUWO**

**TOTAL NAMIBIA**



February 2021



**1 INTRODUCTION**

Total Namibia (Pty) Ltd (the Proponent) intends to commission a consumer fuel installation at the Octagon Construction premises in Opuwo, Kunene Region (Figure 1). The facility will supply diesel to construction and fleet vehicles of Octagon Construction for road construction purposes. The installation will consist of two 23 m<sup>3</sup> aboveground, steel tanks inside an adequately sized steel bund area. Fuel will be dispensed to vehicles utilising drip trays to prevent spills.

The Proponent has requested Geo Pollution Technologies (Pty) Ltd (GPT) to apply for an environmental clearance certificate (ECC) for the consumer fuel installation. The ECC is required as per the Environmental Management Act No. 7 of 2007 (EMA). In support of the ECC application, an environmental scoping report (SR) and environmental management plan (EMP) will be submitted to the Ministry of Environment, Forestry and Tourism’s Directorate of Environmental Affairs (DEA).

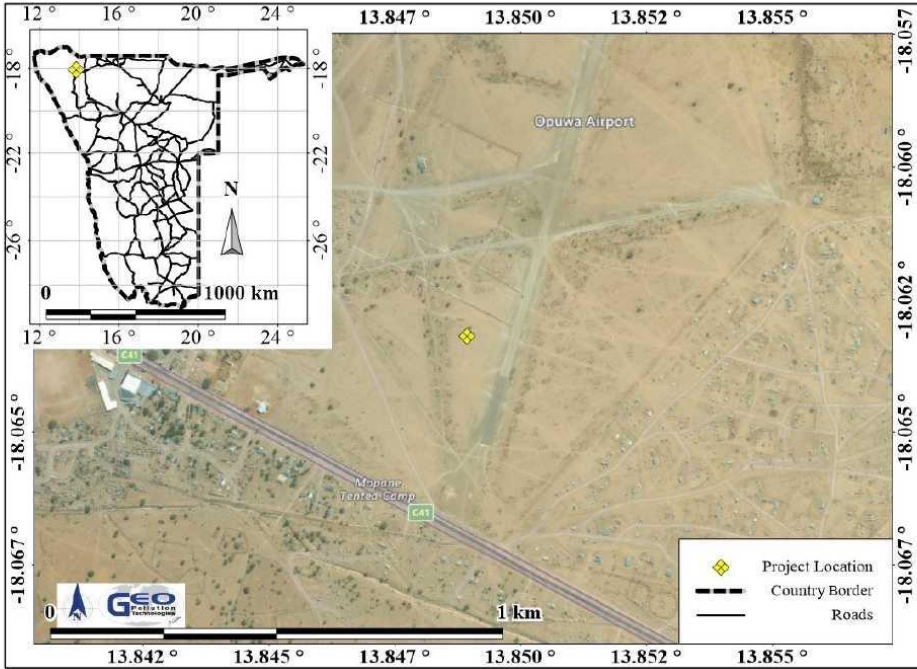


Figure 1. Project location

**2 PURPOSE OF THE BID**

With this background information document (BID), GPT aims to provide the DEA, authorities and interested and affected parties with information about the facility and to register the ECC application with the Ministry of Mines and Energy and the DEA.

### 3 PROJECT DESCRIPTION

Activities considered for the assessment have been divided into the following phases: planning, operational, maintenance and a decommissioning phases. A brief outline of expected activities for each phase is detailed below.

#### 3.1 PLANNING PHASE

Continuously, during construction and operations and prior to possible future decommissioning activities at the facility, it is the responsibility of the Proponent to ensure they are and remain compliant with all legal requirements. The Proponent must also ensure that all required management measures are in place prior to, and during all phases, to ensure potential risks and impacts are minimised. Typical planning activities include:

- ◆ Where not in place, obtain permits and approvals from local and national authorities including Ministry of Mines and Energy (consumer licence).
- ◆ Ensure correct zoning and subdivision of the property, if applicable.
- ◆ Make provisions to have a health, safety and environmental coordinator to implement the EMP.
- ◆ Ensure provisions for a fund to cater for restoration or rehabilitation activities in the event of environmental incidents or pollution.
- ◆ Ensure all appointed contractors and employees enter into an agreement with the Proponent which includes the EMP.
- ◆ Maintain a reporting system to report on aspects of operations, maintenance and decommissioning as outlined in the EMP. This is a requirement of the DEA.

