

Draft Environmental Management Plan (EMP)

The Proposed Construction and Operation of Iputu Private Academy in Iputu yAmungenga Village of Etayi Constituency in the Omusati Region, Namibia



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Draft as prescribed by Regulation 8(j) of the EIA Regulations (2012) – It is a living document that can be updated throughout the project cycle, as deemed necessary

Proponent:

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DOCUMENT INFORMATION

Title: Draft Environmental Management Plan (EMP) for the Proposed Construction and Operation of liputu Private Academy at liputu yAmungenga Village of Etayi Constituency in the Omusati Region, Namibia

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EAP* - Environmental Assessment Practitioner

SERJA' STATEMENT OF INDEPENDENCE

As the Appointed Environmental Consultant to undertake the EIA Study and prepare this Draft Environmental Management Plan (EMP) for proposed construction and operation of liputu Private Academy and associated activities in liputu yAmungenga Village, Serja Hydrogeo-Environmental Consultants cc declare that we:

- do not have, to our knowledge, any information or relationship with Ms. Martha Namufohamba (the Project Proponent) or the Ministry of Environment, Forestry and Tourism (MEFT)'s Department of Environmental Affairs and Forestry (DEAF) that may reasonably have potential of influencing the outcome of this EIA Study (EMP) and the subsequent Environmental Clearance Certificate applied for.
- have knowledge of and experience in conducting environmental assessments, the Environmental Management Act (EMA) No. 7 of 2007 and its 2012 Environmental Impact Assessment (EIA) Regulation as well as other relevant national and international legislation, guidelines, policies, and standards that govern the proposed project as presented herein.
- have performed work related to the ECC application in an objective manner, even if the results in views and findings or some of these may not be favorable to the Proponent.
- have complied with the EMA and other relevant regulations, guidelines and other applicable laws as listed in this document.
- declare that we do not have and will not have any involvement or financial interest in the undertaking/implementation of the proposed project, other than remuneration (professional fees) for work performed to conduct the EIA and apply for the ECC in terms of the EIA Regulations' requirement as an Environmental Assessment Practitioner (EAP).

Disclaimer: Serja Hydrogeo-Environmental Consultants will not be held responsible for any omissions and inconsistencies that may result from information that was not available at the time this document was prepared and submitted for evaluation.



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Signature:

Fredrika N. Shagama: Principal Environmental Assessment Practitioner & Hydrogeologist

Date: 29 April 2024

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List of Abbreviations

BID:	Background Information Document
DEAF:	Department of Environmental Affairs and Forestry
EA:	Environmental Assessment
EAP:	Environmental Assessment Practitioner
EAPAN:	Environmental Assessment Professionals of Namibia
ECC:	Environmental Clearance Certificate
EIA:	Environmental Impact Assessment
EMA:	Environmental Management Act
EMP:	Environmental Management Plan
GG:	Government Gazette
GN:	Government Notice
I&APs:	Interested and Affected Parties
MEAC:	Ministry of Education, Arts and Culture
MEFT:	Ministry of Environment, Forestry and Tourism
NHC:	National Heritage Council (NHC) of Namibia
NORED:	Northern Namibia's Regional Electricity Distributor
PPE:	Personal Protective Equipment
Reg, S:	Regulation, Section

1 INTRODUCTION

1.1 Project Background and Location

Education in Namibia is mandatory between the ages of 6 and 16, thus, primary education is crucial for children development. There are approximately more than 1,900 schools in Namibia of which 100 are privately owned. Due to an increase in population and demand for quality education, thus, Martha Namufohamba (hereto referred to as the Proponent) proposes to construct and operate a school (Iputu Private Academy, the School) in Iputu yAmungenga Village of the Etayi Constituency in the Omusati Region.

The proposed School will cater for about 200 learners from Grade zero (0) to Grade seven (7), and will have boarding (hostel) facilities. The proposed private School will be situated about 20km northeast of Oshikuku Town alongside the Oshakati – Omungwelume tarred road, at coordinates -17.627881, 15.622871, as shown on the locality map in Figure 1-1. The School and its associated facilities will cover an area of about 2,193m².



Figure 1-1: Locality map of Iputu Private Academy (School) in the Omusati Region

1.2 Purpose of the Draft Environmental Management Plan (EMP)

The Draft EMP is developed in accordance with Regulation 8(j) of the EIA Regulations (2012), that it should be included as part of the Environmental Assessment (EA) Scoping report. A ‘**Management Plan**’ is defined as:

“...a plan that describes how activities that may have significant environments effects on the environment are to be mitigated, controlled and monitored.”

An EMP is one of the most important outputs of the EA process as it synthesizes all the proposed management & mitigation and monitoring actions, set to a timeline and with specific assigned responsibilities. It provides a link between the impacts identified in the EA process and the required mitigation measures to be implemented to manage project impacts. It is important to note that an EMP is a statutory document and a person who contravenes the provisions of this EMP may face imprisonment and/or a fine. This EMP is a living document and can be amended to adapt to address project changes and/or environmental conditions and feedback from compliance monitoring.

The EMP is therefore aimed at guiding environmental management throughout the three main phases of the proposed project activities, namely: planning and design, construction, operational and maintenance and decommissioning phases:

- **Planning and Design phase** – Preparation of all the administrative and technical requirements needed for the construction works. The planning would entail obtaining the necessary permitting and authorization from relevant national and local stakeholders, facilitating the recruitment and procurement processes, etc.
- **Site preparation and construction phase** – The stage during which the site is prepared for construction activities and actual construction works are carried out onsite (erection of the project structures and associated installation of supporting services and infrastructure).
- **Operation and maintenance phase** – this is the phase when the School is operational with boarding students residing onsite, and educational activities occurring onsite. Maintenance of the School and its associated facilities will be done internally or outsourced to an external specialist contractor, when needed.

