



Excel Dynamic Solutions
(PTY) Ltd

Environmental Scoping Assessment (ESA) Study for:

The Proposed Establishment and Operation of a Truck port and Associated Facilities (Ultra City) on Farm Otjiwarongo Townlands South No. 308 in the Otjozondjupa Region



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EXECUTIVE SUMMARY

Asterisk Investments CC (hereinafter referred to Asterisk Investments or the Proponent) proposes to establish (construct), operate, and maintain a truck port and associated infrastructure (facilities) also known as the *Ultra City* on a six (6) -hectare (ha) area of Remainder of Portion 20 (hereinafter referred to as the *project site* or simply "*the site*"). The Remainder of Portion 20 is situated on the corner of Farm Otjiwarongo Townlands South No. 308 located about 5km south of Otjiwarongo at the corner of B1 and D2515 in the Otjozondjupa Region. The proposed project will include a site/customer filling station (with 2 fuel tanks), a convenient store, retail (a shopping centre), low-cost accommodation, and ablution facilities with changing rooms for travelers.

The proposed project includes activities that are listed in the 2012 Environmental Impact Assessment (EIA) Regulation of the Environmental Management Act (EMA) No. 7 of 2007 as activities that may not be undertaken without an Environmental Clearance Certificate (ECC). The listed activities as per EIA Regulations as relevant to the proposed development as associated facilities are listed below:

"LISTED ACTIVITY 9: 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.*
- *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 meters at any one location*
- *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.*

LISTED ACTIVITY 6: TOURISM DEVELOPMENT ACTIVITIES

- *The construction of resorts, lodges, hotels or other tourism and hospitality facilities."*

Associated activities include

'8. WATER RESOURCE DEVELOPMENTS

- *8.1 The abstraction of ground or surface water for industrial or commercial purposes".*

Subsequently, to fulfil the EMA requirements, Asterisk Investments appointed Excel Dynamic Solutions (Pty) Ltd (EDS), independent Environmental Consultants, to undertake an environmental scoping assessment (ESA) process.

The ESA process will include undertaking the required ESA process and submitting the ECC application to the Environmental Commissioner at the Department of Environmental Affairs and Forestry (DEAF) of the Ministry of Environment, Forestry & Tourism (MEFT) for evaluation and consideration of the ECC.

Brief Project Description

The project description is provided herein under Chapter 2 and the main activities are as follows:

- Planning and Design: paperwork such as site design and layouts are done in preparation of the site establishment and construction activities.
- Site Preparation and Construction: preparation the site for the erection of structures and infrastructure as well as, the installation of services. The site preparation will entail earthworks, and where required remove the vegetation that is hindering the site preparation. There will be a movement of light and heavy vehicles associated with construction activities.
- Duration: It is anticipated that construction work will take about 15 to 24 months, i.e., 1 year and 3 months to 2 years. The work will be carried out by an appointed construction contractor.
- Project Activities: Operational and Maintenance: This is the phase during which the Truck port and the associated facilities will be operational and offering services to customers or clients such as tourists and travelers alike. The truck port structure will consist of two fuel tanks (unleaded and diesel) for site and customers' utilization, engine oils and lubricants. The associated facilities will include a convenient store, retail: shopping centre with a food court, shopping outlets, tourist curio and deli, grocer, and agri- business outlet, accommodation: an overnight motel for road users / travellers, and ablution with changing rooms to serve road users and tourists.
- Maintenance of the site will be done by the Proponent's maintenance team. Alternatively, and where necessary, the maintenance work will be outsourced to an external maintenance contractor.

Public Consultation

Public Consultation Activities

Regulation 21 of the EIA Regulations details steps to be taken during a public consultation process and these have been used in guiding this process. The communication with interested and affected parties (I&APs) about the proposed activities was done through various meetings and notices as listed below. This was to ensure that I&APs are notified and afforded an opportunity to comment on the Study:

- The Stakeholders / I&APs: A list of stakeholders (I&APs) was developed and updated throughout the EIA process.
- A Background Information Document (BID) containing brief information about the proposed activities was compiled and hand circulated to registered Interested and Affected parties (I&APs),
- Newspaper Advertising (Public Notification): the ESA notices were published in *The Namibian Sun*, and *New Era* for two consecutive weeks, i.e., 02 and 09 March 2023. The newspaper adverts contained a summary of the proposed activities, activity and inviting members of the public to register as I&APs and or submit their comments/concerns for consideration in the ESA Report.
- Site / Public notices: A3 size printed posters were placed in Otjiwarongo at Otjiwarongo Municipality Offices (Head Office and Orwetoveni Offices) and Spar Supermarket's public notice board.
- Consultation Meeting: A consultation meeting was scheduled with invitation sent to registered I&APs and notices placed at the Otjiwarongo Municipality Offices (Head Office and Orwetoveni Offices) and Spar Supermarket's public notice board. The meeting was held on the 28th of March 2023 in Otjiwarongo (Orwetoveni Community Hall). The meeting was scheduled for 11h00 and attended by two I&APs (an official from MEFT's Otjiwarongo Forestry Office and one I&AP/member of the public). Some engagements were done onsite and in Town with other I&APs who could not make it to the consultation meeting.

The comments provided and received during the consultation period were noted and used to form a basis for the impact assessment in this EIA Report and to develop the Draft EMP.

The potential impacts that are anticipated from the proposed project activities were identified, described, and assessed. For the significant adverse (negative) impacts with medium rating,

appropriate management and mitigation measures were recommended for implementation by the Proponent, and the aim is to maximize the positive impacts of the proposed activities.

Some but few comments and concerns were made and raised on the proposed project activities, respectively. These comments were noted down and incorporated into the ESA Report and Draft EMP.

The assessment is therefore deemed sufficient and concludes that no further detailed assessments are required to the ECC application.

Recommendations

The EDS Consultants are confident that the potential negative impacts associated with the proposed project activities can be managed and mitigated by the effective implementation of the recommended management and mitigation measures, thus maximizing the benefits (positive impacts) of the project. The impacts' significance would also be improved by more effort and commitment towards monitoring the implementation of these measures.

The following impacts have been assessed and the assessment found that the negative impacts have a low, slightly medium and medium ratings. Therefore, the effective and monitoring of the implementation of the recommended management and mitigation measures provided in the EMP can reduce the significance from "slightly medium" to "low", and "medium" to "low", and where possible, bring the significance to negligible over time.

The assessment of positive impacts provided the following concluding ratings (post-mitigation):

- Socio-economic development: temporary and long-term employment opportunities as well as procurement of locally available goods and services for the project in all phases - *high positive significance*.
- Boosting of local, regional and national economic development – *medium to high positive significance*.
- Provision of accommodation and associated facilities for tourists and travelers alike - *high positive significance*.
- Increasing the safety of the truckers and cargo (goods being transported) by parking at a designated areas at the truck port - *high positive significance*.

- Provision of fuel (unleaded and diesel), engine oils, and lubricants to the project clients / travellers - *high positive significance*.

The conclusions on the rating of negative impacts (pre- and post-mitigation) are as follows:

- Soil disturbance: *medium (pre-mitigation) and low (post-mitigation)*.
- Loss of biodiversity through the removal of vegetation within the project footprints: *slightly high (pre-mitigation), medium and low (post-mitigation)*. The continued implementation of mitigation measures and monitoring will bring the significance down to 'low' rating.
- Risk of poaching of local wildlife – *medium (pre-mitigation) and low (post-mitigation)*.
- Pollution of soil and water resources from wastewater and effluent and hydrocarbons.
- Occupational and community health and safety risks: – *medium (pre-mitigation) and low (post-mitigation)*.
- Over-abstraction of water resources: *medium (pre-mitigation) and low (post-mitigation)*.
- Noise associated with project activities: *slightly medium (pre-mitigation) and low (post-mitigation)*.
- Waste generation through mishandling of project related waste: *medium (pre-mitigation) and low (post-mitigation)*.
- Accidental fire outbreaks: *slightly high to medium (pre-mitigation) and low (post-mitigation)*.
- Vehicular traffic safety: *medium (pre-mitigation) and low (post-mitigation)*.
- Dust generation and emissions (impact on local air quality): *medium (pre-mitigation) and low (post-mitigation)*.

It is therefore, recommended that the proposed truck port and associated infrastructure (facilities) be granted an environmental clearance, on the emphasis that:

- All the management and mitigation measures provided herein and in the Draft EMP are effectively and progressively implemented and monitored with annual external auditing.
- All required permits, licenses and approvals / consents for the proposed activities should be obtained as required. These include permits and licenses for groundwater abstraction, permit to remove protected species (vegetation), onsite fuel storage and ensuring compliance with these specific legal requirements.

- Asterisk Investment and their personnel or contractors comply with the legal requirements governing their project and its associated activities and ensure that project permits and or approvals required to undertake specific site activities are obtained and renewed as stipulated by the issuing authorities.
- The disturbed areas by the project activities are rehabilitated, as far as practicable.
- Environmental Compliance monitoring reports should be compiled and submitted to the DEAF every 6 months from the date of ECC issuance (as required).

Conclusions

In conclusion, with that being done, it is crucial for the Proponent and their workers and contractors to effectively implement the recommended management and mitigation measures to protect both the biophysical and social environment throughout the project duration. The aim is to promote environmental and social sustainability while ensuring a harmonious existence and proposed activities in the community and surrounding environment.

Disclaimer

EDS warrants that the findings and conclusion contained herein were accomplished in accordance with the methodologies set forth in the EMA of 2007 with its 2012 EIA Regulations. These methodologies are described as representing good customary practice for conducting an EIA for the purpose of identifying recognized environmental conditions. There is a possibility that even with the proper application of these methodologies there may exist on the subject Project Site conditions that could not be identified within the scope of the assessment, or which were not reasonably identifiable from the available information. The EDS Consultants believe that the information obtained from the record review and during the public consultation processes concerning the proposed project activities is reliable. However, the Consultants cannot and do not warrant or guarantee that the information provided by the other sources is accurate or complete. The conclusions and findings set forth in this Report are strictly limited in time and scope to the date of the evaluations. No other warranties are implied or expressed.

Some of the information provided in this Report is based upon personal interviews, public / stakeholders' engagement and research of available documents, records, and maps held by the appropriate government and private agencies. This Report is therefore subject to the limitations of historical documentation, availability, and accuracy of pertinent records and the personal recollections of the persons contacted or consulted.

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Appendix C: Proof of Consultation / Public Participation Process - *uploaded separately as requested*

C1: EIA Notification in the newspapers (*The Namibian*, and *New Era*)

C2: Consultation / Engagement Minutes and attendance register from the Consultation Meeting & Engagement Sessions

Appendix D: Land Use Consent / Memorandum of Understanding - *uploaded separately as requested*

LIST OF ABBREVIATIONS

Abbreviation	Meaning
CV	Curriculum Vitae
DEAF	Department of Environmental Affairs and Forestry
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner
ECC	Environmental Clearance Certificate
EDS	Excel Dynamic Solutions
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
EPFIs	Equator Principle Financial Institutions
ESA	Environmental Scoping Assessment
GG & GN	Government Gazette & Government Notice
HDPE	High density Polyethylene
I&APs	Interested and Affected Parties
IFC	International Finance Corporation
MAWLR	Ministry of Agriculture, Water and Land Reform

Abbreviation	Meaning
MEFT	Ministry of Environment, Forestry and Tourism
MME	Ministry of Mines and Energy
NTA	Namibia Tourism Board
PPE	Personal Protective Equipment
TOR	Terms of Reference
UNCCD	The United Nations Convention to Combat Desertification

KEY TERMS

Terms	Definition
Alternative	A possible course of action, in place of another that would meet the same purpose and need of the proposal.
Baseline	Work done to collect and interpret information on the condition/trends of the existing environment.
Biophysical	That part of the environment that does not originate with human activities (e.g., biological, physical and chemical processes).
Cumulative Impacts/Effects Assessment	In relation to an activity, means the impact of an activity that 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.
Decision-maker	The person(s) entrusted with the responsibility for allocating resources or granting approval to a proposal.
Ecological Processes	Processes which play an essential part in maintaining ecosystem integrity. Four fundamental ecological processes are the cycling of water, the cycling of nutrients, the flow of energy and biological diversity (as an expression of evolution).

Terms	Definition
Environment	As defined in Environmental Management Act - the complex of natural and anthropogenic factors and elements that are mutually interrelated and affect the ecological equilibrium and the quality of life, including – (a) the natural environment that is land, water, and air; all organic and inorganic matter and living organisms and (b) the human environment that is the landscape and natural, cultural, historical, aesthetic, economic and social heritage and values.
Environmental Management Plan	As defined in the EIA Regulations (Section 8(j)), a plan that describes how activities that may have significant environments effects are to be mitigated, controlled, and monitored.
Interested and Affected Party (I&AP)	In relation to the assessment of a listed activity includes - (a) any person, group of persons or organization interested in or affected by an activity; and (b) any organ of state that may have jurisdiction over any aspect of the activity.
Fauna and Flora	All the animals and plants found in an area.
Mitigation	The purposeful implementation of decisions or activities that are designed to reduce the undesirable impacts of a proposed action on the affected environment.
Monitoring	Activity involving repeated observation, according to a pre-determined schedule, of one or more elements of the environment to detect their characteristics (status and trends).
Proponent	Organization (private or public sector) or individual intending to implement a development proposal, but also as defined in the Environmental Management Act, a person who proposes to undertake a listed activity.
Public Consultation/Involvement	A range of techniques that can be used to inform, consult or interact with stakeholders affected by the proposed activities.
Protected Area	Refers to a protected area that is proclaimed in the Government Gazette according to the Nature Conservation Ordinance number 4 of 1975, as amended.
Scoping level	An early and open activity to identify the impacts that are most likely to be significant and require specialized investigation during the EIA work. Can also be used to identify alternative project designs/sites to be

Terms	Definition
	assessed, obtain local knowledge of site and surroundings, and prepare a plan for public involvement. The results of scoping are frequently used to prepare a Terms of Reference for the specialized input into full EIA.
Significant 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
Terms of Reference (TOR)	Written requirements governing full EIA input and implementation, consultations to be held, data to be produced and form/contents of the EIA Report. Often produced as an output from scoping.

1 INTRODUCTION

1.1 Project Background and Locality

Asterisk Investments CC (hereinafter referred to Asterisk Investments or the Proponent) proposes to establish (construct), operate, and maintain a truck port¹ and associated infrastructure (facilities) also known as the *Ultra City* on a six (6) -hectare (ha) corner area of Remainder of Portion 20 (hereinafter referred to as the *project site* or simply "*the site*"). The Remainder of Portion 20 is situated on the corner of Farm Otjiwarongo Townlands South No. 308 located about 5km south of Otjiwarongo at the corner of B1 and D2515 in the Otjozondjupa Region (please refer to Figure 1-1). The proposed project will include a site/customer filling station (with two fuel tanks), a convenient store, retail (a shopping centre), low-cost accommodation (motel), and ablution facilities with changing rooms for travelers.