#### 3.2 CONSTRUCTION AND MAINTENANCE

Namibian law requires all fuel installations to be constructed and maintained according to South African National Standards (SANS) 10089 and 10131, or better. Construction activities will entail the installation of the tanks inside a suitably bunded area. Drip trays will be used in areas where fuel will be offloaded and dispensed. During operations, maintenance and minor repairs will be performed on infrastructure as required. This may include painting, servicing and / or replacement of equipment.

#### 3.3 OPERATIONAL PHASE

Normal operations associated with the consumer fuel installation involve the receipt of diesel from road tankers, storage of the fuel in the storage tanks, and dispensing of fuel to fleet vehicles. Regular tank dips and reconciliations are performed to ensure there are no product losses and that fuel deliveries are scheduled on time. Administrative tasks, site security and cleaning of the premises continue on a daily basis to ensure the effective operations of the facility.

#### 3.4 DECOMMISSIONING PHASE

Decommissioning of the facility will entail removal of all equipment. When decommissioning occur, rehabilitation of the area may be required. After decommissioning, any pollution present on the site must be removed or remediated.

#### 3.5 PRELIMINARY IDENTIFIED IMPACTS

During the preparation of the EMP, all components of the environment will be considered. However, only those components which are, or may be, significantly impacted, or are deemed to be sensitive, will be assessed. These include the following:

- ◆ Human component (employee and visitor health and safety)
- ◆ Infrastructure (aesthetics, fire, integrity, etc.)
- ◆ Neighbours (noise, aesthetics, waste, traffic)
- ◆ Groundwater, surface water and soil (hydrocarbon spills, effluent generation and disposal, waste, pollutants)
- ◆ Ecosystem and biodiversity (pollutants)
- ◆ Socio economic characteristics (employment, training, skills, revenue)

#### 4 PUBLIC CONSULTATION

GPT invites all IAPs to provide in writing, any issues and suggestions regarding the project. This correspondence must include:

- ◆ Name and surname
- ◆ Organization represented or private interest
- ◆ Position in the organization
- ◆ Contact details
- ◆ Any direct business, financial, personal or other interest which you may have in the approval or refusal of the application.

All contributions become public knowledge and will be circulated along with the reports as per the EMA requirements. The comments, inputs and suggestions will also be submitted to the DEA along with how any issues have been addressed in the environmental assessment.

The public participation process will remain ongoing during the environmental assessment. However, all comments and concerns should be provided to GPT to ensure incorporation into the final report. For any additional information the project team may be contacted at:



**Geo Pollution Technologies (Pty) Ltd.**

Telephone: (+264-61) 257411

Fax: (+264) 88626368

E-mail: octagon@thenamib.com



Press Notice: The Republikein - 23 February 2021 and 02 March 2021

**PUBLIC PARTICIPATION NOTICE**  
**ENVIRONMENTAL ASSESSMENT FOR A CONSUMER FUEL INSTALLATION AT OPUWO, KUNENE REGION**

Geo Pollution Technologies (Pty) Ltd was appointed to undertake an environmental assessment for the construction of a new consumer fuel installation for Total Namibia (Pty) Ltd in Opuwo, Kunene Region. The facility will supply diesel to construction and fleet vehicles of Octagon Construction for road construction purposes. It will consist of two 23 m<sup>3</sup> aboveground, steel tanks inside an adequately sized concrete bund area. Fuel will be dispensed to vehicles on a concrete spill slab with catchment pits. More information regarding the project is available at: <http://www.thenamib.com/projects/projects.html>

The environmental assessment will be according to the Environmental Management Act of 2007 and its regulations as published in 2012.

All interested and affected parties are invited to register with the environmental consultant. By registering you are provided with the opportunity to share any comments, issues or concerns related to the facility, for consideration in the environmental assessment. Additional information can be requested from Geo Pollution Technologies.

All comments and concerns should be submitted to Geo Pollution Technologies by **05 March 2021**.

**André Faul**  
 Geo Pollution Technologies  
 Tel: +264-61-257411  
 Fax: +264-88626368  
 E-Mail: octagon@thenamib.com



# Fishcor verkoop kwota vir N\$39 m.

**VAN BL. 1**

Hy wou nie nader besonderhede verstreke oor die ondersoek waarmee die Finansiële Intelligensiesentrum (FIC) en die Teenkorrupsiekommissie (ACC) besig is nie.

Fishcor was die episentrum van die storm wat losgebars het toe die Fishrot-skandaal in November 2019 oopgevelek is.

Intussen blyk dit 'n klerkin die finansiële afdeling van Fishcor is kort gelede vir diefstal in hegtenis geneem nadat sy na bewering N\$150 000 gesteel het.