2 BRIEF DESCRIPTION OF THE PROPOSED PROJECT ACTIVITIES

The project phases anticipated for the proposed School establishment are presented herein.

2.1 Planning and Design

The Proponent ensured that the site is legally acquired from the relevant authorities (Iiputu Headman and Uukwambi Traditional Authority), and the land has been serviced and appropriately prepared for construction. While a professional and final preliminary site layout is being prepared, a hand-drawn site layout is as shown in Figure 2-1 below.

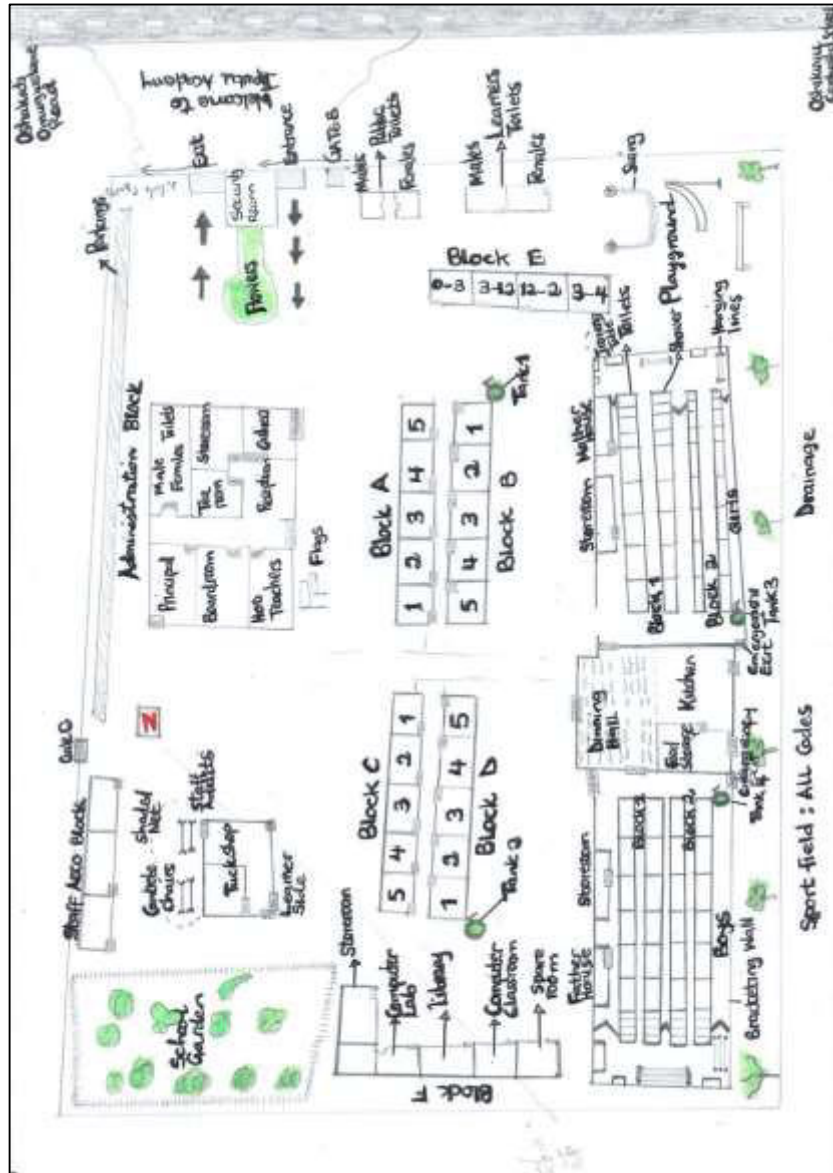


Figure 2-1: The preliminary hand-drawn layout of the Iiputu Private School

2.2 Construction

This phase involves the site preparation and construction of the proposed School and its associated infrastructures by a construction contractor appointed by the Proponent. The School will need classrooms, administration buildings, kitchen and dining hall, boarding facilities, and ablution facilities. Construction will also include the installation of services such as water supply, electricity supply and sewerage systems.

Construction works are anticipated to take about 6 to 9 months and will be limited to weekdays and normal working hours (between 08am and 5pm).

The proposed site for the School is not a Greenfield but a site that was previously used as a road construction campsite, during the construction of one of the local roads in the liputu area. Therefore, through the construction contractor for the School, the Proponent will prepare the site to be suitable for the establishment of the School.

2.2.1 Required Resources and Services

The following services and infrastructure as provided below will be required for the project activities:

- Human resources and accommodation: During the construction and operation of the proposed School, more than 40 people will be employed. This will include administrative, caretaking, and educational staff.
Construction works Accommodation: During the construction of the proposed project, workers will be accommodated on-site in tented camps.
- Boarding Students Accommodation: This is where the learners will be accommodated. The hostel will comprise two (2) blocks for girls and boys, and each block will have fifteen (15) units.
- Dining Hall: This hall will provide fully-fledged dining facilities where meals of the learners will be served.
- Working Space (Administration and Control): Temporary site offices will be erected on-site (subject to the approval of the custodian/authority).
- School Administration Offices: This is where the school reception, principal and teachers' offices will be based. Additionally, there will be a boardroom for staff to conduct their meetings.
- Class room: This is where the teaching and learning activities will be taking place. There will be five (5) blocks with 24 units. (The Units will comprise of classrooms, library, computer lab, storerooms, science lab and art and design room)
- Water supply: Water for construction will be sourced from the tap (NamWater). About 7,000 litres of water per month will be required for the construction. Therefore, arrangements will be made with NamWater to supply the School.