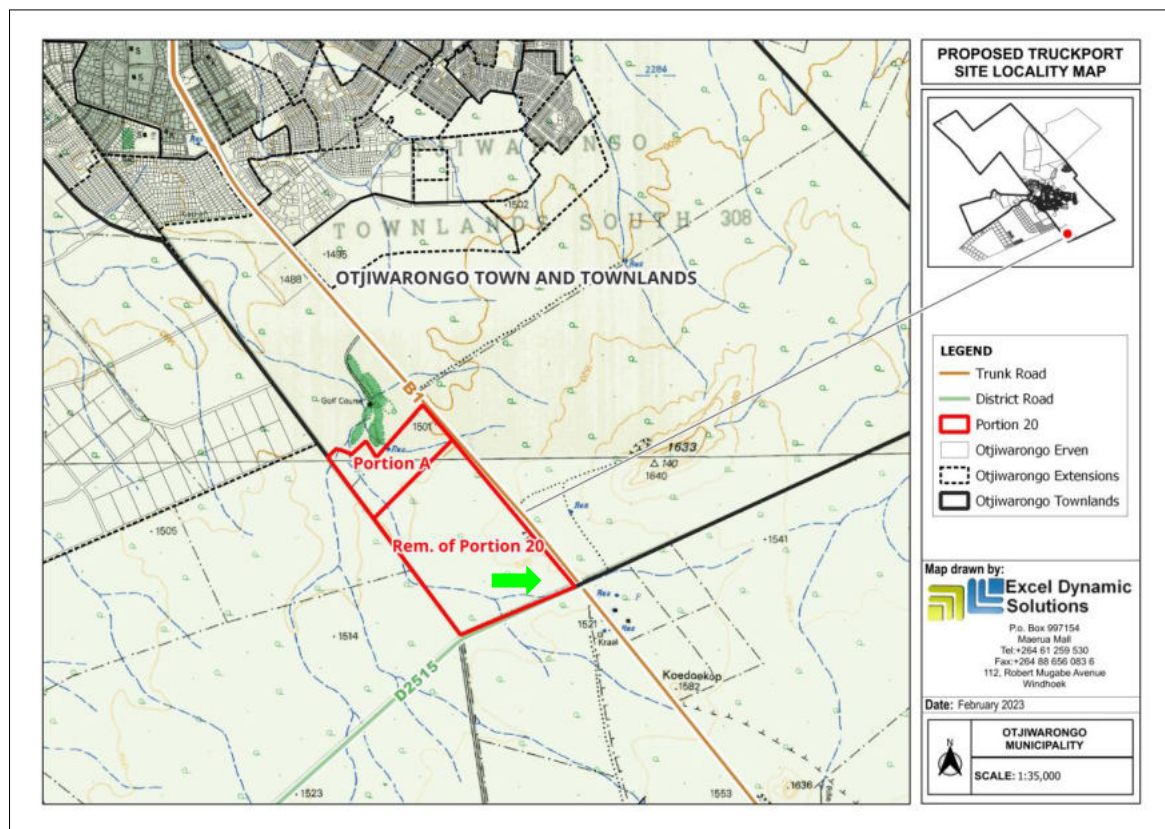


Figure 1-1: The locality map of the Truck port and associated facilities (infrastructure) on Remainder of Portion 20 (Farm Otjiwarongo Townlands South No. 308)

¹ Truck port: a facility for filling station, vehicle maintenance, selling of spare parts, tourist information, take away shop, café, tourist accommodation, caravan park and rest rooms (source: <https://www.lawinsider.com/dictionary/truck-port>).

1.2 The Need for the EIA Study

The proposed project includes activities that are listed in the 2012 Environmental Impact Assessment (EIA) Regulation of the Environmental Management Act (EMA) No. 7 of 2007 as activities that may not be undertaken without an Environmental Clearance Certificate (ECC). The listed activities as per EIA Regulations as relevant to the proposed development as associated facilities are listed below:

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- *9.1 The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.*
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LISTED ACTIVITY 6: TOURISM DEVELOPMENT ACTIVITIES

- *The construction of resorts, lodges, hotels or other tourism and hospitality facilities.”*

Associated activities include

‘8. WATER RESOURCE DEVELOPMENTS

- *8.1 The abstraction of ground or surface water for industrial or commercial purposes”.*

Subsequently, to fulfil the EMA requirements, Asterisk Investments appointed Excel Dynamic Solutions (Pty) Ltd (EDS), independent Environmental Consultants, to undertake an environmental scoping assessment (ESA) process.

The ESA process will include undertaking the required ESA process and submitting the ECC application to the Environmental Commissioner at the Department of Environmental Affairs and Forestry (DEAF) of the Ministry of Environment, Forestry & Tourism (MEFT) for evaluation and consideration of the ECC.

1.3 Terms of Reference and Scope of Works

There are no specific Terms of Reference (TOR) provided by the Proponent for the ESA Study. Therefore, the EDS Consultants undertook the Study according to the requirements of the EMA and its 2012 EIA Regulations (Government Notice. No. 30 of 2012) and apply for the ECC.

The application for the ECC was compiled and submitted to the Environmental Custodian, the Ministry of Environment, Forestry and Tourism (MEFT)'s Department of Environmental Affairs and Forestry (DEAF). The Background Information Document (BID) was also uploaded on the online ECC Portal for project registration purposes.

The findings of the ESA process are incorporated into this Report and the Draft Environmental Management Plan (EMP) - Appendix A. Upon submission of an ESA Report and Draft EMP at MEFT, an ECC for the proposed project activities will be considered by the Environmental Commissioner.

1.4 Appointed Environmental Assessment Practitioner

To satisfy the requirements of the EMA and its 2012 EIA Regulations, the Proponent appointed a team of independent environmental consultants EDS, to conduct the required ESA process.

The ESA Study is headed by Mr. Nerson Tjelos, a qualified and experienced Geoscientist and experienced Environmental Assessment Practitioner (EAP) with over 8 years of experience in Natural Resources Consulting and Business Development. The ESA consultation process and reporting were done by Ms. Fredrika Shagama, an experienced EAP and qualified Geohydrologist and experienced and registered EAP with over 7 years of experience in the Environmental and Groundwater Management Consulting sector. Ms. Shagama's CV is appended as Appendix B.

1.5 The Need for the Proposed Project Activities

Asterisk Investment made a market research on the need for a truck port in the Otjiwarongo area, particularly along the stretch of the popular highway (B1). The truck drivers often experience difficulty finding safe truck parking spaces in the area. The shortage of truck ports (and associated facilities such as resting places) according to Saunderson (2019) can negatively affect highway safety, infrastructure condition, public safety, and quality of life. Furthermore, a truck port and safe parking particularly for truckers is a particular problem when drivers need to change plans in

response to unexpected changes along their route, such as weather or congestion. These parking and information shortages have two impacts on businesses, namely the decrease in the driver's job satisfaction, and parking in undesignated areas exposes drivers to a higher likelihood of either theft or cargo damage and even injury or death (Saunderson, 2019).

It is note that drivers' desire to accommodate their natural sleep cycles results in greater demand for truck parking spaces at night than during the day. This is also supported by the Namibian Traffic Regulations that prohibit parking at undesignated areas, thus, encouraging commercial drivers to seek other locations for parking (Saunderson, 2019).

For Asterisk Investment, the Truck port would be equipped with facilities not only to serve truckers but also other travellers, including tourists who would desire spending some time or resting (hours, nights or days) at low-cost accommodation facility along their way/route. Thus, in addition to safe parking zones for trucks and vehicles for other customers to the truck port, the facility will be offering services such as:

- Two onsite fuel tanks (unleaded and diesel) for site and customers' utilization, engine oils and lubricants. This is not a standard fuel service station but a fuel supply for the site' and customers' vehicles,
- Convenient store,
- Retail: shopping centre with a food court, shopping outlets, tourist curio and deli, grocer, and agri- business outlet aimed at serving the facility's customers (travellers/road users, truckers, etc.),
- Low-cost accommodation: an overnight motel for road users / travellers, and
- Ablution and change rooms to serve road users and tourists.

It is for the reasons provided above that the truck port is needed in the Otjiwarongo area at the proposed site just 5km outside of Otjiwarongo Town. The truck port would be essential and contribute to the wellness and safety of both the truckers, other road users, residents of Otjiwarongo and surrounding areas. This development will not only alleviate the need for such a fully-fledged facility, but also contribute to the economic benefits of the Region, directly and indirectly.

The description of the proposed activities is provided under Chapter 2 (next chapter).

2 PROJECT DESCRIPTION: PROPOSED PROJECT ACTIVITIES

The proposed activities entail the construction of the truck port with its associated facilities and subsequent operations, as well as the maintenance of the site by the Proponent.

The proposed activities are presented under the following subheadings.

2.1 Planning and Design

The project commences with the planning and design stage whereby paperwork such as site design and layouts are done in preparation of the site establishment and construction activities. It is also during this stage during which the environmental and technical analysis are carried out.

The preliminary site drawings (layouts) of the proposed truck port and associated facilities are not yet available. However, the site impressions of how the Ultra City facility (truck port) would look like is shown in Figure 2-1 below.



Figure 2-1: The image impressions of the proposed Ultra City onsite (Asterisk Investment, 2023)

2.2 Site Preparation and Construction

This is the stage during which the Proponent will prepare the site for the erection of structures and infrastructure as well as, the installation of services. The site preparation will entail earthworks, and where required remove the vegetation that is hindering the site preparation. There will be a movement of light and heavy vehicles associated with construction activities.

Duration: It is anticipated that construction work will take about 15 to 24 months, i.e., 1 year and 3 months to 2 years. The work will be carried out by an appointed construction contractor.

2.2.1 Installation of Services, Infrastructures and Erection of Structures

The construction works onsite will entail the installation and erection of the following services and structures, respectively for in preparation of the Ultra City operations:

- A sufficient number of fuel tanks (unleaded and diesel) fitted with submersible pumps and ancillary equipment (automatic tank gaging etc.) will be installed onsite. The tanks are expected to dispense a minimum of one million (1,000,000) litres or one thousand cubic meters (1,000m³) of fuel per month for site and customers' utilization, i.e., truckers and truck port customers (travelers and tourists alike).
- Fuel dispensing islands inclusive of pump island servicing equipment and forecourt.
- Water/oil separator: for ease of connections, HDPE fuel delivery pipeline system.
- Installation of potable water supply and wastewater disposal pipelines as well as electrical cables for power supply.
- Installation of parking zones / areas for trucks, other customers' vehicles and project related goods and services' loading and offloading zones.
- A localized stormwater drainage system will be installed to capture fugitive leak fuel from the truck port filling area. The leak (waste fuel) will be directed to an oil separator so that it does not enter the storm drain or the environment.
- A 24-hour convenient store to be attached to the truck port that will serve engine oils and lubricants for vehicles.
- Retail: shopping centre with a food court, shopping outlets, tourist curio and deli, grocer, and agri- business outlet.
- Low-cost accommodation: an overnight motel for road users / travelers.
- Ablution and changing rooms to serve road users and tourists. Accommodation, office facilities and other administrative buildings with toilets and washrooms will be connected to the septic tank systems or connections to municipal services.

In terms of Civil and structural design and layout for site, kerb lines, concrete hard standing areas and containment slabs, layer works and appropriate forecourt and surrounding surfacing (where required), road marking, subsurface spill containment drainage system.

The appointed contractor will construct a temporary site boundary wall (most probably using corrugated iron sheets) to limit access to the site and ensuring the safety of both people and animals around the site. Construction waste will be kept on-site during construction and removed on a regular basis to the Otjiwarongo Municipality dumpsite (solid waste management facility).

2.3 Project Activities: Operational and Maintenance

This is the phase during which the Truck port and the associated facilities will be operational and offering services to customers or clients such as tourists and travelers alike.

Maintenance of the site will be done by the Proponent’s maintenance team. Alternatively, and where necessary, the maintenance work will be outsourced to an external maintenance contractor.

2.4 Human Resources, Services, and infrastructure

The resources, services and infrastructure presented under Table 2-1 below will be required for the project activities.

Table 2-1: The required human resources, services and infrastructures for the project

Human resources, Services & Infrastructure	Human resources, Services & Infrastructure – Cont.
<p><u>-Human resources (and accommodation):</u> About 200 to 250 people will be employed onsite for construction. For the operational phase, 100 to 120 people will be required to work onsite. Since the site is merely 5km outside Otjiwarongo, the workforce will be commuting from Otjiwarongo.</p> <p>Transport for the construction workers will be agreed upon, but most likely the construction contractor will be responsible for their workers. For the operational phase,</p>	<p><u>-Accessibility (roads):</u> The site will be accessed from the B1 via an off-ramp, and in compliance with the 100 meters building line restriction.</p> <p><u>-Waste management:</u> Sewage, solid waste, and hazardous waste produced onsite will be sorted accordingly, stored, and disposed of at appropriate waste facilities in Otjiwarongo.</p> <p><u>-Health and Safety:</u> Appropriate Personal Protective Equipment (PPE) will be provided to project personnel in</p>

Human resources, Services & Infrastructure	Human resources, Services & Infrastructure – Cont.
<p>the workers' transport from Otjiwarongo will be agreed upon and arrangements thereof. Therefore, no onsite accommodation for workers will be required.</p> <p><u>-Water supply:</u> the required water for the project will be sourced from a site borehole, and where needed, particularly during construction, water may be supplied by the (purchased from) Municipality of Otjiwarongo. The quantity or volume of water required is not yet known.</p> <p><u>-Fuel Supply (Machinery and Equipment):</u> During construction, diesel powered machinery and equipment will be used, but the fuel quantities are not yet known. There will be a generator onsite during construction.</p> <p><u>-Power supply:</u> The site will be connected to the existing CENORED power grid for operations. Solar energy will also be utilized onsite.</p>	<p>all phases. During construction, the site will be equipped with one fully furnished first aid kit, which two (2) personnel will be trained to administer. At least two first aid kits will be onsite for the operational phase.</p> <p><u>-Potential Accidental Fire Outbreaks:</u> Fire extinguishers will be readily available in vehicles and at various operational sites such as offices, workshops, shops, motel, and other buildings on-site. Training on basic firefighting skills will be provided to some of the site personnel (workers). Two well-serviced fire extinguishers will be onsite during construction.</p> <p><u>-Project Equipment, Material, Machinery, and Vehicles:</u> The construction will consist of two to three 4X4 pickup trucks (bakkies), two heavy trucks, a loader, water and fuel storage containers, a backup generator for power, etc.</p>

The alternatives considered for the proposed Project in terms of “No-Go”, location, methods and supporting services and infrastructures are presented under the next chapter.

3 PROJECT ALTERNATIVES

Alternatives are defined as the “*different means of meeting the general purpose and requirements of the activity*” (EMA, 2007). This section will highlight the different ways in which the project can be undertaken and to identify the alternative that will be the most practical, but least damaging to the environment is identified.

Once the alternatives have been established, these are examined by asking the following three questions:

- What alternatives are technically and economically feasible?
- What are the environmental effects associated with the feasible alternatives?
- What is the rationale for selecting the preferred alternative?

The alternatives considered for the proposed development are discussed in the following subsections.

3.1 Types of Alternatives Considered

3.1.1 The "No-go" Alternative

The “no action” alternative implies that the status quo remains, and nothing happens. Should the proposed activities be discontinued, none of the potential impacts (positive and negative) identified would occur.

This option was considered and a comparative assessment of the environmental and socio-economic impacts of the “no action” alternative was undertaken to establish what benefits might be lost if the project is not implemented. The key benefits that may never be realized if the proposed project does not go ahead include:

- Over 200 to 250 job opportunities during construction and 100 to 120 jobs during the operational phases of the project.
- No realization of local businesses empowerment through the procurement of goods and services.
- Presence of a truck port and associated services such as resting facilities for travellers on this part of the Otjiwarongo.

- Loss of income to the government through tax structures and others.

Considering the above losses, the “no-action/go” alternative was not considered a viable option for this project.

3.1.2 Project Location

The project location has been selected due to the lack of a truck port on this side of the Otjiwarongo area. Therefore, the site locality is viable.

3.1.3 Supporting Services, and Infrastructures

Certain alternatives were considered for the different supporting infrastructures envisaged to ensure that the most feasible options were selected. These were weighed in terms of technological, economic, and environmental limitations in selecting the most feasible option(s). The alternative considered in this regard are presented in Table 3-1 below.

Table 3-1: Service infrastructure and structures (technical resources) alternatives considered

Category of Infrastructure	Alternatives Considered	Justification for selected option(s)
Accommodation	<u>Construction Phase:</u> -Accommodation in Otjiwarongo -Accommodation onsite	-Accommodation in Otjiwarongo is justifiable since the project site merely 5km outside of Town. Besides, this would eliminate the pressure exerted on the site to accommodate over 100 employees onsite during the project phases
Water supply	-Abstracting water from the site borehole -Carting water from elsewhere and or drill an additional/project borehole	-The site is located on groundwater aquifer with low groundwater potential. Therefore, the Proponent may consider carting water from the Municipality (through a pipeline) to relieve the pressure off the site borehole.

The above provided project description, associated activities and considered alternatives thereto are governed by specific legal framework, from a local, regional, national to international perspective. The presentation of these legal requirements is provided under Chapter 4.

4 LEGAL FRAMEWORK: LEGISLATION, POLICIES AND GUIDELINES

A review of applicable and relevant national (Namibian) and international legislation, policies, and guidelines to the proposed activities is given in this section. This review serves to inform the project Proponent, Interested and Affected Parties, and the decision-makers at the DEAF of the requirements and expectations, as laid out in terms of these instruments, to be fulfilled to establish the proposed project activities.

4.1 Local and National Legal Requirements (Legislation, Acts, Policies, Ordinances)

The legal obligations that are relevant to the project and related activities are given in Table 4-1.