Gaomab II het gesê sy is ná dissiplinêre stappe gedoen is, ontslaan en die geld sal van haar pensioenuitbetaling verhaal word.

Oor die aanstelling van 'n nuwe uitvoerende hoof in die plek van mnr. Mike Nghipunya, wat in die Fishrot-saak in aanhouding is, het hy gesê nege potensiele kandidate het psigometriese

toetse ondergaan en 'n kortlys sal daaruit saamgestel word. Onderhoude sal vandeesdaand nog gevoer word, sê hy.

**REGRUKSTRATEGIE**

Gaomab II het gister klem gelê op die regrukstrategie waarmee die maatskappy tans besig is "om die nasionale visbron in samewerking met die Seafloower-groep van maatskappy tot voordeel van Namiërs te benut".

Tog wou hy nie opbrei op juis dié kwesies wat in die weg hiervan staan nie. Op 'n vraag oor waarom die Olupale,

'n fabrieksboot vir stokvis, Spanje op anker lê en nie in die Namibiese waters ontplooi word nie, het hy toegegee dit hou verband met die betaling van die vaartug wat volgens inligting nagenoeg N\$395 miljoen kos, asook die

lewering van stokviskwotas aan die Spaanse maatskappy Copemar. Laasgenoemde is sy vennoot (49%-aandeel) in die vismaatskappy, Seacope, op Lüderitz.

Wat Fishcor se verhouding met African Selection Trust (AST) sy 60%-vennoot in Seaflo Pelagic Processing (SPP) of Walvisbaai betref, het hy volgehou daar "is nie verantwoordbaarheid" van laasgenoemde skant nie.

Volgens Gaomab II het SPP ni verlede jaar oop kaart gespeel oor hoe hy twee kwotatoedeling van onderskeidelik 5 000 en 4 000 ton vir die vang van maasbanker benut het nie.

Republikein is eger in besit van dokumentasie waarin SPP die kwota benutting uiteensit.



Mnr. Mihe Gaomab II  
 FOTO ARGEF

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## BRUIDSPAAR WEN 'N GOEIE NAGRUS

Die Eelu-egpaar, Joel en Rebecca, die weners van Republikein se Bruidspaar van die Jaar-kompetisie 2020, geniet die gemak van hul nuwe Sealy Crown Jewel Teatro Plush-bed ter waarde van byna N\$40 000. Die bed is een van die pryse waarmee hulle weggestap het by verlede jaar se Namibië Toerisme Ekspo (NTE) en is deur Nictus geborg. FOTO VERSKAF



## Vrou 'speel net' met hondjies in wasmasjien

**VAN BL. 1**

Volgens Scott is dié hondjie dood omdat dit nie betyds teen katgriep ingeënt is nie.

Sy sê die vrou se honde is in 'n goeie toestand.

hondjies kan swem. Oor die hondjie op die muur, het sy gesê sy het net met die hondjie gespeel," het Burger gesê "Die vrou kan die honde in 'n bak water laat swem, nie in 'n vol wasmasjien nie."

- francoise@republikein.com.n



'n Skermgreep uit die video van die twee hondjies in die wasmasjien.

**TSUMBEB SE DBV VERSKIL**

Me. Natasha Burger van Tsumeb se DBV stem eensins saam dat dit nie 'n geval van diere mishandeling is nie.

"Die honde se lewens was nog steeds in gevaar en die feit bly staan dat die honde mishandel is," het sy benadruk.

Burger het gesê sy het Saterdag telefonies met die vrou gepraat.

"Sy het gesê sy wou net kyk of haar

## Press Notice: The Namibian Sun – 23 February 2021 and 02 March 2021

**4** | TUESDAY 23 FEBRUARY 2021  
NEWS

**Sun**

beginning on 20 January, start school.

and doing electrical wiring – which started in January. Currently, only the grade 11 are accommodated in the hostel. According to principal Josef Nangombe, worried parents have been calling him daily for updates. "It is a very stressful situation. I am trying my best to ensure all renovations are complete, but it is not in my hands," he said. Nangombe said government is currently facing a deficit in the approved material and this is contributing to the delay. The school and its management are currently in talks on how to handle the situation and are looking at other means to accommodate the learners. "The parents have suggested we look for nearby places to house the learners until the completion of the hostels, but facilities to cater for every one," he said. When contacted for comment, education regional director of the Oshana Region Hileni Amukana, said she is aware of the situation, but cannot comment as she is yet to visit the school and make her own assessments.