- Water supply for operations: approximately 8,500 litres of water will be used per day. This includes cooking, bathing and other general uses.
- Power supply: during construction, power will be supplied by generators, whereas during the operational phase, the School will be connected to the power grid (transformer) by NORED at the side.
An application for the connection to the School will be made by the Proponent to reach an agreement with the NORED office at Oshikuku Town, Omusati Region.
- Fuel Supply (machinery and equipment): it is anticipated that there will fuel onsite during construction works to refuel project machinery and vehicles.
- Waste management: the different waste will be handled as follows:
 - Sewage: A portable toilet will be provided onsite during construction and emptied according to manufacturers' instructions. For the operational phase, there will be flushing toilets to be used by the learners, staff and visitors.
 - General and domestic waste: Solid waste containers will be made available onsite for waste storage during construction and operational phases. The waste will be disposed of at the nearest approved solid waste management facility in the Region.
 - Hazardous waste: All vehicles, machinery and fuel consuming equipment onsite will be provided with drip trays to capture potential fuel spills and waste oils.
The waste fuel/oils will be carefully stored in a standardized container to be disposed of at the nearest approved hazardous waste management facility.
- Health and Safety: Adequate and appropriate Personal Protective Equipment (PPE) will be provided to all construction personnel while on and working onsite. At minimum, two fully-equipped first aid kits will be readily available onsite and 2 to 3 personnel trained on administering first aid.
- Potential Accidental Fire Outbreaks: A minimum of two well-serviced fire extinguishers will be readily available onsite during construction and each building will be required to have a fire extinguisher for the operational phase.

2.3 Operations and Maintenance

This is the phase when the School is operational with boarding students residing onsite, and educational activities occurring onsite. Maintenance of the School and its associated facilities will be done internally or outsourced to an external specialist contractor, as necessary.

3 LEGAL FRAMEWORK: PERMITTING AND LICENSES

The Proponent has the responsibility to ensure that the proposed project activities as well as the EA process conform to the principles of the EMA and must ensure that employees act in accordance with such principles. Table 3-1 below lists the requirements of an EMP as stipulated by Section 8 (e) of the EIA Regulations, primarily on specific approvals and permits that may be required for the project activities.

Table 3-1: List of legal requirements and permits for the proposed School establishment and related activities

Legislation / Policy / Guideline	Relevant Provisions	Implications for the project activities
Environmental Management Act (No. 7 of 2007) and 2012 Environmental Impact Assessment (EIA) Regulations: regulated by Ministry of Environment, Forestry and Tourism (MEFT)	The EMA has stipulated requirements to complete the required documentation to obtain an Environmental Clearance Certificate (ECC) for permission to undertake certain listed activities.	The ECC should be renewed every 3 years (counting from the date of issuance) at least 3 months before expiry date. The contact details at the Department of Environmental Affairs and Forestry (DEAF), MEFT. Office of the Environmental Commissioner: Mr. Timoteus Mufeti Tel: +264 61 284 2701
Traditional Authority Act No. 25 of 2000 regulated by Ministry of Works and Transport (Roads Authority of Namibia)	The Act also stipulates that Traditional Authorities (TAs) should ensure that natural resources are used on a sustainable basis that conserves the ecosystem. The implications of this Act are that TAs must be fully involved in the planning of land use and development for their area. It is the responsibility of the TA's customary leadership, the Chiefs, to exercise control on behalf of the state and the residents in their designated area.	The proposed private school is located in the communal land under the Uukwambi Traditional Authority (TA). Therefore, they should be consulted throughout the Project. Chief lipumbu H. lipumbu: Uukwambi Traditional Authority Mr. Frans lipinge: Headman of liputu yAmungenga

Legislation / Policy / Guideline	Relevant Provisions	Implications for the project activities
		Tel: +264 (0) 61 225 313
Basic Education Act, 2020 regulated by Ministry of Education, Arts, and Culture (MEAC)	Promote and regulate free and compulsory basic education.	A person may not provide basic education at a private school unless the school is registered in terms of section 76.
Forestry Act 12 of 2001, Amended Act 13 of 2005 regulated by Ministry of Environment, Forestry and Tourism (MEFT)	Prohibits the removal of any vegetation within 100 m from a watercourse (Forestry Act S22 (1)). The Act prohibits the removal of and transport of various protected plant species. Should there be protected plant species, which are known to occur within the project site, these are required to be removed and a permit should be obtained from the nearest Forestry office (MEFT)) prior to removing them.	A permit should be obtained from the nearest Forestry office (MEFT)) prior to removing them. Contact: Ms. Justina Shilulu: Senior Forester at Outapi Forestry District Office Tel: +264 65 251 028
Water Resources Management Act 11 of 2013 and its 2023 Regulations, Namibia Water Corporation Act 12 of 1997 regulated by the Ministry of Agriculture, Water and Land Reform (MAWLR)	1956 is still in force: 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)). Provides for control and protection of groundwater (S66 (1), (d (ii)). Liability of clean-up costs after closure/abandonment of an activity (S3 (l)). (l)). The NamWater Act provides for a more efficient use and control of water resources; and to provide for incidental matters.	The protection (both quality and quantity/abstraction) of water resources should be a priority. The Proponent must apply with NamWater for water connection The NamWater Oshikuku satellite office or Contact Dr. Kaliki Kambanda. Oshakati Area Office Tel : +264 (0) 65 71 4200