Table 4-1: Applicable local, national and international standards, policies and guidelines governing the proposed project

Legislation / Policy / Guideline: Custodian	Relevant Provisions	Implications for this project
<p>The Constitution of the Republic of Namibia, 1990 as amended: <u>Government of the Republic of Namibia</u></p>	<p>The Constitution of the Republic of Namibia (1990 as amended) addresses matters relating to environmental protection and sustainable development. Article 91(c) defines the functions of the Ombudsman to include:</p> <p>“...the duty to investigate complaints concerning the over-utilisation of living natural resources, the irrational exploitation of non-renewable resources, the degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia...”</p> <p>Article 95(l) commits the state to actively promoting and maintaining the welfare of the people by adopting policies aimed at the:</p> <p>“...Natural resources situated in the soil and on the subsoil, the internal waters, in the sea, in the continental shelf, and in the exclusive economic zone are property of the State.”</p>	<p>By implementing the environmental management plan, the establishment will be in conformance with the constitution in terms of environmental management and sustainability.</p> <p>Ecological sustainability will be main priority for the proposed development.</p>

Legislation / Policy / Guideline: Custodian	Relevant Provisions	Implications for this project
<p>Environmental Management Act (No. 7 of 2007) and its 2012 Environmental Impact Assessment (EIA) Regulations (Government Gazette (GG) No. 4878 Government Notice (GN) No. 30): <u>Ministry of Environment, Forestry and Tourism (MEFT)</u></p>	<p>The EMA has stipulated requirements to complete the required documentation to obtain an Environmental Clearance Certificate (ECC) for permission to undertake certain listed activities.</p> <p>The (EIA) Regulations detail requirements for public consultation within a given environmental assessment process (GN 30 Section (S) 21). The EIA regulations also outline the required details of a Scoping / EIA Report (GN 30 S8) and an Assessment Report (GN 30 S15).</p>	<p>The EIA Study has been conducted in accordance with the EMA and its Regulation. This is presented under Chapter 6 of this Report.</p> <p>An ECC application has been launched with the MEFT. This EIA Report and Draft EMP will be submitted to the Environmental Commissioner at DEAF for evaluation and consideration of the ECC.</p>
<p>Forestry Act (Act No. 12 of 2001): <u>Ministry of Environment, Forestry and Tourism (MEFT)</u></p>	<p>The Act provides for the management and use of forests and forest products.</p> <p>Section 22. (1) provides: "Unless otherwise authorised by this Act, or by a licence issued under subsection (3), no person shall on any land which is not part of a surveyed erven of a local authority area as defined in section 1 of the Local Authorities Act, 1992 (Act No. 23 of 1992) cut, destroy or remove - (a) vegetation which is on a sand dune or drifting sand or on a gully unless the cutting, destruction or removal is done for the purpose of stabilising the sand or gully; or (b) any living tree, bush or shrub growing within 100 m of a river, stream or watercourse."</p>	<p>The site moderately to densely vegetated by shrubs and trees of the protected species (the camelthorns or <i>Acacia (Vachellia)</i>). Therefore, the Proponent will be required to apply for the Permit to remove the trees where it is really necessary. The vegetation that is not within the actual footprints of the project site area, and do not need to be removed, should be left as such as to conserve floral biodiversity onsite.</p>
<p>Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001): <u>Ministry of Mines and Energy (MME)</u></p>	<p>Regulation 3(2)(b) states that "No person shall possess or store any fuel except under authority of a licence or a certificate, excluding a person who possesses or stores such fuel in a quantity of 600 litres or less in any container kept at a place outside a local authority area"</p>	<p>A consumer installation license/certificate to store fuel (in excess of 600 litres) onsite is required. Therefore, this certificate should be applied for from MME's Directorate of Petroleum Affairs.</p>

Legislation / Policy / Guideline: Custodian	Relevant Provisions	Implications for this project
Namibia Tourism Board Act 21 of 2000: <u>Ministry of Environment, Forestry and Tourism (MEFT)</u>	To establish the Namibia Tourism Board (NTA) and to provide for its functions; to provide for the registration and grading of accommodation establishments; to provide for the declaration of any sector of the tourism industry as a regulated sector and for the registration of businesses falling within a regulated sector; and to provide for matters incidental thereto.	Section 19 (Accommodation establishments to be registered) to 30 should be complied with. The Proponent will need to consult with the NTA on the requirements for the establishment and operation of a Motel at the truck port.
Road Traffic and Transport Act, No. 22 of 1999: <u>Ministry of Works and Transport (MWT) (Roads Authority of Namibia)</u>	The Act provides for the establishment of the Transportation Commission of Namibia; for the control of traffic on public roads, the licensing of drivers, the registration and licensing of vehicles, the control and regulation of road transport across Namibia's borders; and for matters incidental thereto. Should the Proponent wish to undertake activities involving road transportation or access onto existing roads, the relevant permits will be required	Mitigation measures should be provided for road use and traffic safety. The site access permit from the B1 or D2515 must be applied for and obtained from the Roads Authority.
The Regional Councils Act (No. 22 of 1992): <u>Ministry of Urban and Rural Development (MURD)</u>	This Act sets out the conditions under which Regional Councils must be elected and administer each delineated region. From a land use and project planning perspective, their duties include, as described in section 28 "to undertake the planning of the development of the Region for which it has been established with a view to physical, social and economic characteristics, urbanisation patterns, natural resources, economic development potential, infrastructure, land utilisation pattern and sensitivity of the natural environment.	The relevant Regional Councils are I&APs and must be consulted during the EIA process. The project site falls under the Otjozondjupa Regional Council (and Otjiwarongo Constituency Office); therefore, they should be consulted.
Local Authorities Act No. 23 of 1992: Regulated under the <u>Ministry of Urban and Rural Development</u>	To provide for the determination, for purposes of local government, of local authority councils; the establishment of such local authority councils; and to define the powers, duties and functions of local authority councils; and to provide for incidental matters.	The Otjiwarongo Municipality is the responsible Local Authority of the area. Therefore, the project Proponent should ensure that the Site activities follow the Act and its Regulations, as relevant to the project.

Legislation / Policy / Guideline: Custodian	Relevant Provisions	Implications for this project
	<p>This includes the management of waste</p>	
<p>Water Act 54 of 1956: <u>Ministry of Agriculture, Water and Land Reform (MAWLR)</u></p>	<p>The Water Resources Management Act 11 of 2013 is presently without Regulations; therefore, the Water Act No. 54 of 1956 is still in force:</p> <p>Prohibits the pollution of water and implements the principle that a person disposing of effluent or waste has a duty of care to prevent pollution (S3 (k)).</p> <p>Provides for control and protection of groundwater (S66 (1), (d (ii)).</p> <p>Liability of clean-up costs after closure/abandonment of an activity (S3 (l)).</p>	<p>The protection (both quality and quantity/abstraction) of water resources should be a priority.</p> <p>The permits and license required thereto should be obtained from MAWLR's relevant Departments (these permits include Borehole Drilling Permit (if considering the drilling of a new/project borehole), Groundwater Abstraction & Use Permits, and when required, the Wastewater / Effluent Discharge Permits).</p>
<p>Water Resources Management Act (No 11 of 2013): <u>Ministry of Agriculture, Water and Land Reform (MAWLR)</u></p>	<p>The Act provides for the management, protection, development, use and conservation of water resources; and provides for the regulation and monitoring of water services and to provide for incidental matters. The objects of this Act are to:</p> <p>Ensure that the water resources of Namibia are managed, developed, used, conserved and protected in a manner consistent with, or conducive to, the fundamental principles set out in Section 66 - protection of aquifers, Subsection 1 (d) (iii) provide for preventing the contamination of the aquifer and water pollution control (S68).</p>	
<p>National Heritage Act No. 27 of 2004: <u>Ministry of Education, Arts and Culture (MEAC)</u></p>	<p>To provide for the protection and conservation of places and objects of heritage significance and the registration of such places and objects; to establish a National Heritage Council; to establish a National Heritage Register; and to provide for incidental matters.</p>	

Legislation / Policy / Guideline: Custodian	Relevant Provisions	Implications for this project
The National Monuments Act (No. 28 of 1969): <u>Ministry of Education, Arts and Culture (MEAC)</u>	The Act enables the proclamation of national monuments and protects archaeological sites.	The Proponent should ensure compliance with this Acts' requirements. The necessary management measures and related permitting requirements must be taken. This done by consulting with the National Heritage Council (NHC) of Namibia.
Soil Conservation Act (No 76 of 1969): <u>Ministry of Agriculture, Water and Land Reform (MAWLR)</u>	The Act makes provision for the prevention and control of soil erosion and the protection, improvement and conservation of soil, vegetation and water supply sources and resources, through directives declared by the Minister.	For surface linked activities such as site preparation (earthworks and service cable trenches), duty of care must be applied to soil conservation.
Public Health Act (No. 36 of 1919): <u>Ministry of Health and Social Services (MHSS)</u>	Section 119 states that “no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health.”	The Proponent and all its employees should ensure compliance with the provisions of these legal instruments.
Health and Safety Regulations GN 156/1997 (GG 1617): <u>Ministry of Health and Social Services (MHSS)</u>	Details various requirements regarding health and safety of labourers.	
Public and Environmental Health Act No. 1 of 2015: <u>Ministry of Health and Social Services (MHSS)</u>	The Act serves to protect the public from nuisance and states that no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health.	The Proponent should ensure that the project infrastructure, vehicles, equipment, and machinery are designed and operated in a way that is safe, or not injurious or dangerous to public health and that the noise and dust emissions which could be considered a nuisance remain at acceptable levels. The public and environmental health should be preserved and remain uncompromised.

Legislation / Policy / Guideline: Custodian	Relevant Provisions	Implications for this project
Hazardous Substance Ordinance, No. 14 of 1974: <u>Ministry of Health and Social Services (MHSS)</u>	The ordinance provides for the control of toxic substances. It covers manufacture, sale, use, disposal and dumping as well as import and export. Although the environmental aspects are not explicitly stated, the ordinance provides for the importing, storage, and handling.	The Proponent should handle and manage the storage and use of hazardous substances on site so that they do not harm or compromise the site environment
Labour Act (No. 6 of 1992): <u>Ministry of Labour, Industrial Relations and Employment Creation (MLIREC)</u>	Ministry of Labour, Industrial Relations and Employment Creation is aimed at ensuring harmonious labour relations through promoting social justice, occupational health and safety and enhanced labour market services for the benefit of all Namibians. This ministry insures effective implementation of the Labour Act No. 6 of 1992.	The Proponent should ensure that the project activities do not compromise the safety and welfare of the project workers.

4.2 International Policies, Principles, Standards, Treaties and Conventions

The international policies, principles, standards, treaties, and conventions that are deemed applicable to the proposed Project and its related activities are listed in Table 4-2 below.

Table 4-2: International Policies, Principles, Standards, Treaties and Convention applicable to the project

Statute	Provisions	Project Implications
Equator Principles	<p>A financial industry benchmark for determining, assessing, and managing environmental and social risk in projects (August 2013). The Equator Principles have been developed in conjunction with the International Finance Corporation (IFC), to establish an International Standard with which companies must comply with to apply for approved funding by Equator Principles Financial Institutions (EPFIs). The Principles apply to all new project financings globally across all sectors.</p> <p>Principle 1: Review and Categorization</p> <p>Principle 2: Environmental and Social Assessment</p>	<p>These principles are an attempt to: ‘...encourage the development of socially responsible projects, which subscribe to appropriately responsible environmental management practices with a minimum negative impact on project-affected ecosystems and community-based upliftment and empowering interactions.’</p>

Statute	Provisions	Project Implications
	<p>Principle 3: Applicable Environmental and Social Standards</p> <p>Principle 4: Environmental and Social Management System and Equator Principles Action Plan</p> <p>Principle 5: Stakeholder Engagement and</p> <p>Principle 6: Grievance Mechanism</p> <p>Principle 7: Independent Review</p> <p>Principle 8: Covenants</p> <p>Principle 9: Independent Monitoring and Reporting and Principle 10: Reporting and Transparency</p>	
<p>The International Finance Corporation (IFC) Performance Standards</p>	<p>The International Finance Corporation's (IFC) Sustainability Framework articulates the Corporation's strategic commitment to sustainable development and is an integral part of IFC's approach to risk management. The Sustainability Framework comprises IFC's Policy and Performance Standards on Environmental and Social Sustainability, and IFC's Access to Information Policy. The Policy on Environmental and Social Sustainability describes IFC's commitments, roles, and responsibilities related to environmental and social sustainability. As of 28 October 2018, there are ten (10) Performance Standards (Performance Standards on Environmental and Social Sustainability) that the IFC requires a project Proponents to meet throughout the life of an investment. These standard requirements are briefly described below.</p> <p>Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts</p> <p>Performance Standard 2: Labour and Working Conditions</p>	<p>The Performance Standards are directed towards clients, providing guidance on how to identify risks and impacts, and are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations of the Client (Borrower) in relation to project-level activities. In the case of its direct investments (including project and corporate finance provided through financial intermediaries), IFC requires its clients to apply the Performance Standards to manage environmental and social risks and impacts so that development opportunities are enhanced. IFC uses the Sustainability Framework along with other strategies, policies,</p>

Statute	Provisions	Project Implications
	<p>Performance Standard 3: Resource Efficient and Pollution Prevention and Management</p> <p>Performance Standard 4: Community Health and Safety</p> <p>Performance Standard 5: Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement</p> <p>Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources</p> <p>Performance Standard 7: Indigenous Peoples/Sub-Saharan African Historically Undeserved Traditional Local Communities</p> <p>Performance Standard 8: Cultural Heritage</p> <p>Performance Standard 9: Financial Intermediaries (FIs)</p> <p>Performance Standard 10: Stakeholder Engagement and Information</p> <p>A full description of the IFC Standards can be obtained from</p> <p>http://www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-standards?cq_ck=1522164538151#ess1</p>	<p>and initiatives to direct the business activities of the Corporation to achieve its overall development objectives.</p>
<p>The United Nations Convention to Combat Desertification (UNCCD) 1992</p>	<p>Addresses land degradation in arid regions with the purpose to contribute to the conservation and sustainable use of biodiversity and the mitigation of climate change.</p> <p>The objective is to forge a global partnership to reverse and prevent desertification/land degradation and to mitigate the effects of drought in affected areas to support poverty reduction and environmental sustainability.</p>	<p>The Project activities should not be such that they contribute to desertification.</p>
<p>Convention on Biological Diversity 1992</p>	<p>Regulate or manage biological resources important for the conservation of biological</p>	<p>Removal of vegetation cover and destruction of natural</p>

Statute	Provisions	Project Implications
	<p>diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use.</p> <p>Promote the protection of ecosystems, natural habitats, and the maintenance of viable populations of species in natural surroundings</p>	habitats should be avoided and where not possible, minimised.
Stockholm Declaration on the Human Environment, Stockholm (1972)	It 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.	Protection of natural resources and prevention of any form of pollution.

Other relevant international Treaties and Protocols ratified by the Namibian Government are:

- Convention on International Trade and Endangered Species of Wild Fauna and Flora (CITES), 1973.
- Convention on Biological Diversity, 1992.

The Project activities presented under Chapter 2, their alternatives and legal framework above will be undertaken in a specific environment, i.e., physical, biological and social environmental features as presented under the next chapter.

5 ENVIRONMENTAL: BIOPHYSICAL AND SOCIAL BASELINE

The proposed activities works will be undertaken in specific environmental and social conditions. Understanding the pre-project conditions of the environment will aid in predicting the projections of environmental conditions during and after the project implementation. This knowledge also helps in identifying the sensitive environmental features that may need to be protected through the recommendations and effective implementation of mitigation measures. The summary of selected physical, biological and social baseline information about the site area is given below.

The baseline information presented below is sourced from a variety of sources including reports of studies conducted around the project area, and Otjzondjupa Region at large. Further information was obtained by the Environmental Consultant during observation on site on the 28th of March 2023.

5.1 Climate

The climatic conditions of the Otjwarongo area are described using the available data obtained from Mendelsohn *et al* (2002), World Weather Online, and Meteoblue websites (2023) as follows.

5.1.1 Rainfall

Otjwarongo receives an average annual rainfall ranging between 400 and 450mm (Mendelsohn *et al*, 2002). According to the 13-year period of rainfall data on the World Weather Online website (2022), Otjwarongo area received the highest rainfall of 436mm in between January and March 2011 followed by 293mm in 2012 as shown in Figure 5-1 (A).

The highest average rainfall for the area is 175mm in February as shown in the chart in Figure 5-1 (B).