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**GEO** Pollution Technologies



**STRESSFUL: Mweshipandeka Senior Secondary School in Ongwediva. PHOTO: TUNGHOLE MUNGBA**

**4** | TUESDAY 2 MARCH 2021  
NEWS

**Sun**

**COMMITTEE FORMER BEHIND CLOSED DOORS**

**FLOOD TRAPS DISABLED PENSIONER IN HOUSE**

**KENYA KAMBOWE**  
SIKONDO

**An 83-year-old pensioner living with a disability in Kavango West Region's Kapako constituency is unable to leave her house after her homestead was flooded.**

As her wheelchair can't make it out, Valeria Hausiku, who lives with five other people, has been trapped in her home, helplessly watching on as her valuables are destroyed by storm water.

*Namibian Sun* visited Sikondo village, which is amongst five other villages which have been affected by recent flooding to the area, at the weekend.

The other villages are Mafugu, Ruurumwe, Nakazaza and Siyandeya, affecting about 700 households.

**Help needed**


Hausiku narrated her ordeal, saying she has experienced massive loss. Water has entered all the rooms and destroyed items such as food and household materials, while the structure of the house has been damaged as well, she said. She is unable to work her mahangu field which is under water, and this is worsened by the fact that she relies on her wheelchair to move around. She added that the chickens that survived the storm have fled the area and that she has nothing left. "The rain has destroyed our valuables and as it continues to rain, we experience more losses. "I myself cannot move any more because my wheelchair won't make it through the water. This is too much and we need urgent help," she stressed.

**Kavango West fumes**

Meanwhile, the Kavango West Regional Council has expressed dismay towards the Office of the Prime Minister (OPM) accusing it of negligence and a lack of urgency in addressing the matter.

In a statement issued by the region's spokesperson, Salomo Tenga, he indicated that communication was made with the OPM in February, but apart from a team that visited the regions, no action has been taken.

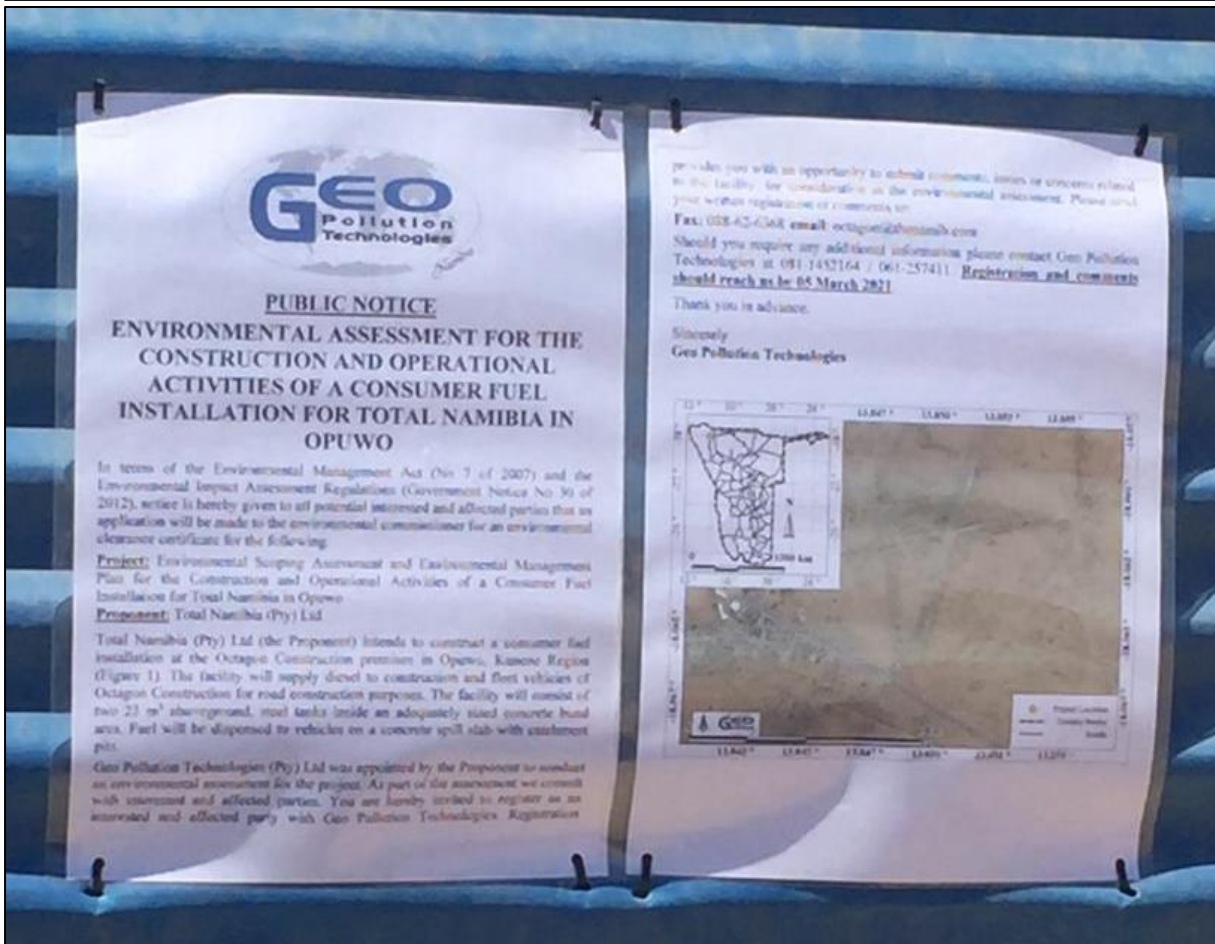
Tenga said the regional leadership is frustrated and are calling on the OPM to respond with urgency to avoid casualties. "A request to the responsible office is to treat emergency matters as urgent to avoid loss of lives in the process or consider the decentralisation of that function to regions for easier and faster response, since it is currently centralised," he added.