Legislation / Policy / Guideline	Relevant Provisions	Implications for the project activities
National Heritage Act No. 27 of 2004 regulated by Ministry of Education, Arts, and Culture (MEAC)	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.	The necessary management measures and related permitting requirements must be taken. This done by informing the National Heritage Council of Namibia. A Chance Finds Procedure provided to the Draft EMP should be implemented upon discovery of archaeological and heritage resources. Ms. Erica Ndalikokule (Director) – National Heritage Council of Namibia Tel: +264 (0) 61 301 903
The National Monuments Act (No. 28 of 1969) regulated by Ministry of Education, Arts, and Culture (MEAC)	The Act enables the proclamation of national monuments and protects archaeological sites.	
Road Traffic and Transport Act, No. 22 of 1999 regulated by Ministry of Works and Transport (Roads Authority of Namibia)	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.	Mitigation measures should be provided for, if the roads and traffic impact cannot be avoided. Mr. Eugene de Paauw (Roads Authority – Specialist Road Legislation) Tel.: +264 (0) 61 284 7027
Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001) Regulated under the Ministry of Mine and Energy (MME)	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”	There will be a jelly can kept on site with fuel. Therefore, the Proponent should ensure that the Permit to store fuel is obtained from the Petroleum Affairs at the MME. Care must be exercised when handling hydrocarbon products onsite. Mr. Carlo Mcleod: Acting Director of Petroleum Affairs Tel: +264 (0) 61 284 8291

4 EMP IMPLEMENTATION RESPONSIBILITIES

The Proponent is ultimately responsible for the implementation of the EMP. However, the Proponent may delegate this responsibility or part of it at any time, as they deem necessary. The roles and responsibilities of all delegates/parties involved in the effective implementation of this EMP are set in Table 4-1.

Table 4-1: The EMP implementation responsibilities for the construction and operation of the School

Role	Responsibilities
Martha Namufohamba and their Partner (if any)	<ul style="list-style-type: none"> -Managing the implementation of this EMP and updating and maintaining it when necessary. -Management and monitoring of individuals and/ or equipment on-site in terms of compliance with this EMP and issuing fines for contravening EMP provisions.
Project / Site Manager	<p>This individual will be responsible to ensure that the project activities are completed on time. The Manager’s duties and responsibilities will include:</p> <ul style="list-style-type: none"> -Ensure that relevant commitments contained in the EMP are adhered to. -Ensure relevant staff is trained in procedures entailed in their duties. -Maintain records of all relevant environmental documentation for the project. -Reviewing the EMP annually and amending the document when necessary. -Issuing fines to individuals who may be in breach of the EMP provision and if necessary, removing such individuals from the site. -Cooperate with all relevant interested and affected parties/stakeholders. -Development and management of schedules for daily activities
Construction Contractor	<p>The Contractors’ representative or site supervisors (as appropriate) will be required to:</p> <ul style="list-style-type: none"> -Ensure that the relevant commitments contained in the EMP Action Plans are adhered to. -Compile relevant procedures and method statements for approval by the applicable phase site manager prior to initiation of project activities on the sites. -Ensure that all relevant staff are trained in procedures.

Role	Responsibilities
	<p>-Maintain records of all relevant environmental documentation applicable to their work</p>
<p>Health, Safety, & Environmental (HSE) Officer</p>	<p>The Proponent may assign the responsibility of ensuring EMP compliance throughout the project life cycle to a designated member of staff or external qualified and experienced person, referred to in this EMP as the HSE Officer. This officer will have the following responsibilities:</p> <ul style="list-style-type: none"> -Management and facilitation of communication between the Proponent and Interested and Affected Parties (I&APs)/stakeholders regarding this EMP. -Conducting site inspections of all areas with respect to the implementation of this EMP (monitor and audit its implementation). -Advising the Proponent or Project/Site Manager on the removal of person(s) and/or equipment not complying with the provisions of this EMP. -Making recommendations to the Manager with respect to the issuing of fines for contraventions of the EMP. -Undertaking an annual review of the EMP and recommending additions and/or changes to this document. -Ensuring that the construction an operations onsite are conducted in accordance with the International System organization (ISO) standard 14001: 2015.

5 ENVIRONMENTAL MANAGEMENT MEASURES

5.1 Key identified Potential negative Impacts

The key potential negative impacts identified, described, and assessed in the Scoping Report and for which the management measures (action plans) have been provided are listed below:

Potential Positive impacts:	Potential negative (adverse) impacts (continued)
-Increase in the number of local schools in the area	-Potential Damage to Landscape: Litter, erosion, fires
-Access to quality education	-Disturbance to livestock during construction
-Creation of jobs during the construction and operational phases	-Potential impact on vegetation (removal) to enable construction activities
-Local and regional economic growth through quality and access to private primary education	-Potential noise during construction
	-Air pollution owing to dust generation and fumes/emissions (during construction)
	-Impact on archaeological and cultural heritage resources, in the case of any archaeological and heritage finds onsite (inadvertent unearthing during site preparation/excavations).
Potential negative (adverse) impacts:	-Potential health and safety risks associated with mishandling of construction equipment.
-Physical land / soil disturbance resulting in compaction and erosion (during construction)	
-Environmental pollution (littering)	
-Potential soil and water resources pollution during construction	

5.2 Environmental Management and Mitigation Measures

The management actions are aimed at avoiding the above-listed potential negative impacts, where possible, and where it is impossible to avoid these impacts, measures are provided to reduce the impacts' significance.