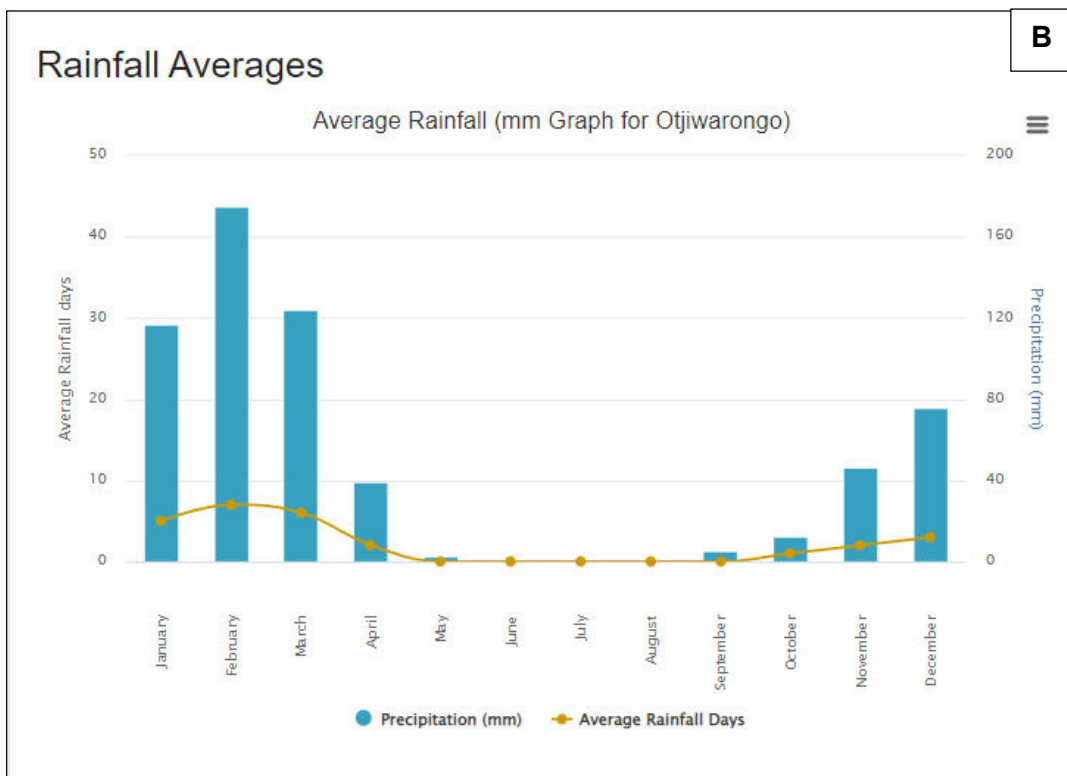
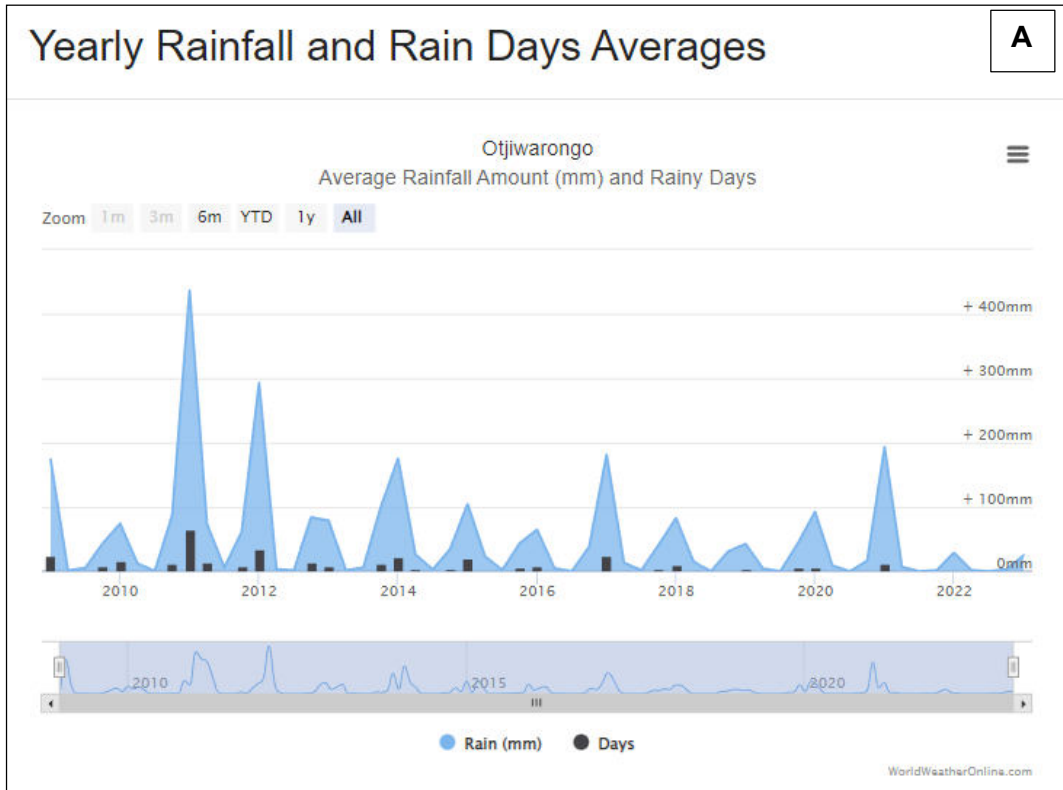


Figure 5-1: The average rainfall & rainy days (A) and monthly average rainfall (B) for Otjiwarongo (World Weather online, 2022)

5.1.2 Temperatures

Mendelsohn *et al*, (2002) indicated that Otjiwarongo area has annual temperatures between 20 and 22°C, minimum temperatures ranging between 4 and 6°C and maximum temperatures within the range of 32 to 36°C. According to World Weather Online (2022), the minimum and maximum temperatures for Otjiwarongo area are 8°C (in June), and 35°C (in October), respectively (as shown in Figure 5-2).

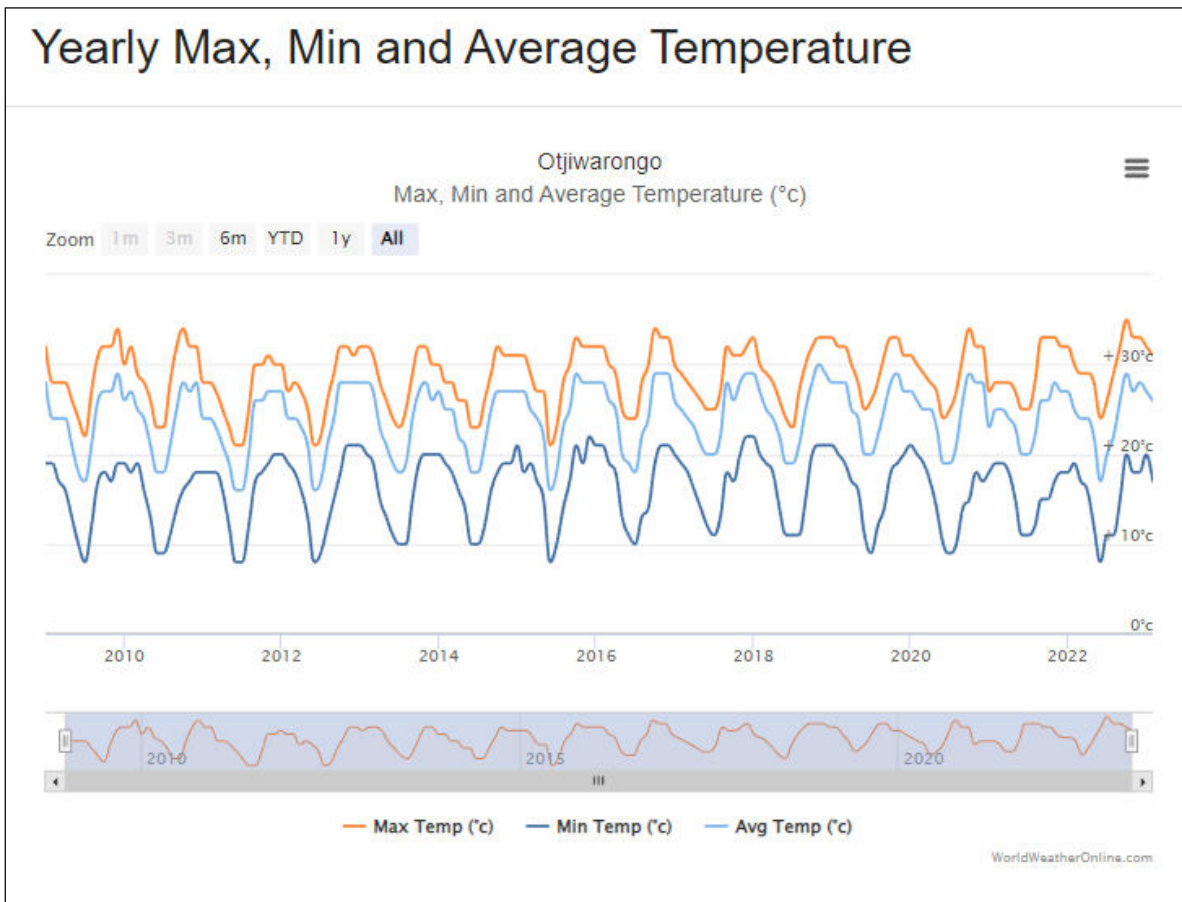


Figure 5-2: The annual maximum, minimum and average temperature for Otjiwarongo (World Weather online, 2022)

The monthly average high and low temperatures are 32°C (between October and December) and 10°C (in June and July), respectively (Figure 5-3).

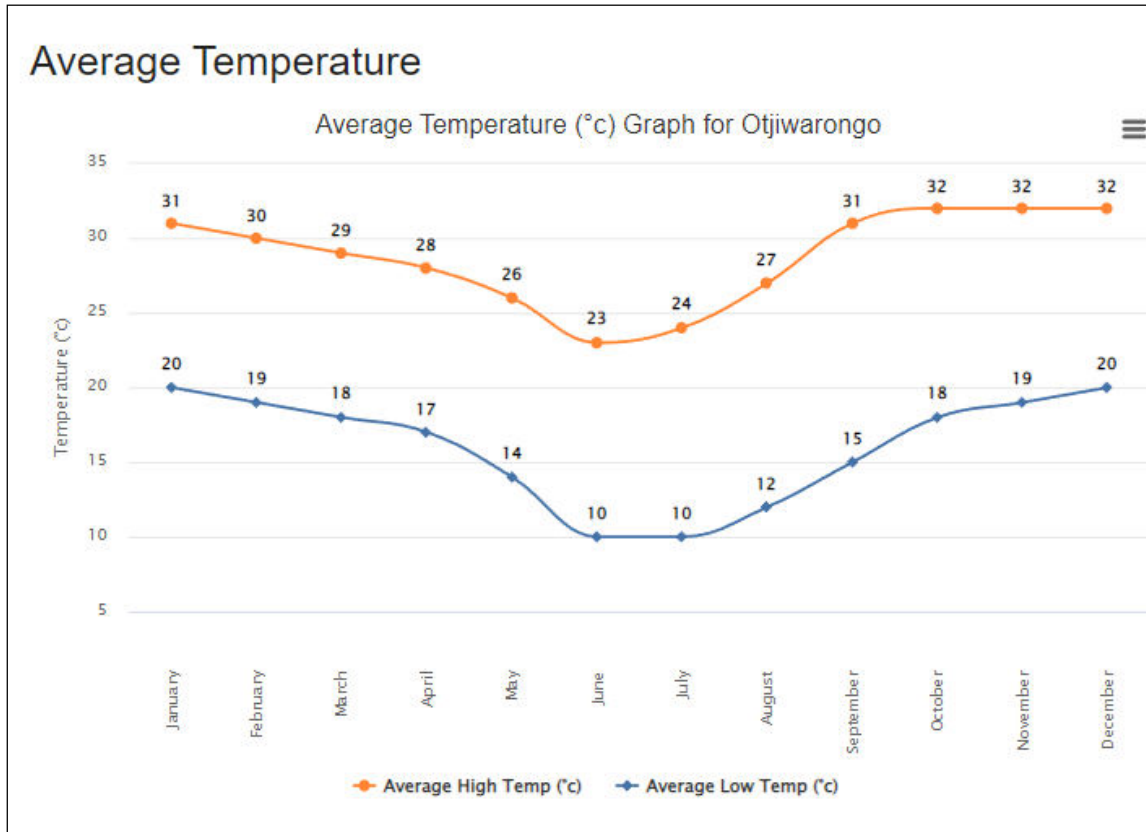


Figure 5-3: The monthly average temperatures for Otjiwarongo (World Weather online, 2022)

5.1.3 Air and Wind

Air: the current known sources of air pollution in the area are dust emissions from unpaved district and access roads within the area, and emissions from heavy vehicles on the local roads particularly in dry and windy months.

Wind: The predominant wind in Otjiwarongo area is blowing from Southwest (SW) to Northeast (NE). (Meteoblue, 2022) at a speed ranging between 12 and 19 kilometers per hour as shown in Figure 5-4 (left-hand side). The strong winds (with a speed greater than 19km/h) occur throughout the year as shown in the chart (Figure 5-4, right-hand side).

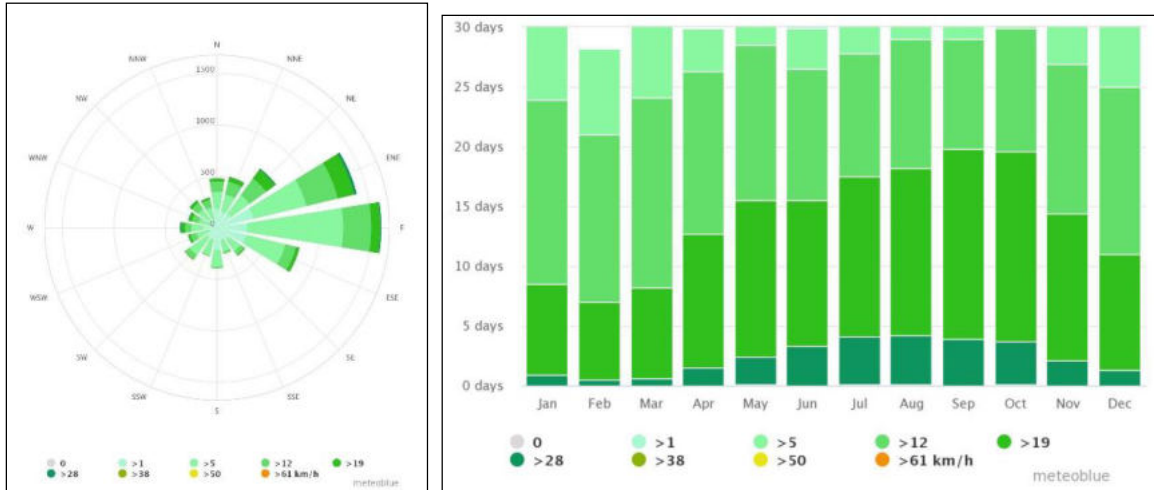


Figure 5-4: The modelled wind speed and chart for Otjiwarongo (Meteoblue, 2023)

5.2 Landscape and Topography

The project site and Otjiwarongo Town are located within the Central Western Plain Landscape - Figure 5-5 (A). This landscape consist of areas of dissection and erosional cutbacks. According to Mendelsohn *et al* (2002), this landscape stretches from the coast and this broad area of plains extends inland for about 450km in places. The plains were largely formed by erosion cutting back into higher ground and carving out the catchment areas of several major rivers such as the Khan, Omaruru, Swakop and Ugab Rivers.

The project site lies at an elevation of 1,500m as shown on the map in Figure 5-5 (B).