**TRAPPED: Valeria Hausiku, a disabled pensioner at Sikondo village who has been affected by recent flooding in the area. PHOTO: KENYA KAMBOWE**



Site Notice





**Appendix B: Consultants' Curriculum Vitae**



**ENVIRONMENTAL SCIENTIST****André Faul**

André entered the environmental assessment profession at the beginning of 2013 and since then has worked on more than 130 Environmental Impact Assessments including assessments of the petroleum industry, harbour expansions, irrigation schemes, township establishment and power generation and transmission. André's post graduate studies focussed on zoological and ecological sciences and he holds a M.Sc. in Conservation Ecology and a Ph.D. in Medical Bioscience. His expertise is in ecotoxicological related studies focussing specifically on endocrine disrupting chemicals. His Ph.D. thesis title was The Assessment of Namibian Water Resources for Endocrine Disruptors. Before joining the environmental assessment profession he worked for 12 years in the Environmental Section of the Department of Biological Sciences at the University of Namibia, first as laboratory technician and then as lecturer in biological and ecological sciences.

**CURRICULUM VITAE ANDRÉ FAUL**

|                   |   |  |
|-------------------|---|--|
| Name of Firm      | : | Geo Pollution Technologies (Pty) Ltd.  |
| Name of Staff     | : | ANDRÉ FAUL   |
| Profession        | : | Environmental Scientist  |
| Years' Experience | : | 18   |
| Nationality       | : | Namibian   |
| Position          | : | Environmental Scientist  |
| Specialisation    | : | Environmental Toxicology   |
| Languages         | : | Afrikaans – speaking, reading, writing – excellent<br>English – speaking, reading, writing – excellent |

**EDUCATION AND PROFESSIONAL STATUS:**

|                              |   |                                      |
|------------------------------|---|--------------------------------------|
| B.Sc. Zoology                | : | University of Stellenbosch, 1999     |
| B.Sc. (Hons.) Zoology        | : | University of Stellenbosch, 2000     |
| M.Sc. (Conservation Ecology) | : | University of Stellenbosch, 2005     |
| Ph.D. (Medical Bioscience)   | : | University of the Western Cape, 2018 |

|                     |             |
|---------------------|-------------|
| First Aid Class A   | EMTSS, 2017 |
| Basic Fire Fighting | EMTSS, 2017 |

**PROFESSIONAL SOCIETY AFFILIATION:**

Environmental Assessment Professionals of Namibia (Practitioner and Committee Member)

**AREAS OF EXPERTISE:**

Knowledge and expertise in:

- ◆ Water Sampling, Extractions and Analysis
- ◆ Biomonitoring and Bioassays
- ◆ Biodiversity Assessment
- ◆ Toxicology
- ◆ Restoration Ecology

**EMPLOYMENT:**

|           |   |  |
|-----------|---|--|
| 2013-Date | : | Geo Pollution Technologies – Environmental Scientist |
| 2005-2012 | : | Lecturer, University of Namibia                      |
| 2001-2004 | : | Laboratory Technician, University of Namibia         |

**PUBLICATIONS:**

|                             |      |
|-----------------------------|------|
| Publications:               | 5    |
| Contract Reports            | +130 |
| Research Reports & Manuals: | 5    |
| Conference Presentations:   | 1    |