The Management action plans (management and mitigation measures) recommended for the potential impacts rated in the EIA Study were based on the following project stages (phases):

- Planning and Design Phase (Table 5-1),
- Construction Phase (Table 5-2), and
- Operational and maintenance Phase (

- Table 5-3).

Table 5-1: Planning and design Phase management and mitigation measures

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
EMP implementation and training	Lack of EMP awareness and implications thereof	<p>-A Comprehensive Health and Safety Plan for the project activities should be compiled.</p> <p>-An EMP non-compliance penalty system should be implemented on site.</p> <p>-The Proponent should appoint an HSE Officer to be responsible for managing the EMP implementation and monitoring.</p>	-All required EMP implementation Plans, and Systems are compiled and in place.	-Proponent	Pre-construction
Communication between the Proponent and community	Lack of communication between community and Proponent	<p>The land custodians and community should be notified on time of the commencement of the project activities and any expected delays in the progress.</p> <p>-Continual engagement with the Traditional Authority, community and where necessary, with neighbours should be maintained.</p>	-Ongoing Consultation throughout the project, when and as required.	-Proponent	Pre-construction and throughout the project life cycle (as needed)
Employment and procurement	Empowerment of local businesses and their staff	-Where possible, preference for construction works should be given to a local contractor (in Omusati Region near the site). Out-of-area procurement of construction contractor should be justified, for example by the unavailability of local businesses.	-The contractor is Omusati Region based, otherwise, justification for an out-of-region contractor is provided	-Proponent	Pre-construction (during planning and design)
Authorizations	Lack of Permits/ Licenses	<p>-All the required agreements and licenses or permits should be applied for and obtained</p> <p>The permits, agreements referred to herein include:</p> <p><i>-Environmental Clearance Certificate (ECC)</i></p> <p><i>-Power supply agreement with NORED (using the existing procedures)</i></p> <p><i>-Construction and maintenance solid waste disposal authorization from the nearest local authority.</i></p>	-Applicable permits and licenses to obtained from relevant authorities and kept on site for records keeping and future inspections	-Proponent	Pre-construction (during planning and design) and throughout the project life cycle (based on the stage of permit requirement)

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Visual (sense of place) and aesthetics	Visual nuisance	-Consider all the necessary options (colour, and overall design) to improve the aesthetic of the School and associated infrastructures to blend in with the surrounding for a better appeal to neighbouring community to the site.	-The parameters of the School structures are considered and designed to reduce the visual impact	-Proponent's Planning & Design Engineer	Pre-construction (during planning and design)
Construction works	Construction schedules and notifications	-A construction schedule should be prepared and shared with the Traditional Authority, Constituency Office, and direct community so that they are aware of the construction vehicle movement and presence onsite. -Construction activities should be done during weekdays only i.e., Mondays to Fridays and during working hours (8:00am - 5:00pm).	-Timely submission of notifications to authorities, and neighbours -Clear posters erected onsite facing the industrial street road	-Proponent -Construction contractor	Pre-construction (during planning and design)