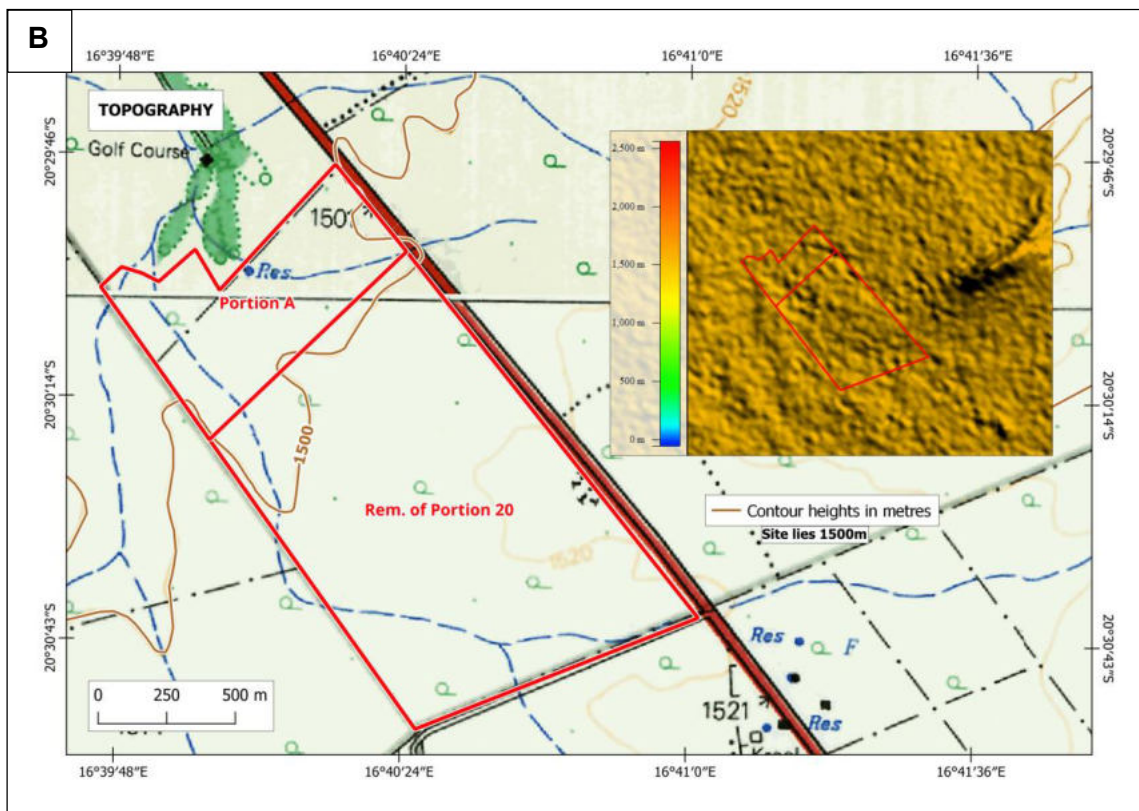
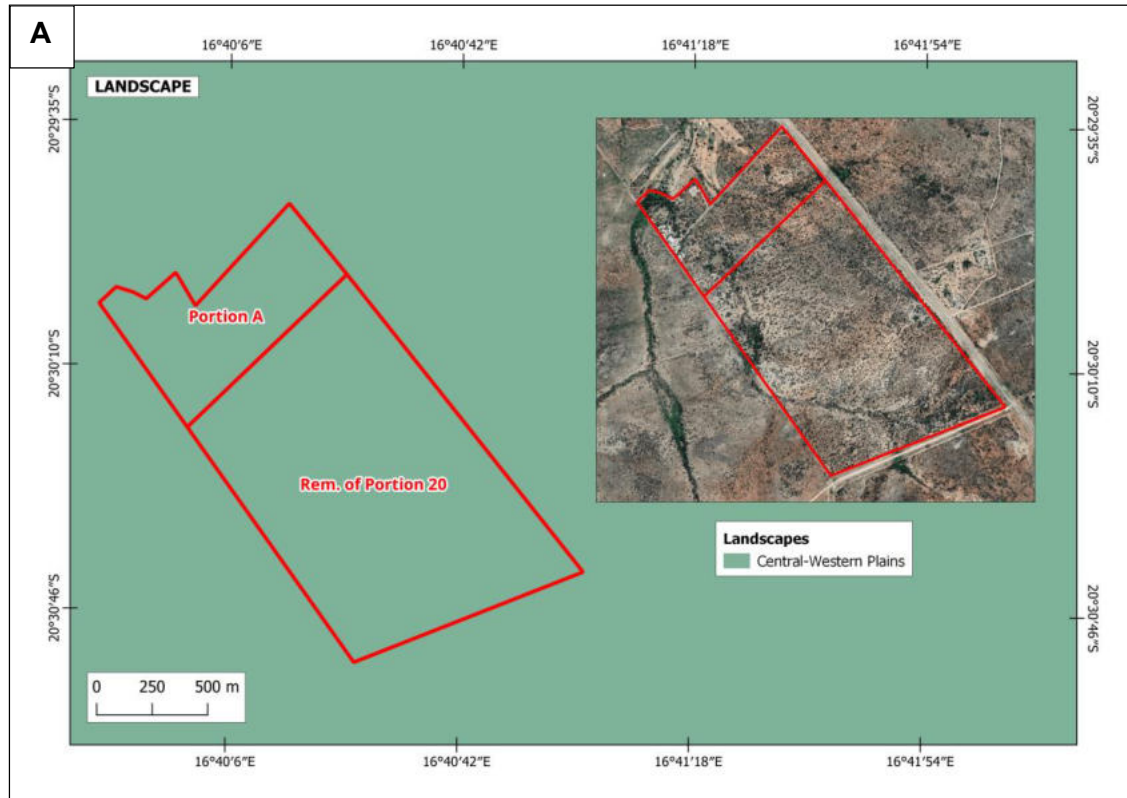


Figure 5-5: The landscape and topographic around the project site

5.3 Geology and Soils

The geology of Otjiwarongo area is characterized by Damara Supergroup and Gariiep Complex comprising of rock units such as granites, marbles, schists and quartzites. The characteristic feature of the zone is the basement zone structures, which elongates in a north-eastern direction and possesses numerous post-tectonic granite plutons. A series of regional scale antiforms and synforms which trend in a northeast direction, dominants the project area. The Damara Sequence is dominated by the Swakop and Nossib groups, with the Swakop group being the dominated type within the area of the project. The Chuos and Karibib formations of the Swakop group, creating a composition of mixture and pebbly quartzite as well as marble and quartz-biotite schist (Speiser, 2012).

The project site geology shown in Figure 5-6 indicates that the larger area of the Remainder of Portion 20 (central and north-western part) is underlain by mica schist and marble, while the lower area (southeast) is characterized by mica schists only and the small north-eastern part underlain not only by mica schist and marble, but quartzite too.

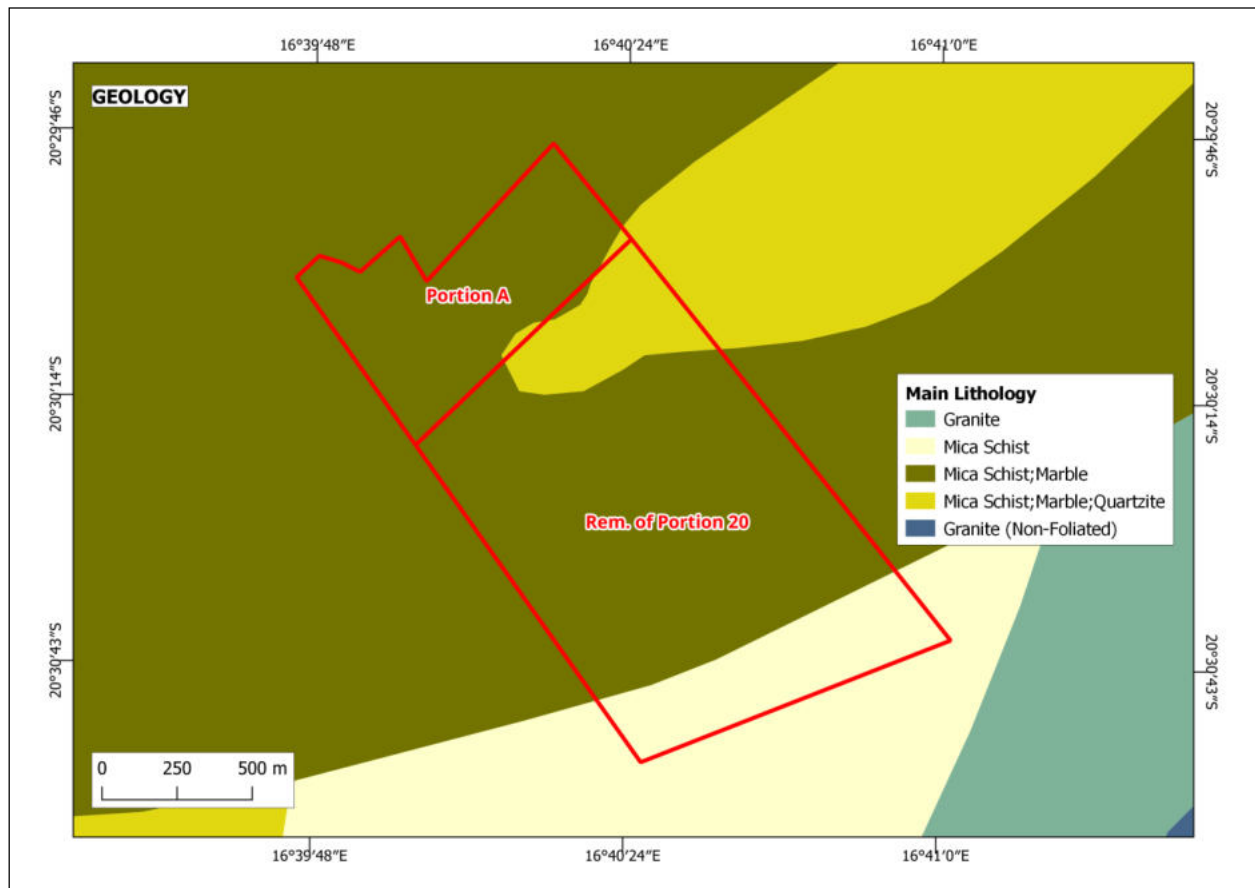


Figure 5-6: The geology of the project site and surrounding areas

The Otjozondjupa Region is overlain by the Kalahari sediments (gravel, sand and calcrete). The Otjiwarongo soils are mainly regosols. These soils are medium or fine textured soils of actively eroding landscapes, the thin layers lying directly above the rock surfaces from which they were formed. These soils never reach a depths of more than 50cm (Mendelsohn *et al.*, 2002).

In terms of local soils, the site is overlain by a thin layer of sediments (sand and gravel) and rock outcrops as shown on the soil map in Figure 5-7. The rock outcrops are not really soils but rocks only, with very thin or no soil covers at all.

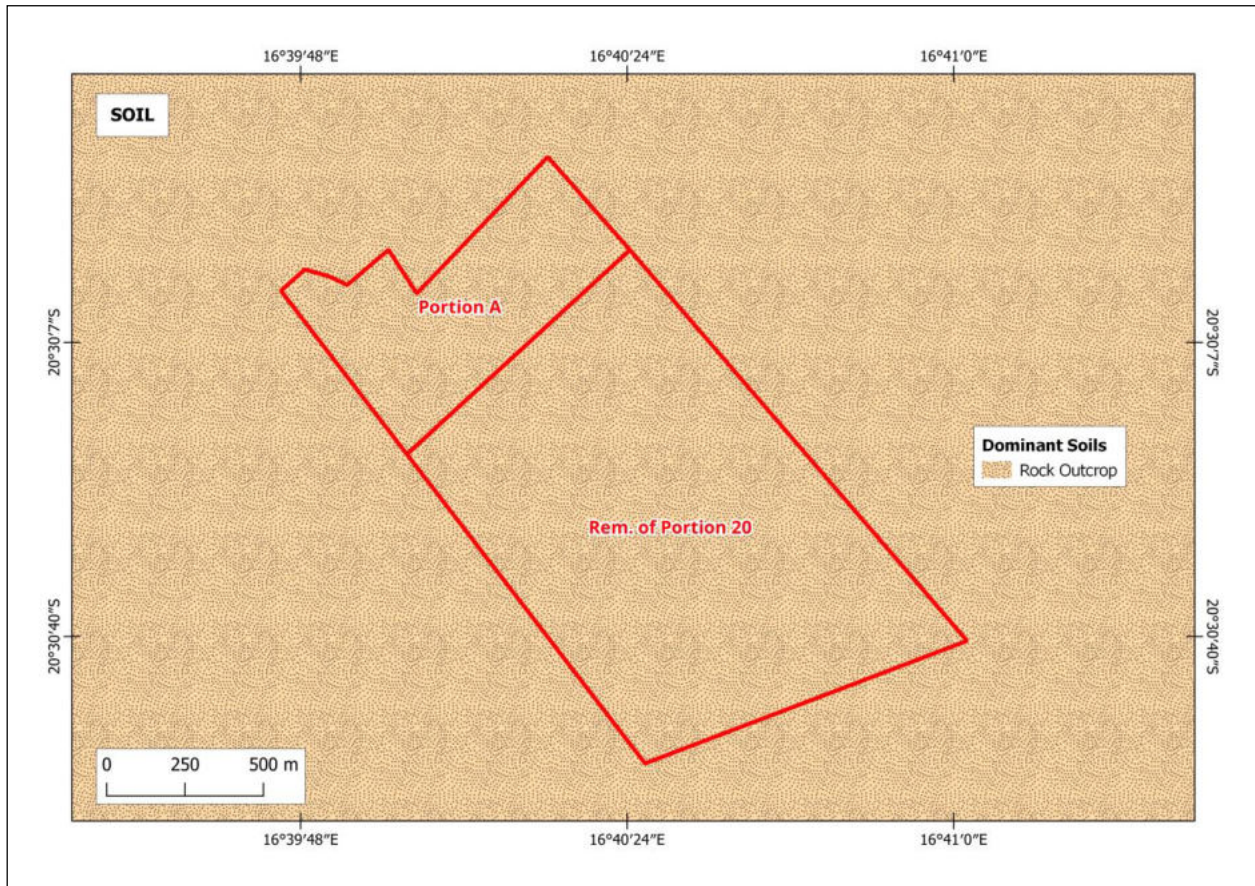


Figure 5-7: The dominant soil types overlying the project site and surroundings

In terms of local soils, the site is overlain by a thin layer of sediments (sand and gravel) with grass cover as shown in Figure 5-8.

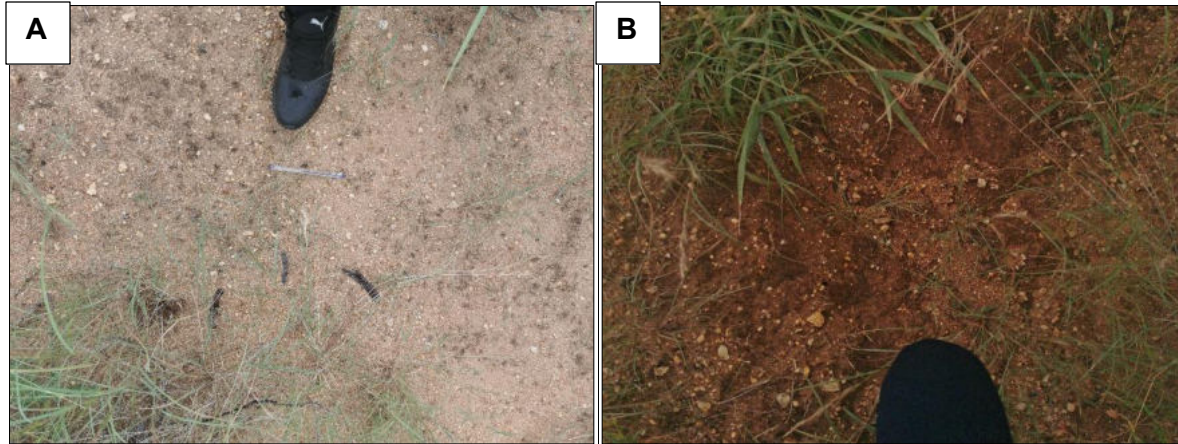


Figure 5-8: The light brown sand and gravel onsite during the site visit on 28 March 2023 (A- before it started raining and B- after it rained)

5.4 Water Resources

5.4.1 Groundwater (Hydrogeology)

Otjiwarongo is found in a region with a moderately productive aquifer types as on the national aquifer type and productivity map in Figure 5-9.