Table 5-2: Construction Phase management and mitigation measures

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
EMP implementation and training	Lack of EMP awareness and implications thereof	-EMP trainings should be provided to all workers onsite. -All site personnel should be aware of necessary health, safety, and environmental considerations applicable to their respective work. -The implementation of this EMP should be monitored. The site should be inspected, and a compliance audit done throughout <u>the project activities, monthly and bi-annually for overall EMP implementation.</u> -EMP non-compliance penalty system should be implemented.	-Records of EMP compliance/monitoring conducted bi-annually -The ECC is renewed every 3 years -Records of EMP training conducted.	-Site Manager -Construction Contractor -HSE Officer	Throughout the construction phase, and when deemed necessary (for certain activities such as ECC renewal)
Soils	Physical soil / land disturbance and loss of topsoil	-Stockpiled topsoil and excavated materials should be used to backfill the excavated and disturbed site post-construction.	-No proliferation of informal vehicle tracks created by project activities. -No new erosion gullies.	-Site Manager -Construction Contractor	Throughout the construction phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
		<ul style="list-style-type: none"> -Soils that are not within the intended footprints of the site footprint should be left undisturbed and soil conservation implemented as far as possible. -Project vehicles/machinery should stick to access route provided and not to unnecessarily create further tracks onsite by driving everywhere causing soil compaction and erosion. 	<ul style="list-style-type: none"> -No signs of soil compaction -No disturbance to unmarked areas onsite. 	-HSE Officer	
Biodiversity	Loss of Fauna and Flora	<ul style="list-style-type: none"> -Avoid unnecessary removal and or disturbance of site vegetation. -Plants (vegetation) found on the site, but not in the actual footprint should not be disturbed, and therefore, should be avoided. -Avoid leaving equipment or machinery leaning on vegetation. -Environmental awareness on biodiversity preservation (both plants and even small animals encountered onsite) should be provided to the workers and contractors during EMP induction. 	<ul style="list-style-type: none"> -No complaints of unauthorised vegetation removal associated with project personnel. -No intentional disturbance and destruction of site vegetation -Barricading tape (to indicate working areas) 	<ul style="list-style-type: none"> -Site Manager -Construction contractor -HSE Officer 	Throughout the construction phase
Vehicular traffic safety	Presence of heavy vehicles onsite construction	<ul style="list-style-type: none"> -Vehicles drivers and equipment operators should be in possession of valid and appropriate driving licenses and adhere to the road safety rules. -Drivers should drive slowly (40km/hour or less) while onsite. -Project vehicles should be in a road worthy condition and serviced regularly to avoid accidents owing to mechanical faults. -Vehicle drivers should only make use of designated site access roads provided and as agreed. -Vehicle drivers should not be allowed to operate vehicles while under the influence of alcohol. -Project vehicles should be parked within the boundary or demarcated areas for such purpose onsite and not in the street (public road). 	<ul style="list-style-type: none"> -No complaints from members of the public regarding vehicular traffic issues related to the project activities. -All personnel operating the project vehicles and machinery are appropriately licensed and possession of valid driving licenses. -Demarcated areas for parking, offloading, and loading zones onsite. 	<ul style="list-style-type: none"> -Site Manager -Construction contractor 	Throughout the construction phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
		-Deliveries from and to site should be done optimally during weekdays and between the hours of 8am and 5pm.			
Occupational and locals health and safety	General health and safety associated with project activities during construction and maintenance	<p>-During induction, personnel should be provided with an awareness training of the risks of mishandling equipment and materials on site.</p> <p>-Appropriate and clearly written warning signage should be placed onsite, where visible.</p> <p>-Projected loads should be securely fastened to vehicles to avoid falling and injuring people.</p> <p>-Heavy vehicle and equipment should be properly secured to prevent any harm or injury to both project personnel and community members moving within the premises.</p> <p>-When working on site, employees should be properly equipped with personal protective equipment (PPE) such as coveralls, masks, gloves, safety boots, earplugs, safety glasses, and hard hats.</p> <p>-Personnel should not be allowed to consume alcohol or other intoxicants prior to and during working hours as this may lead to mishandling of equipment resulting in health and safety risks.</p>	<p>-Comprehensive health and safety plan for the activities is compiled.</p> <p>-Availability of fully-furnished first aid kits</p> <p>-Trained worker to administer first aid</p>	<p>-Site Manager</p> <p>-Construction contractor</p> <p>-HSE Officer</p>	Throughout the construction phase
	Accidental fire outbreak	<p>-Portable and serviced fire extinguishers should be availed onsite.</p> <p>-No open fires should be created by project personnel onsite.</p> <p>-Make provision for smoking areas for crew members who smoke. This is to ensure that the cigarettes' fire is completely put out to and disposed of in allocated bins onsite</p>	<p>-No wildfires recorded (due to presence of project personnel)</p> <p>-Fire extinguishers (1 per vehicle)</p>	<p>-Site Manager</p> <p>-Construction contractor</p> <p>-HSE Officer</p>	Throughout the construction phase
Littering and waste management	Environmental Pollution	-Dispose of waste in a responsible manner and not to litter.	-No visible litter around the project area	-Site Manager	Throughout the construction phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
		<ul style="list-style-type: none"> -After each daily works, ensure that there are no wastes left onsite or scattered within site premises. -All domestic and general operational waste produced daily should be contained onsite until such that time it will be transported to designated waste sites. -No waste may be buried or burned on site or anywhere else. -The site should be equipped with separate waste bins for solid and general/domestic waste. -A penalty system for irresponsible disposal of waste onsite and anywhere in the area should be implemented. 	<ul style="list-style-type: none"> -Provision of sufficient waste storage containers -Waste management awareness -Waste disposal permits to the nearest local authority -Environmental, Health and Safety Statements and Policy 	<ul style="list-style-type: none"> -Construction contractor -HSE Officer 	
	Sewage generated by construction workers	<ul style="list-style-type: none"> -Provide sufficient toilet facilities for workers while onsite (portable chemical toilet, if possible). -No open defecation is allowed on and around the site. Use provided portable toilets for the construction workers. -Sewage waste should be stored as per the portable chemical toilets supplied on site and regularly disposed of at the nearest treatment facility. -Sufficient flushing toilets for the School should be constructed in preparation of the operational phase. 	<ul style="list-style-type: none"> -Adequate toilet and basic ablution facilities on site -Chemical toilets Sewage removal operator -Waste treatment agents/chemicals. 	<ul style="list-style-type: none"> -Construction contractor -HSE Officer 	Throughout the construction phase
Soil and water resources pollution	Soils and water pollution by improper disposal of waste	<ul style="list-style-type: none"> -Oil and wastewater spill control preventive measures should be in place on site to management soil contamination, thus preventing and minimizing the contamination from reaching water bodies. Some of the soil control preventive measures that can be implemented include: -Spill control preventive measures should be in place on site to management soil contamination, thus preventing and or minimizing the contamination from reaching any nearby water bodies. 	<ul style="list-style-type: none"> No complaints of pollutants on the soils and eventually in the water due to development activities No visible oil spills on the ground or pollution spots. -Waste containers provided at work sites and campsites 	<ul style="list-style-type: none"> -Construction contractor -HSE Officer 	Throughout the construction phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
		<ul style="list-style-type: none"> -All project employees should be sensitized about the impacts of soil pollution and advised to follow appropriate fuel delivery and handling procedures. -The Proponent should develop and prepare countermeasures to contain, clean up, and mitigate the effects of an oil spill. This includes keeping spill response procedures and a well-stocked cache of supplies easily accessible. -Ensure employees receive basic Spill Prevention, Control, and Countermeasure (SPCC) Plan training and mentor new workers as they get hired. -Project machines and equipment should be equipped with drip trays to contain possible oil spills when operated on site. -Polluted soils should be removed immediately and put in a designate waste type container for later disposal. -Drip trays must be readily available and monitored to ensure that accidental fuel spills along the tank trailer path/route around the sites are cleaned on time (soon after the spill has happened). -Polluted soil must be collected and transported away from the site to an approved and appropriately classified hazardous waste treatment facility. -Washing of equipment contaminated hydrocarbons, as well as the washing and servicing of vehicles should take place at a dedicated area, where contaminants are prevented from contaminating soil or water resources. -Sewerage waste should be treated and/or disposed of at a suitable wastewater treatment facility. 			
Land use	Land use conflict (between the School plans and community)	-Construction activities should not in any way hinder the existing land uses but rather promote co-existence throughout the project operations while respecting other land uses.	<p>Land access and use permits/authorizations.</p> <p>Compliance with conditions set within operational</p>	-Construction contractor	Throughout the construction phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
		-The Proponent should ensure that their activities comply with the conditions set by the competent, regulatory, and affected authorities such that the proposed construction activities do not severely impact the different existing activities around the site.	permits by relevant and affected authorities. Little to no complaints of significant interference from the neighbouring land users	-HSE Officer	
Disturbance to livestock (fauna) during construction	Destruction of floral species and habitats for animals	_Any unnecessary removal or destruction of grazing land due to construction activities should be avoided. -Vegetation found in the vicinity of the site but not on the site must not be removed, in order to preserve biodiversity and grazing land. _Environmental awareness on the importance of preservation of grazing land for local livestock should be provided to construction workers	-Limited cleared sites -Limited access tracks	Grievance logbook	Throughout the phases
Air Quality	Air pollution owing to dust generation and fumes / emissions	-Vehicles should not drive at a speed more than 40 km/h to avoid dust generation around the area. -Dust masks, eye protective glasses and other respiratory personal protective equipment (PPE) such as face masks should be provided to the workers on site, where they are exposed to dust. -Excavating equipment should be regularly maintained to ensure excavation efficiency and so to reduce dust generation and harmful gaseous emissions.	No complaints from the public about vehicle emissions and dust generation. Visible efforts to curb dust	-Construction contractor -HSE Officer	Throughout the construction phase
Noise	Noise from construction activities	-Noise from vehicles and equipment on sites should be reduced to acceptable levels. -Construction hours should be between 08AM and 5PM to prevent noise generated by equipment and movement of heavy vehicles onsite.	-No complaints of noise associated with the project	-Construction contractor -HSE Officer	Throughout the construction phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
		-When operating excavators and other noise generating machinery onsite, workers should be equipped with personal protective equipment (PPE) such as earplugs to reduce exposure to excessive noise.			
Archaeology and heritage	Accidental disturbance of archaeological or heritage objects	<p>-If any archaeological materials or human burials or skeletal remains are uncovered during construction earthworks, the work in the immediate area should be halted, the finds would need to be reported to the NHC may require inspection by an Archaeologist – refer to the Appendix 1.</p> <p>-Avoid direct damaging of archaeological or heritage such that may be encountered during excavations.</p> <p>-All accidental discoveries shall be reported immediately to an archaeologist/heritage practitioner so that an investigation and evaluation of the finds can be made, acting upon advice the HSE Officer will advise the necessary actions to be taken;</p> <p>-The construction Contractor should adhere to the provisions of Section 55 of the National Heritage Act in the event significant heritage and cultural features are discovered in the course of developmental works.</p>	<p>-Preservation of all artefacts and objects that are discovered onsite</p> <p>-Salvage equipment</p> <p>-Flag tapes</p> <p>-GPS (site marking)</p>	<p>-Site Manager</p> <p>-Construction contractor</p> <p>-HSE Officer</p>	As and when required, i.e., prior to site set up, and during construction.