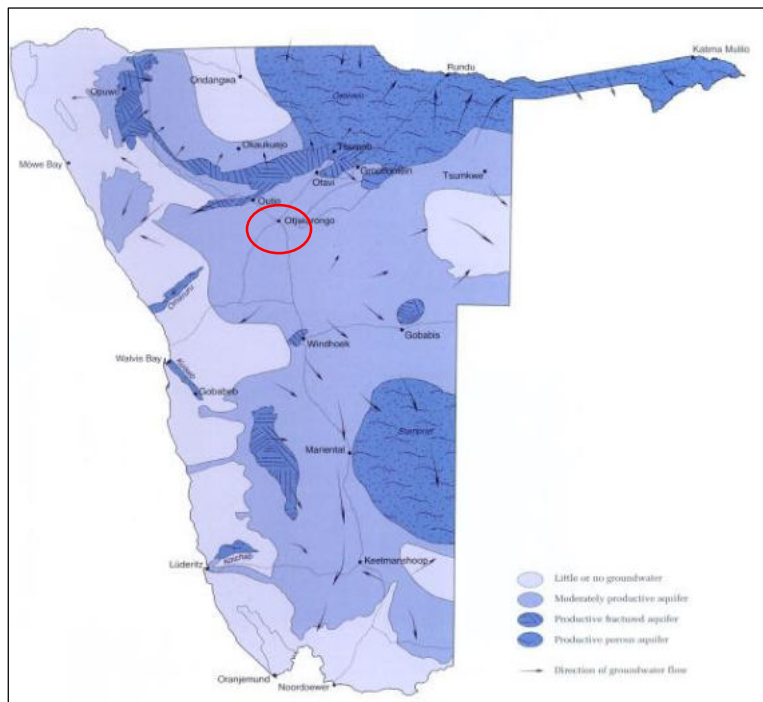


Figure 5-9: The national aquifer type and productivity conditions (Otjiwarongo area enclosed in red) (Mendelsohn et al, 2002)

In terms of local groundwater conditions, the site aquifers are characterized by rocks with little groundwater potential as depicted on the map in Figure 5-10. There is one borehole within the Remainder of Portion 20, supplying the guard house for Kyani Anti-Poaching & Security Group. According to the Kyani Group Leader indicated that the borehole has a yield of 8m³ per hour. This borehole is located at -20.511285 16.68185.

In terms of surface water, there are mainly minor ephemeral rivers on the northwestern side of the site and one river crossing the project farm/portions in a northwesterly-southerly trend as shown on the map below (Figure 5-10).

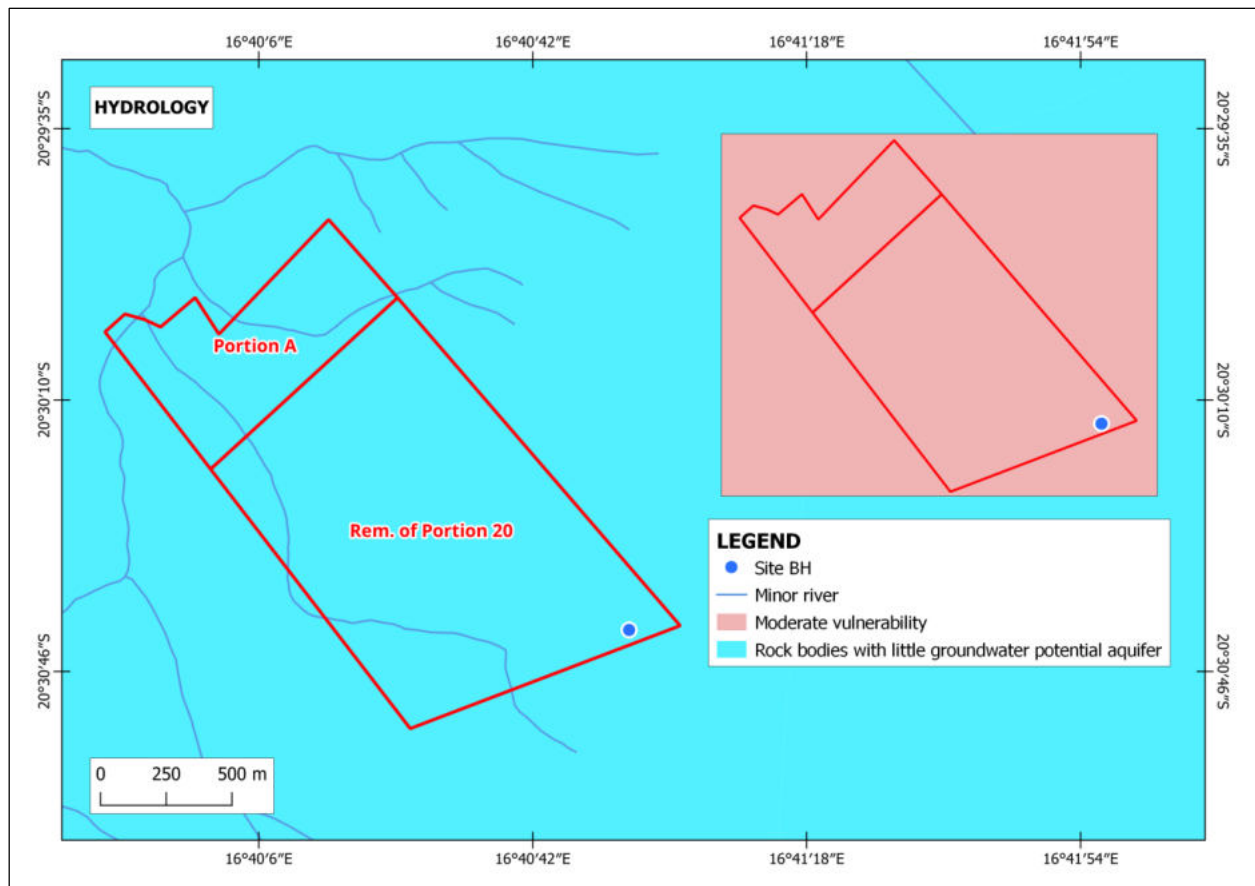


Figure 5-10: The Geohydrological (surface and groundwater) conditions of the site

5.4.1.1 Vulnerability to Pollution

Typically, the vulnerability risk to pollution is assessed based on the vulnerability of groundwater resources to pollution as per parameters on the vulnerability map is shown in Figure 5-11, with the project area enclosed in the navy blue circle.

Based on the Groundwater Resources Vulnerability Map of Namibia in Figure 5-11, the vulnerability of groundwater to pollution in the project area is moderate. This is due to the non-

fractured and non-karstified nature of the rock units in the area which would otherwise provide ready passage for pollutants into groundwater.

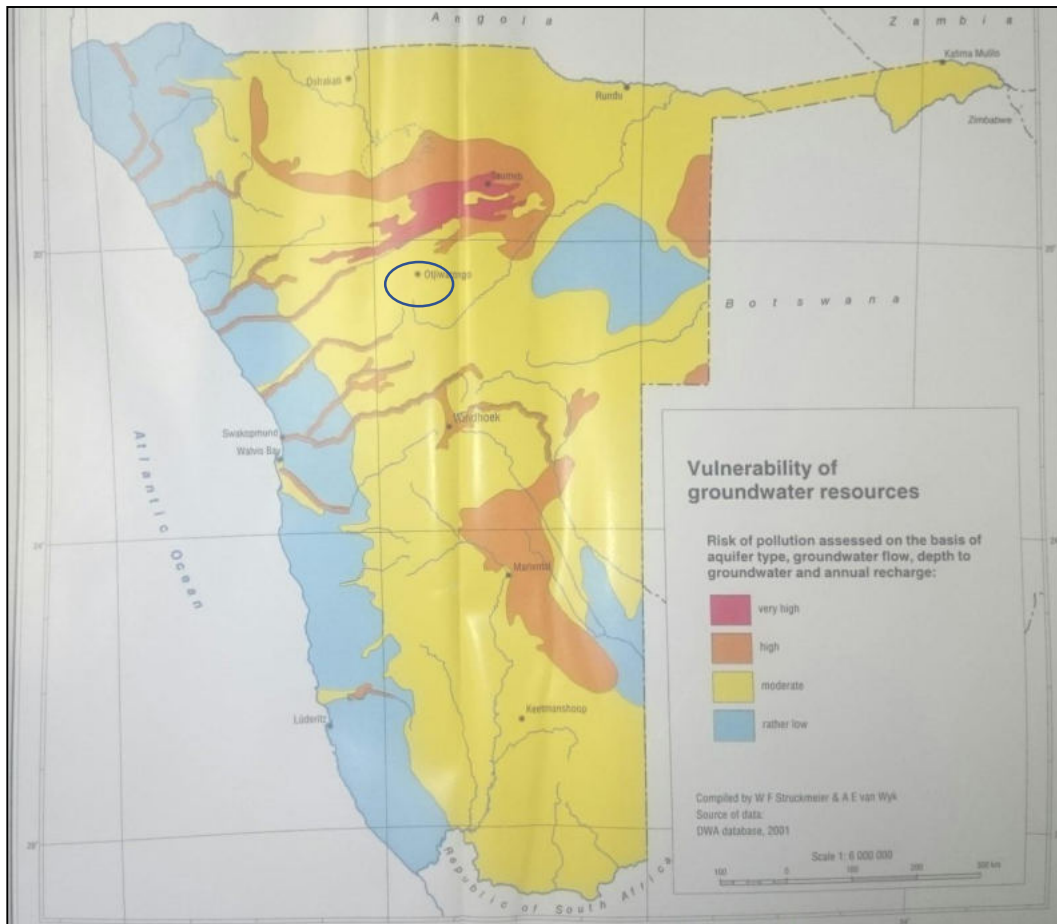


Figure 5-11: Vulnerability of groundwater resources to Pollution (source: Van Wyk et.al, 2001)

5.5 Biodiversity

5.5.1 Fauna

The faunal presence noticed onsite was some birds flying over the site. However, this does not mean that there are no other fauna such as soil organisms that may be on site. There are also some wild life animals that are said to be roaming on and around the site area from the neighboring farms such as Portion A (Otjibamba Lodge side). No animals were observed onsite during the site visit.

According to an onsite engagement with the local Anti-Poaching Group leader, some of the wildlife from Otjibamba Lodge side usually jump the fence between Portion A (Otjibamba) and Remainder

of Portion 20 (site side) to look for water at the site borehole. Among the known wildlife that is encountered by Kyani Group on the project site area are ostriches (about twenty-eight (28) species in the area), three impalas, twelve (12) nyala as well as oryx, and kudus.

5.5.2 Flora

The dominant vegetation onsite largely corresponds with the Thornbush Shrubland Biome of Mendelsohn *et al* (2002), who describe the vegetation type as Acacia-Tree-shrub Savanna – as shown in the vegetation (flora) map in Figure 5-12. The vegetation in this Biome is typical for the central part of Namibia that grows on fairly thin soil with occasional patches of bedrocks.

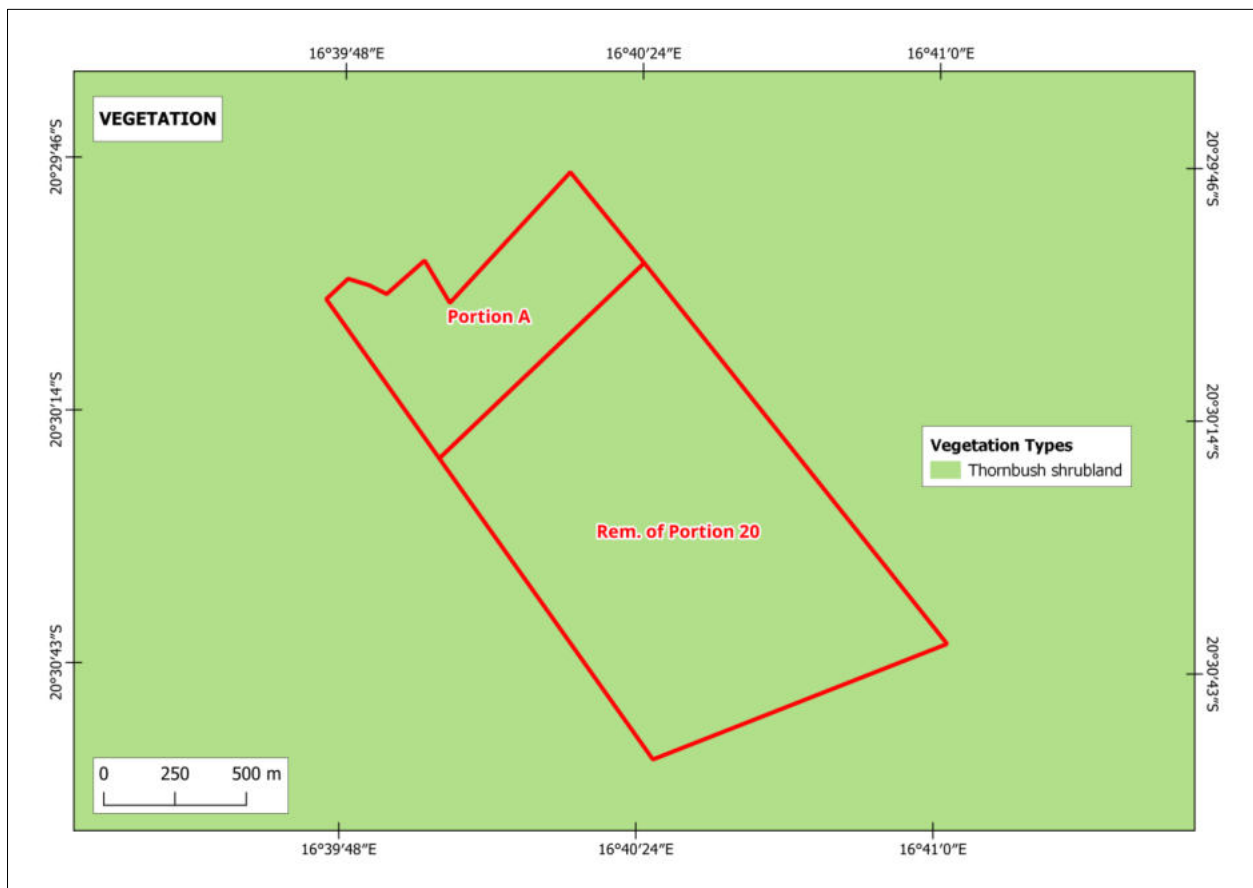


Figure 5-12: The dominant vegetation type within the area

The project site area is heavily encroached mainly by thorn trees, bushes and a lot of tall grass cover. The *Senegalia mellifera* and *Vachellia reficiens* are the dominant species, followed by *Vachellia erioloba* which appears to be common. Other observed species are *Senegalia flekii*, *Dychrostachys cinerea* and *Boscia albintrunca* which also appears common to rare. Most trees in this area grows up to 3 to 4m high. There are other trees which are occurring but very rare/ less

frequently such as *Ziziphus mucronata* and *Vachellia tortilis* while dominated by grass and predominantly bushy growth of *Grewia flavescens*. Another very rare species is the *philenoptera nelsii* and *Abizia anthelmintica*.

The habitat of the site area is rich in floral diversity and heavily encroached making it difficult to walk through. As mentioned above, the site is densely covered by thick grass cover, shrubs, young and old trees. Some of the vegetation within the site footprints will be removed to enable the erection of structures and installation of services and infrastructures. However, since some of the trees such as camelthorns and other species listed are protected species, a permit to remove the vegetation, will need to be applied for and obtained from the Forestry Office in Otjiwarongo prior to touching any vegetation onsite. The Forestry Office will also be able to advise accordingly.

The common vegetation observed onsite on the 28th of March 2023 include medium to thick grass cover, shrubs, young and large trees of the *Vachellia* species (mainly *Vachellia reficiens* – red-bark camel thorns) as shown in Figure 5-13 below.



Figure 5-13: The vegetation species (mainly *Acacia (Vachellia) reficiens*) observed onsite

5.6 Social Conditions

5.6.1 Demography

According to the 2011 National Population and Housing Census data, the Otjozondjupa Region had a total population 143,903, of which 70,001 were females and 73,902 males (Namibia Statistics Agency, 2014). The site falls within Otjiwarongo Urban Constituency which in 2011 had a population of population of 28,163.

5.7 Economic Activities

The economy of the Otjozondjupa Region depends on three components, namely; mining, farming, agriculture and tourism. The mining sector in the Otjozondjupa Region has been characterized by the establishment of large scale mines that provide employment for many Otjiwarongo residents, the likes of B2Gold, Ohorongo cement and Cheetah cement. The Region accommodates the mining of commodities such as gold, marble, semi-precious stones.

The farming industry is the one of the significant sector that contributed directly to the Gross Domestic Product (GDP).The region provide good grazing land for cattle farming as a result, farming for cattle sale commercially and communally it became a source of income for most residing residents in the region. The Otjozondjupa Region offers some of the most spectacular and popular tourist destinations as well as a variety eco-, wildlife, cultural and adventure tourism opportunities (Otjozondjupa Regional Council, 2023).

The key economic activities are in the Region are agriculture, entrepreneurship, construction, arts & crafts, small-scale service industry, hospitality, manufacturing as well as logistics and transportation (Otjozondjupa Regional Council, 2023).

5.7.1 Employment Status

According to Otjozondjupa Regional Council (2023), despite the high unemployment rate in the region, people in Otjozondjupa region are doing their best to provide for their living. Farming is the main source of income in this region, while other people operate their own businesses. Continuous developments are made in this region to attract more investors.

5.8 Land Uses

To the immediate west of the farm corner where the truck port will be established, there is anti-poaching security guard house for the Kyani Anti-Poaching and Security Group as shown in Figure 5-14. The surrounding activities include the tourism related activities on Otjibamba such as the Lodge to the west, and some farms east and south of the site where livestock as well as game farming is undertaken.



Figure 5-14: The Kyani Anti-Poaching & Security Group guard house with associated facilities and operations' vehicle

5.9 Archaeology, Cultural and Heritage Aspects

There were no visible archaeological artefacts or heritage sites noted on and in the vicinity of the proposed project area. No neighbouring I&APs raised any archaeological concerns during the public participating (consultation) process.

With that said, there is no anticipated significant impact of the proposed project activities and their associated infrastructure on archaeology and heritage. However, some of these resources may be unearthed during earthworks, in this case the necessary archaeological impact mitigation measures will be implemented.

To fulfil the requirements of the EMA and its 2012 EIA Regulations (Public Consultation: Section 21 to 24), the EDS Consultants consulted and engaged the stakeholders (interested and affected parties) as presented under the next chapter.

6 PUBLIC CONSULTATION PROCESS

Public consultation forms an important component of an Environmental Assessment (EA) process. It provides potential Interested and Affected Parties (I&APs) with an opportunity to comment on and raise any issues relevant to the project for consideration as part of the assessment process, thus assisting the Environmental Assessment Practitioner (EAP) in identifying all potential impacts and to what extent further investigations are necessary. Public consultation can also aid in the process of identifying possible mitigation measures. Public consultation for this project has been done under the EMA and its EIA Regulations.

6.1 Pre-identified and Registered Interested and Affected Parties (I&APs)

Relevant and applicable national, regional, and local authorities, local leaders, and other interested members of the public were identified. Pre-identified I&APs were contacted directly, while other parties who contacted the Consultant after project advertisement notices in the newspapers, were registered as I&APs upon their request. Newspaper advertisements of the proposed activities were placed in two widely read national newspapers in the region (*The Namibian and New Era*). The project advertisement/announcement ran for two consecutive weeks inviting members of the public to register as I&APs and submit their comments. The summary of identified and registered I&APs is listed below.

- National Ministries and Institutions: Ministry of Mines & Energy, Ministry of Agriculture, Water and Land Reform, Ministry of Urban and Rural Urban, MEFT's Forestry Office.
- Regional and local authorities (regional council and constituency offices): Otjozondjupa Regional Council, Otjiwarongo Constituency, Otjiwarongo Municipality Offices.
- Neighbouring private landowners as well as interested members of the public.

6.2 Communication with Stakeholders (Interested and Affected Parties)

Regulation 21 of the EIA Regulations details the steps to be taken during a public consultation process and these have been used in guiding this process. Communication with I&APs with regards to the proposed Project was facilitated through the following means and in this order:

6.2.1 Stakeholders (Interested and Affected Parties)' Database

A non-technical summary of the Project activities containing brief information about the proposed activities was compiled and hand delivered to the competent authorities (for ECC application and Project registration) and circulated to all pre-identified stakeholders.

6.2.2 Compilation of the Background Information Document (BID)

A non-technical summary of the project activities containing brief information about the Proposed activities was compiled and hand delivered to the competent authorities (for ECC application registration) and circulated to all pre-identified and all new registered I&APs (upon request).

6.2.3 Newspaper Advertising (Public Notification)

Project Environmental Assessment notices were published in *The Namibian Sun, and New Era* for two consecutive weeks, i.e., 02 and 09 March 2023 (Appendix C1). The newspaper adverts contained a summary of the proposed activities, activity and inviting members of the public to register as I&APs and or submit their comments/concerns for consideration in the ESA Report.

6.2.4 Consultation Meeting

A consultation meeting was scheduled with invitation sent to registered I&APs and notices placed at the Otjiwarongo Municipality Offices (Head Office and Orwetoveni Offices) and Spar Supermarket's public notice board. The meeting was held on the 28th of March 2023 in Otjiwarongo (Orwetoveni Community Hall). The meeting was scheduled for 11h00 and attended by 2 I&APs (one official from MEFT's Otjiwarongo Forestry Office and one I&AP/member of the public) - Figure 6-1.



Figure 6-1: Consultation Meeting (Engagement) in Otjiwarongo on 28 March 2023

The minutes from the consultation meeting and engagement sessions were taken and are appended to the ESA Report as Appendix C2.

- Some engagements were done onsite and in Town with other I&APs who could not make it to the consultation meeting.

6.2.5 Public Notices (Posters)

A3 size printed posters were placed in Otjiwarongo at Otjiwarongo Municipality Offices (Head Office - Figure 6-2 and Orwetoveni Offices - Figure 6-3) and Spar Supermarket's public notice board (Figure 6-4).

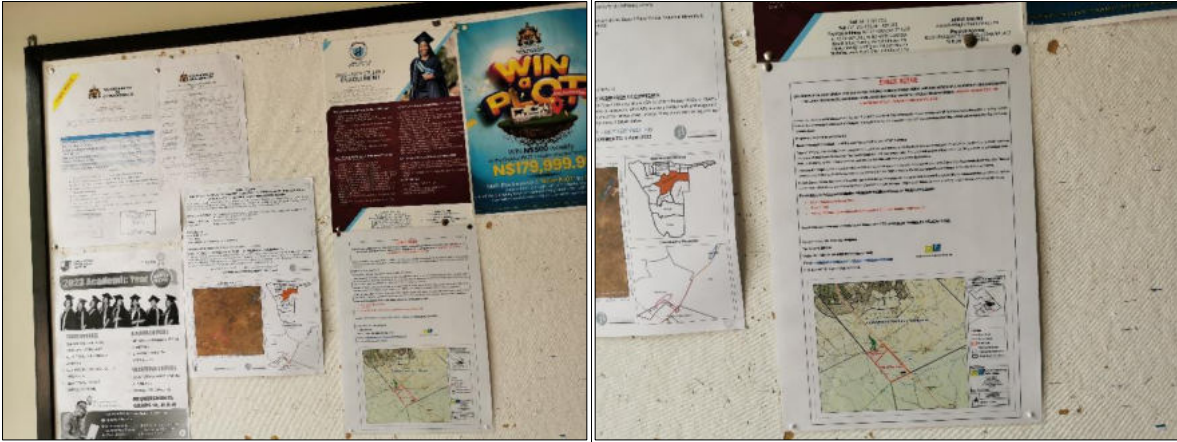


Figure 6-2: Public Notice at the Otjiwarongo Municipality Head Office

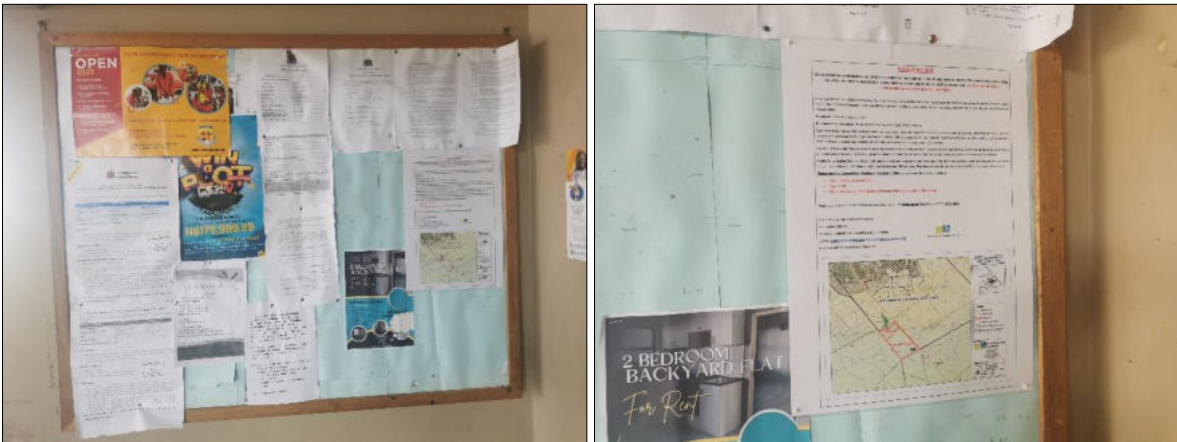


Figure 6-3: Public Notice at the Otjiwarongo Municipality's Orwetoveni Office



Figure 6-4: Public Notice at the Otjiwarongo Spar Supermarket's public notice board

6.3 Feedback from I&APs and Public Comments Period

Issues raised and comments submitted by I&APs during the consultation period were recorded and incorporated into the ESA Report and EMP. The summary of these key issues is presented in Table 6-1 below.

Table 6-1: Summary of key comments (and or issues) received during the consultation period

Aspect	Summary of the Comments, Concern / Issue
The fuel tanks in the BID despite the MME Moratorium	-The fuel tanks seem like a new fuel station, which would be detrimental to the existing market. There is an MME' Moratorium that no fuel retail license would be issued.
Concern of poaching of local wildlife	-There is a risk of increased poaching in the area owing to the project activities (cumulative)
Impact on the thick vegetation onsite (removal of protected species)	-The area is highly vegetated with shrubs and shrubs, mainly camelthorn trees. These are protected species, therefore, a permit to remove the trees that need to be removed should be obtained from the Forestry Office in Otjiwarongo.

The comments and registration request period ran from 02 March 2023 to 07 April 2023.

The key potential impacts associated with the proposed project activities are listed, described and assessed under the next chapter. Under the same chapter, the impact assessment methodology is also provided. The measures to maximize the potential positive impacts (benefits) and mitigate the negative impacts are provided in the Draft EMP.

7 IMPACT IDENTIFICATION, ASSESSMENT AND MITIGATION MEASURES

7.1 Identification of Key Impacts

The proposed activities are usually associated with different potential positive and/or negative impacts. Therefore, the impacts should be assessed, and mitigation measures provided thereto. This is done to ensure that these impacts are addressed by providing adequate mitigation measures such that an impact's significance is brought under control, while maximizing the positive impacts (benefits). The potential positive and negative impacts that have been identified from the proposed activities are listed as follow:

<u>Positive impacts</u>	<u>Potential Negative impacts</u>
<ul style="list-style-type: none"> -Socio-economic development: temporary and long-term employment opportunities as well as procurement of locally available goods and services for the project in all phases. -Boosting of local economic and regional economic development. -Provision of accommodation and associated facilities for tourists and travelers alike. -Increase the safety of the truckers and cargo (goods being transported) by parking at a designated areas at the truck port. Thus, the presence of the truck port encourages commercial drivers to park at the facility. -Provision of fuel (unleaded and diesel), engine oils, and lubricants to the site clients/travellers, including tourists. 	<ul style="list-style-type: none"> -Soil disturbance (compaction and erosion) -Loss of biodiversity through the removal of vegetation within the project footprints. -Risk of poaching of local wildlife -Pollution of soil and water resources from wastewater and effluent and hydrocarbons. -Occupational & community health and safety risks -Over-abstraction of water resources -Noise associated with project activities -Waste generation through mishandling of project related waste -Vehicular traffic safety -Dust generation and emissions (impact on local air quality).

7.2 Impact Assessment Methodology and Criteria

The Environmental Assessment process primarily ensures that potential impacts that may occur from project activity are identified and addressed with environmentally cautious approaches and legal compliance. The impact assessment method used for this project is in accordance with Namibia's Environmental Management Act (No. 7 of 2007) and its Regulations of 2012, as well as the International Finance Corporation (IFC) Performance Standards.

The identified impacts were assessed in terms of scale/extent (spatial scale), duration (temporal scale), magnitude (severity) and probability (likelihood of occurring), as presented in Table 7-1.

To enable a scientific approach to the determination of the environmental significance, a numerical value is linked to each rating scale. This methodology ensures uniformity and that potential impacts can be addressed in a standard manner so that a wide range of impacts are comparable. It is assumed that an assessment of the significance of a potential impact is a good indicator of the risk associated with such an impact. The following process will be applied to each potential impact:

- Provision of a brief explanation of the impact,
- Assessment of the pre-mitigation significance of the impact, and
- Description of recommended mitigation measures.

The recommended mitigation measures prescribed for each of the potential impacts contribute towards the attainment of environmentally sustainable operational conditions of the Project for various features of the biophysical and social environment. The following criteria were applied in this impact assessment:

Table 7-1: Criteria used for impact assessment (extent, duration, intensity and probability)

The Criteria used to assess the potential impacts				
Extent or (spatial scale) - extent is an indication of the physical and spatial scale of the impact.				
Low (1)	Low/Medium (2)	Medium (3)	Medium/High (4)	High (5)
Impact is localised within the site boundary: Site only	Impact is beyond the site boundary: Local	Impacts felt within adjacent biophysical and social environments: Regional	Impact widespread far beyond site boundary: Regional	Impact extend National or over international boundaries
Duration- Duration refers to the timeframe over which the impact is expected to occur, measured in relation to the lifetime of the project				

The Criteria used to assess the potential impacts				
Low (1)	Low/Medium (2)	Medium (3)	Medium/High (4)	High (5)
Immediate mitigating measures, immediate progress	Impact is quickly reversible, short-term impacts (0-5 years)	Reversible over time; medium term (5-15 years)	Impact is long-term	Long term; beyond closure; permanent; irreplaceable or irretrievable commitment of resources
Intensity, Magnitude / severity - Intensity refers to the degree or magnitude to which the impact alters the functioning of an element of the environment. This a qualitative type of criteria				
H-(10)	M/H-(8)	M-(6)	M/L-(4)	L-(2)
Very high deterioration, high quantity of deaths, injury of illness / total loss of habitat, total alteration of ecological processes, extinction of rare species	Substantial deterioration, death, illness or injury, loss of habitat / diversity or resource, severe alteration, or disturbance of important processes	Moderate deterioration, discomfort, partial loss of habitat / biodiversity or resource, moderate alteration	Low deterioration, slight noticeable alteration in habitat and biodiversity. Little loss in species numbers	Minor deterioration, nuisance or irritation, minor change in species / habitat / diversity or resource, no or very little quality deterioration.
Probability of occurrence - Probability describes the likelihood of the impacts occurring. This determination is based on previous experience with similar projects and/or based on professional judgment				
Low (1)	Medium/Low (2)	Medium (3)	Medium/High (4)	High (5)
Improbable; low likelihood; seldom. No known risk or vulnerability to natural or induced hazards.	Likely to occur from time to time. Low risk or vulnerability to natural or induced hazards	Possible, distinct possibility, frequent. Low to medium risk or vulnerability to natural or induced hazards.	Probable if mitigating measures are not implemented. Medium risk of vulnerability to natural or induced hazards.	Definite (regardless of preventative measures), highly likely, continuous. High risk or vulnerability to natural or induced hazards.

7.3 Impact Significance

Impact significance is determined through a synthesis of the above impact characteristics. The significance of the impact “without mitigation” is the main determinant of the nature and degree of mitigation required. As stated in the introduction to this section, for this assessment, the significance of the impact without prescribed mitigation actions is measured.

Once the above factors (Table 7-1) have been ranked for each potential impact, the impact significance of each is assessed using the following formula:

$$\text{SIGNIFICANCE POINTS (SP)} = (\text{MAGNITUDE} + \text{DURATION} + \text{SCALE}) \times \text{PROBABILITY}$$

The maximum value per potential impact is 100 significance points (SP). Potential impacts were rated as high, moderate or low significance, based on the following significance rating scale (Table 7-2).

Table 7-2: Significance rating scale

<i>Significance</i>	<i>Environmental Significance Points</i>	<i>Colour Code</i>
High (positive)	>60	H
Medium (positive)	30 to 60	M
Low (positive)	1 to 30	L
Neutral	0	N
Low (negative)	-1 to -30	L
Medium (negative)	-30 to -60	M
High (negative)	<-60	H

Positive (+) – Beneficial impact

Negative (-) – Deleterious/ adverse Impact

Neutral – Impacts are neither beneficial nor adverse

For a potential negative impact with a significance rating of high (-ve), mitigation measures are recommended to reduce the impact to a medium (-ve) or low (-ve) significance rating, provided that the impact with a medium significance rating can be sufficiently controlled with the recommended mitigation measures. To maintain a low or medium significance rating, monitoring is recommended for a period to enable the confirmation of the significance of the impact as low or medium and under control.

For a potential positive impact with a significance rating of a medium (+ve) or low (+ve), mitigation measures are recommended to enhance the impact to a high (+ve) significance rating.