Table 5-3: Operations and Maintenance Phase management and mitigation measures

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
EMP implementation and training	Lack of EMP awareness and implications thereof	<p>-EMP trainings should be provided to workers onsite.</p> <p>-All site personnel should be aware of necessary health, safety, and environmental considerations applicable to their respective work.</p> <p>-The implementation of this EMP should be monitored.</p>	<p>-Records of EMP compliance/monitoring conducted bi-annually</p> <p>-The ECC is renewed every 3 years</p> <p>-Records of EMP training conducted.</p>	<p>-Site / Maintenance Manager</p> <p>-HSE Officer</p>	Throughout the maintenance phase, and when deemed necessary (for certain activities)

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
		<p>The site should be inspected, and a compliance audit <u>bi-annually for overall EMP implementation.</u></p> <p>-EMP non-compliance penalty system should be implemented.</p>			such as ECC renewal)
Vehicular traffic safety	Presence of heavy vehicles onsite construction	<p>-Vehicles drivers and equipment operators should be in possession of valid and appropriate driving licenses and adhere to the road safety rules.</p> <p>-Drivers should drive slowly (40km/hour or less) while onsite.</p> <p>-Vehicle drivers should not be allowed to operate vehicles while under the influence of alcohol.</p> <p>-Project vehicles should be parked inside the site premises and not in the street (public road).</p> <p>-Deliveries from and to site should be done optimally during weekdays and between the hours of 8am and 5pm.</p>	<p>-No complaints from members of the public regarding vehicular traffic issues related to the project activities.</p> <p>-All personnel operating the project vehicles and machinery are appropriately licensed and possession of valid driving licenses.</p>	-Site / Maintenance Manager	Throughout the maintenance phase
Occupational and locals health and safety	General health and safety associated with project activities	<p>-Projected loads should be securely fastened to vehicles to avoid falling and injuring people.</p> <p>-Heavy vehicle and equipment should be properly secured to prevent any harm or injury to project personnel and community members moving near the site.</p> <p>-Personnel should be properly equipped with personal protective equipment (PPE) such as coveralls, masks, gloves, safety boots, earplugs, safety glasses, and hard hats.</p> <p>-Personnel should not be allowed to consume alcohol or other intoxicants prior to and during working hours as this may lead to mishandling of equipment resulting in health and safety risks.</p>	<p>-Comprehensive health and safety plan for the activities is compiled.</p> <p>-Availability of fully-furnished first aid kit in the maintenance vehicle</p> <p>-Trained worker to administer first aid</p>	-Site / Maintenance Manager	Throughout the maintenance phase
	Accidental fire outbreak	<p>-Portable and serviced fire extinguishers should be availed onsite and availed for every building within the School.</p> <p>-No open fires should be created by project personnel onsite.</p>	-Fire extinguishers (1 per vehicle)	-Site / Maintenance Manager	Throughout the maintenance phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Littering and waste management	Environmental Pollution	<ul style="list-style-type: none"> -Dispose of waste in a responsible manner and not to litter. -After each daily works, ensure that there are no wastes left onsite or scattered within site premises. -All domestic and general operational waste produced daily should be contained onsite until such that time it will be transported to designated waste sites. -No waste may be buried or burned on site or anywhere else. -The site should be equipped with separate waste bins for solid and general/domestic waste. -A penalty system for irresponsible disposal of waste onsite and anywhere in the area should be implemented. 	<ul style="list-style-type: none"> -No visible litter around the project area -Provision of sufficient waste storage containers -Waste management awareness -Waste disposal permits to the nearest local authority -Environmental, Health and Safety Statements and Policy 	-Site / Maintenance Manager	Throughout the maintenance phase
	Sewage generated onsite	<ul style="list-style-type: none"> -Provide sufficient toilet facilities for workers (mobile/portable chemical toilet if possible). -No open defecation is allowed on and around the site. -Make use of constructed flushing toilets. 	<ul style="list-style-type: none"> -there are sufficient toilets within the School premises 	-Site / Maintenance Manager	Throughout the maintenance phase

5.3 Environmental Monitoring Actions

To ensure that the implementation of recommended environmental management measures is working and produces the desired results (minimizing the "medium" and uphold the "low" significance ratings of impacts), certain key impacts will need to be monitored and reported on. The "Observation, compliance status and "Recommended Action" columns will be completed for every monitoring done on site.

Monitoring reports are to be compiled by the project HSE Officer, audited by an Independent Environmental Consultant, and submitted to the DEAF for archiving on a bi-annual basis (every 6 months throughout the project operations) or as required by the Environmental Commissioner (as per the ECC conditions). The environmental components or features provided in the above tables will be updated accordingly once the project commences.

Appendix 1: Chance Finds Procedure (After Kinahan, 2020)

Areas of proposed development activity are subject to heritage survey and assessment at the planning stage. These surveys are based on surface indications alone, and it is therefore possible that sites or items of heritage significance will be found during development work. The procedure set out here covers the reporting and management of such finds.

Scope: The “*chance finds*” procedure covers the actions to be taken from the discovery of a heritage site or item to its investigation and assessment by a trained archaeologist or other appropriately qualified person.

Compliance: The “chance finds” procedure is intended to ensure compliance with relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): “*a person who discovers any archaeological objectmust as soon as practicable report the discovery to the Council*”. The procedure of reporting set out below must be observed so that heritage remains reported to the NHC are correctly identified in the field.

The Project Site Manager/Supervisor must report the finding to the following competent authorities:

- **National Heritage Council of Namibia (Head Office: +264 61 244 375 / Technical Office +264 61 301 903)**
- **National Museum (+264 61 276 800),**
- **National Forensic Laboratory (+264 61 240 461).**

Responsibility:

Operator:	To exercise due caution if archaeological remains are found
Foreman:	To secure site and advise management timeously
Superintendent	To determine safe working boundary and request inspection
Archaeologist	To inspect, identify, advise management, and recover remains

Procedure:

Action by person identifying archaeological or heritage material

- a) If operating machinery or equipment stop work
- b) Identify the site with flag tape
- c) Determine GPS position if possible
- d) Report findings to foreman

Action by foreman

- a) Report findings, site location and actions taken to superintendent
- b) Cease any works in immediate vicinity

Action by superintendent

- a) Visit site and determine whether work can proceed without damage to findings
- b) Determine and mark exclusion boundary
- c) Site location and details to be added to project GIS for field confirmation by an archaeologist

Action by Archaeologist

- a) Inspect site and confirm addition to project GIS
- b) Advise NHC and request written permission to remove findings from work area
- c) Recovery, packaging and labelling of findings for transfer to National Museum

In the event of discovering human remains

- a) Actions as above
- b) Field inspection by archaeologist to confirm that remains are human
- c) Advise and liaise with NHC and Police
- d) Recovery of remains and removal to National Museum or National Forensic Laboratory, as directed.