This assessment is based on the three project phases namely, planning & design, site establishment & construction, operational and maintenance. The potential impacts stemming from the proposed activities are described, assessed below and mitigation measures in a form of management action plans are provided in the EMP.

7.4 Assessment of Positive Impacts

The potential positive impacts (benefits) of the proposed activities are described and assessed in Table 7-3 below.

Table 7-3: The description and assessment of positive impacts

Employment and procurement opportunities - Impact Description					
The proposed activities will improve the livelihoods of the local communities through contract (during construction) and long-term employment (for the operational phase). This will improve the unemployment status of the Otjwarongo youth, through income generation. Other opportunities will include possible procurement opportunities for the provision of different services and goods procured from different suppliers on services like local site clearing, security services, fuel delivery and accommodation related services, etc. this would empower local services providers/businesses.					
Impact Assessment					
Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	L/M - 2	L/M - 2	L/M - 4	L - 1	L - 8
Post-mitigation	M/H - 4	H - 5	M - 6	H - 5	H - 75
Regional and National Economic Development - Impact Description					
The project has potential to contribute towards broader regional and national developmental goals through the injection of capital investments, and government revenue realised through various forms of taxes such as income tax, and value added tax to the Namibia Revenue Agency, etc.					
Impact Assessment					
Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	L/M - 2	L/M - 2	L/M - 4	L - 1	L - 8
Post-mitigation	M - 3	M/H - 4	M/H - 8	M/H - 4	M - 60
Presence of low-cost accommodation (motel) and associated stores as well as shopping outlets - Impact Description					
The low-cost accommodation associated with the truck port will provide a much needed service for the travellers who would seek to rest for some hours, nights or days at low-cost accommodation facility along the B1. This would also benefit the truckers (truck drivers) who often seen parked at resting trees along the B1 (due to unavailability of truckers' accommodation). In addition to the accommodation, there would also be safe parking zones for trucks and customers' vehicles onsite. The presence of the truck port accommodation will encourage commercial drivers (truckers) to park at the facility, thus, increasing and ensuring their safety and cargo (goods being transported) by parking at a designated areas at the truck port. The truck port will also contribute to the wellness and safety of both					

the truckers, other road users, residents of Otjiwarongo and surrounding areas. This development will not only alleviate the need for such a fully-fledged facility, but also contribute to the economic benefits of the Region, directly and indirectly.

The facility will be offering services such as convenient store, retail comprising a shopping centre with a food court, shopping outlets, tourist curio and deli, grocer, and agri- business outlet.

The provision of fuel (unleaded and diesel), engine oils, and lubricants to the site clients/travellers, including tourists will also make their life easier by fuelling their vehicles while at the facility. These associated services (fully-fledged facility) will be crucial to the customers (travellers/road users, truckers, etc.) while on their route or checking out from the motel. Thus, providing a much needed convenience for the travellers while at the facility.

Impact Assessment					
Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	L/M - 2	L/M - 2	L/M - 4	L - 1	L - 8
Post-mitigation	M/H - 4	H - 5	M - 6	H - 5	H - 75

7.5 Assessment of Negative (Adverse) Impacts

The significant negative impacts potentially associated with the proposed project are described and assessed in Table 7-4 below. The mitigation measures are provided in the EMP.

Table 7-4: The description and assessment of the negative impacts

Water resources (over-abstraction of water and pollution): Impact Description					
Water resources are impacted by project developments/activities in two ways, namely through pollution (water quality) or over-abstraction (water quantity) or at times both. The abstraction of more water than can be replenished from little to no groundwater potential areas would negatively affect the local communities that depend on the same struggling source (aquifer). The groundwater resources may be significantly impacted if no measures are put in place, particularly through alternative water supply such as carting from the Municipality or a pipeline to site.					
Impact Assessment					
Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M - 3	M - 3	M - 6	M/H - 4	M - 48
Post-mitigation	L/M - 2	L/M - 2	L - 2	L/M - 2	L - 12
Impact on flora (vegetation): Impact Description					
The site vegetation would be impacted through land clearing to create access roads, setting up project equipment and infrastructures, erection of structures and installation of services. The site area is densely vegetated mainly by the protected species (camelthorns). The removal of the vegetation would impact the species, however, the impact will be limited to the site areas, where deem necessary and will be limited to the specific route and minimal. Therefore, the impact will be localized, site-specific, and therefore manageable. Regardless, a permit to remove the vegetation, where needed, should be applied for from the Forestry Office in Otjiwarongo before clearing the site.					
Impact Assessment					
Mitigation Status	Extent	Duration	Intensity	Probability	Significance

Pre-mitigation	M/H - 4	M/H - 4	M/H - 8	M/H - 4	M - 64
Post-mitigation	M/H - 4	M - 3	M - 6	M - 3	M - 39
Upon progressive mitigation implementation	L/M - 2	L/M - 2	L - 2	L/M - 2	L - 12
Occupational & Community health and safety risks associated with handling of machinery and equipment: Impact Description					
<p>Project personnel (workers) involved in the project activities may be exposed to health and safety risks. These may include mishandling of heavy machinery or vehicles. The handling and use of heavy equipment, especially during drilling and trenching as well as the presence of hydrocarbons (fuels) may result in accidental fire outbreaks. This could pose a health and safety risk to the project personnel particularly if the infrastructure and facilities are poorly designed and installed or inappropriate PPE is worn as well as lack of training on handling equipment. The health and safety risks associated with the project activities would not only impact the project workers but also local people and animals if they come in contact with poorly stored hazardous materials or machinery/equipment.</p>					
Impact Assessment					
Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M - 3	M - 3	M - 6	M/H - 4	M - 48
Post-mitigation	L/M - 2	L/M - 2	L - 2	L/M - 2	L - 12
Noise associated with project activities such as construction: Impact Description					
<p>The project activities such as earthworks and possible drilling to erect structures will create noise which can be a nuisance to the personnel and neighbouring land users. Excessive noise can be a health risk to workers on site, especially if they do not appropriate personal protective equipment (PPE) such as earplugs. The noise will be limited to the site working environment, therefore, the impact likelihood to surrounding communities is minimal to none.</p>					
Impact Assessment					
Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M - 3	M/H - 4	M - 6	M - 3	M - 39
Post-mitigation	L - 1	L - 1	L - 2	L/M - 2	L - 8
Air Quality (Dust emissions): Impact description					
<p>There is a potential impact of dust emanating from activities such as trenching/earthworks and heavy vehicles such as trucks using site access roads when transporting project equipment and supply to and from site. This may compromise the air quality in the area by dust emissions (dust levels) in the air.</p>					
Impact Assessment					
Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M - 3	M/H - 4	M - 6	M - 3	M - 39
Post-mitigation	L - 1	L - 1	L - 2	L/M - 2	L - 8
Impact on local wildlife (disturbance and poaching): Impact description					
<p>The presence and movement of the project workers and operation of project equipment and heavy vehicles would disturb wildlife on and at the immediate/neighbouring farms. There are incidents of existing illegal hunting (poaching) of local wildlife in the area (according to an engagement with one of the local I&APs). Therefore, the presence of additional people associated with the project has a potential of cumulative poaching by project related workers. This could lead to loss or number reduction of specific faunal species which also impacts tourism in the area.</p>					
Impact Assessment					
Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M - 3	M - 3	M - 6	M/H - 4	M - 48
Post-mitigation	L/M - 2	L/M - 2	L - 2	L/M - 2	L - 12
Waste generation from project activities: Impact Description					
<p>Domestic and general (solid) waste is produced on site. If the generated waste is not disposed of in a responsible way, solid waste would be scattered in the area resulting in environmental pollution (land degradation) on or around</p>					

the project site. If the solid waste such as papers and plastics are not contained and disposed of properly, these may be consumed by local animals (livestock and wild animals) which could be detrimental to their health.

Improper handling, storage and disposal of hydrocarbon products and hazardous materials at the site may lead to soil and groundwater contamination, in case of spills and leakages. Another impact on the environmental is poor handling and storage of wastewater that may not only pollute the ground surface but also the water resources when infiltration and runoff occur.

Impact Assessment					
Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	L/M - 2	L/M - 2	M - 6	M - 3	M - 30
Post-mitigation	L - 1	L - 1	L - 2	L/M - 2	L - 8

Soil and water pollution: Impact Description
 The proposed activities are associated with a variety of potential pollution sources (i.e., lubricants, fuel, and wastewater from portable toilets) that may contaminate/pollute soils and groundwater and surface water. The anticipated potential source of pollution to water resources from the project activities would be hydrocarbons (oil) from vehicles, machinery, and equipment as well as potential wastewater/effluent from related activities.

Impact Assessment					
Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M - 3	M/H - 4	M - 6	M - 3	M - 39
Post-mitigation	L - 1	L - 1	L - 2	L/M - 2	L - 8

Vehicular traffic safety: Impact Description
 In addition to the main road (B1), the district roads (D2515) are the main transportation routes for all vehicular movement in the Otjiwarongo area, providing access to the site and connecting the site/Otjiwarongo to other areas. Therefore, traffic volume will increase on these roads during construction and operational phases as the project would need a delivery of goods, supplies and services as well as movement of trucks to the facility. These service and supplies will include but not be limited to water, waste removal, procurement of project machinery, equipment, goods, etc. Depending on the project needs, trucks, medium and small vehicles will be frequenting the area to and from site. This would potentially increase the presence and movement of slow moving heavy vehicles such as trucks along these roads. The impact would not only be felt by the district road users but also the local road users. This would add additional pressure on the roads.

Impact Assessment					
Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M - 3	M/H - 4	L/M - 4	M/H - 4	M - 44
Post-mitigation	L/M - 2	L/M - 2	L - 2	L/M - 2	L - 12

Accidental fire outbreaks: Impact Description
 During construction, there is a risk of accidental fire outbreaks related to the project activities. These fire outbreaks could be from cigarettes used by smokers who are part of the workforce who do not completely put out cigarettes after use. Given the fact that the site is highly vegetated, the fire may spread over grass cover, larger vegetation and eventually spreading over the farm areas and cause damage to both vegetation and properties. During operational phase, there is a potential risk of fires owing to the storage and handling of flammables such as fuels (diesel) filling areas onsite. The fires could cause damage and not only to properties but also might compromising people' safety, health and lives.

Impact Assessment					
Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M - 3	M - 3	M - 6	M/H - 4	M - 48
Post-mitigation	L/M - 2	L/M - 2	L - 2	L/M - 2	L - 12

Social Nuisance - Job seeking leading to the influx of outsiders in Otjiwarongo: Impact Description					
<p>Like it is with any new project of that nature in an area, the proposed project activities may attract a potential influx of people from outside Otjiwarongo, and even Otjozondjupa Region in search of job opportunities. Such influxes may lead to social annoyance to the local community as well as conflicts (competition over job opportunities). This is generally considered a concern given the current unemployment rate of youth in Namibia, whereby people from other areas in different regions may learn of the project intentions and be forced to go look for work opportunities in Otjiwarongo without considering the locals. Different people may come with different ways of living to the area, which could interfere with the local norms, culture, and values. This could potentially lead to social clashes between the locals and outsiders (out-of-area job seekers).</p> <p>The influx of people into the project area may also lead to sexual relations between these out-of-area workers and the locals. This would lead to the spreading of sexual transmitted diseases (i.e., HIV/AIDS) when engaging in unprotected sexual intercourse. Pre-implementation of mitigation measures, the impact is rated as of slightly high significance. However, upon mitigation (post-mitigation), the impact significance can be reduced from high to medium and eventually to low.</p>					
Impact Assessment					
Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M/H - 4	M/H - 4	M/H - 8	M/H - 4	M - 64
Post-mitigation	M/H - 4	M - 3	M - 6	M - 3	M - 39
Upon progressive mitigation implementation	L - 1	L - 1	L - 2	L/M - 2	L - 8
<p><i>Continued implementation of the mitigation measures and monitoring over time will bring the significance down to 'low' rating.</i></p>					

8 RECOMMENDATIONS AND CONCLUSIONS

The potential impacts that are anticipated from the proposed project activities were identified, described, and assessed. For the significant adverse (negative) impacts with medium rating, appropriate management and mitigation measures were recommended for implementation by the Proponent, and the aim is to maximize the positive impacts of the proposed activities.

The comments provided and received during the consultation period were noted and used to form a basis for the impact assessment in this EIA Report and to develop the Draft EMP.

The potential impacts that are anticipated from the proposed project activities were identified, described, and assessed. For the significant adverse (negative) impacts with medium rating, appropriate management and mitigation measures were recommended for implementation by the Proponent, and the aim is to maximize the positive impacts of the proposed activities.

Some but few comments and concerns were made and raised on the proposed project activities, respectively. These comments were noted down and incorporated into the ESA Report and Draft EMP.

The assessment is therefore deemed sufficient and concludes that no further detailed assessments are required to the ECC application.

8.1 Recommendations

The EDS Consultants are confident that the potential negative impacts associated with the proposed project activities can be managed and mitigated by the effective implementation of the recommended management and mitigation measures, thus maximizing the benefits (positive impacts) of the project. The impacts' significance would also be improved by more effort and commitment towards monitoring the implementation of these measures.

The following impacts have been assessed and the assessment found that the negative impacts have low, slightly medium and medium ratings. Therefore, the effective and monitoring of the implementation of the recommended management and mitigation measures provided in the EMP can reduce the significance from "slightly medium" to "low", and "medium" to "low", and where possible, bring the significance to negligible over time.

The assessment of positive impacts provided the following concluding ratings (post-mitigation):

- Socio-economic development: temporary and long-term employment opportunities as well as procurement of locally available goods and services for the project in all phases - *high positive significance*.
- Boosting of local, regional and national economic development – *medium to high positive significance*.
- Provision of accommodation and associated facilities for tourists and travelers alike - *high positive significance*.
- Increasing the safety of the truckers and cargo (goods being transported) by parking at a designated areas at the truck port - *high positive significance*.
- Provision of fuel (unleaded and diesel), engine oils, and lubricants to the project clients / travellers - *high positive significance*.

The conclusions on the ratings of negative impacts (pre- and post-mitigation) are as follows:

- Soil disturbance: *medium (pre-mitigation) and low (post-mitigation)*.
- Loss of biodiversity through the removal of vegetation within the project footprints: *slightly high (pre-mitigation), medium and low (post-mitigation)*. The continued implementation of the mitigation measures and monitoring over time will bring the significance down to 'low' rating.
- Disturbance and risk of poaching of local wildlife – *medium (pre-mitigation) and low (post-mitigation)*.
- Pollution of soil and water resources from wastewater and effluent and hydrocarbons.
- Occupational and community health and safety risks: – *medium (pre-mitigation) and low (post-mitigation)*.
- Over-abstraction of water resources: *medium (pre-mitigation) and low (post-mitigation)*.
- Noise associated with project activities: *slightly medium (pre-mitigation) and low (post-mitigation)*.
- Waste generation through mishandling of project related waste: *medium (pre-mitigation) and low (post-mitigation)*.
- Accidental fire outbreaks: *slightly high to medium (pre-mitigation) and low (post-mitigation)*.

- Vehicular traffic safety: *medium (pre-mitigation) and low (post-mitigation)*.
- Dust generation and emissions (impact on local air quality): *medium (pre-mitigation) and low (post-mitigation)*.

It is therefore, recommended that the proposed truck port and associated infrastructure (facilities) be granted an environmental clearance, on the emphasis that:

- All the management and mitigation measures provided herein and in the Draft EMP are effectively and progressively implemented and monitored with annual external auditing.
- All required permits, licenses and approvals / consents for the proposed activities should be obtained as required. These include permits and licenses for groundwater abstraction, permit to remove protected species (vegetation), onsite fuel storage and ensuring compliance with these specific legal requirements.
- Asterisk Investment and their personnel or contractors comply with the legal requirements governing their project and its associated activities and ensure that project permits and or approvals required to undertake specific site activities are obtained and renewed as stipulated by the issuing authorities.
- The disturbed areas by the project activities are rehabilitated, as far as practicable, to their pre-disturbance state.
- Environmental Compliance monitoring reports should be compiled and submitted to the DEAF every 6 months from the date of ECC issuance (as required).

8.2 Conclusions

In conclusion, with that being done, it is crucial for the Proponent and their workers and contractors to effectively implement the recommended management and mitigation measures to protect both the biophysical and social environment throughout the project duration. The aim is to promote environmental and social sustainability while ensuring a harmonious existence and proposed activities in the community and surrounding environment.

9 LIST OF REFERENCES

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APPENDIX A: DRAFT ENVIRONMENTAL MANAGEMENT PLAN (EMP)