



P.O. Box 4453
Walvis Bay, Namibia

Cell: +264 81 256 9827
Tel: +264 64 220 275

Email:
info@urbannest-na.com

Urban Projects Planning & Coordination Consultant

ENVIRONMENTAL MANAGEMENT PLAN

PROPOSED CONSTRUCTION AND OPERATION OF A SERVICE STATION IN GCAMADE, KAVANGO-WEST REGION



August 2024

Project	Environmental Impact Assessment for proposed construction and operation of a service station in Gcamade village, Kavango West Region
Report date	December 2023
Prepared for	Caltop Investments (Pty) Ltd
Prepared by	HEH Urban Nest Creations
Contact details	info@urbannest-na.com

HEH URBAN NEST
CREATIONS cc
 Urban Projects Planning & Coordination Consultant
 P.O.Box 4453 Walvis Bay, Namibia
 Cell: +264 81 256 9527
 Tel: +264 64 220275
 Email: info@urbannest-na.com
hiila.hituia@urbannest-na.com



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1. Aim

The goal of this Environmental Management Plan (EMP) is to make sure that all specified mitigation measures are carried out to prevent the worst possible effects on the environment and society. Every environmental assessment report must include an EMP in accordance with the Environmental Management Act of 2007 and the EIA regulations of 2012.

2. Approval

In order to be implemented, this EMP needs to obtain clearance from the Office of the Environmental Commissioner under the MEFT. An ECC will be given to the proponent for the development to proceed when the MET gives its approval. The proponent (Caltop Investments), the contractors, and every participant in the development, during both the construction and operating phases, are expected to adhere to the terms and conditions that will be outlined in the ECC.

3. Roles and Responsibilities

Caltop Investments (Pty) Ltd. will oversee the overall management of the EMP implementation. This is because the development that is being considered could have some environmental effects, which are likely to occur both during the planning and construction phases. As a result, Caltop Investments, the proponent must guarantee that the EMP is applied throughout both phases. It can, however, collaborate with the operational managers or contractors to ensure that the worst impacts are avoided.

4. EMP in details

The EMP is displayed as a matrix, highlighting the main activities of concern that might have an influence on development. The main issues for the construction and operating activities are listed under the matrix, together with their predicted effects, the necessary management actions, who is responsible for doing them, and when they need to be taken.

4.1 Administrative aspects

Aspect	Impact	Management Action	Responsibility for Action	Time Frame
Implementing and monitoring	Ensure Compliance with mitigation measures	<ul style="list-style-type: none"> All key aspects of the EMP should be implemented, both during construction and the constructional phases Conduct regular site inspections. Hold regular meetings with workers both during the construction and operational phases to discuss key issues related to the EMP. 	<ul style="list-style-type: none"> Caltop Investments (Pty) Ltd Project Managers (Construction Phase) All managers (Operational Phase) 	<ul style="list-style-type: none"> Short-term (entire construction phase) Long-term (entire operation phase)
Communication	Ensure sound communication with the Gcamade Mbunza Community or IAPs	Open communication should be maintained between the proponent and the Gcamade Mbunza and IAP's with regards to the environmental and social issues throughout the construction and operational phases.	Caltop Investments (Pty) Ltd	Long-term (as from project inception)
Grievance Procedure	Social performance Environmental Protection	<ul style="list-style-type: none"> A mechanism for dealing with grievances should be developed. The IAP's should be informed about the Grievance Mechanism All key concerns for the IAP's should be recorded and addressed. 	Caltop Investments (Pty) Ltd	Long-term (as from project inception)
Training, awareness creation and induction	<ul style="list-style-type: none"> Social performance Environmental protection 	<ul style="list-style-type: none"> All the construction workers should be inducted and trained All the operational workers should be inducted and trained. 	<ul style="list-style-type: none"> Caltop Investments (Pty) Ltd Contractor (Construction) 	<ul style="list-style-type: none"> Prior to construction and during construction

		<ul style="list-style-type: none"> • Sign boards should be erected for any general awareness needed to be created where possible. • Road signs should be erected anywhere driving awareness needed. • Further awareness can be raised through meetings and presentations 	Project Manager)	<ul style="list-style-type: none"> • Before and during the operation phase
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4.2 Construction activities

Aspect	Impact	Management Action	Responsibility Action	Time Frame
Site preparation	<ul style="list-style-type: none"> • Land damage • Loss of vegetation (insignificant) • Loss of fauna species • Alteration of topography and geomorphology 	<ul style="list-style-type: none"> • No land clearing should be allowed beyond the proposed construction area. The remaining vegetation should be preserved. • The site should be clearly demarcated. • No animal must be killed or injured at the construction site rather assisted migration shall be employed where necessary. • Off-road driving beyond the construction area by earthmoving equipment should be minimized. • Professional construction designs must be in place and be implemented by qualified engineers. • Erection of the buildings must comply with the National Building regulations. • Qualified Civil Engineers must be contracted as per the Engineering Council to supervise the construction process, and to ensure the 	Construction contractors (Project managers)	Pre-construction and during construction

		<p>application of the environment sound principles.</p> <ul style="list-style-type: none"> The removed soil layer should be used wisely and should not be allowed to cover vegetation in the vicinity. Culverts must be constructed to aid the flow of water and minimize water erosion as a result of the hilly and slope nature of the construction site. 		
<p>Pollution, solid waste generation and disposal</p>	<p>Air pollution</p>	<ul style="list-style-type: none"> Dust must be settled using water during the construction period, regularly. The entire construction team must be provided with dusk masks, to prevent the inhalation of dust particles. Open stockpiles of cement bags must be avoided and must be covered at all times. The sewerage system should be regularly maintained to avoid smell nuisance from the septic tanks. Burning of waste at construction site is not allowed, instead the municipal waste sites must be utilized, and waste must recycle, re-used and its generation must be reduced. Construction of temporal bitumen roads must be implemented on busy sections of construction sites, where necessary. 	<p>Project Manager Contractor Construction workers</p>	<p>Regularly (continuous/ongoing)</p>



	<p>Water pollution</p>	<ul style="list-style-type: none"> ● Water should be used wisely, and use of too much water during construction must be avoided. ● The water used for curing should be sprayed on the concrete structures ● Ponds should be constructed using cement and sand mortar to prevent water from flowing away from the surface while curing. ● Waste water should not be poured on the vegetation, or allowed to spill on them, but should be safely disposed. ● Paint and cleaning products must be safely disposed to prevent excessive water pollution. ● Hazardous liquids should be professionally disposed to prevent both surface and underground water pollution. ● Recreational water facilities must be recycled and disinfected to prevent the spread of waterborne infections. ● Biological water treatment mechanism must be employed to prevent next hierarchical level pollution such re-use through gardening. 	<ul style="list-style-type: none"> ● Project Manager ● Contractors ● Construction workers 	<p>Regularly (continuous/ongoing)</p>
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	Land pollution	<ul style="list-style-type: none"> ● Basic waste management practice education to the contractors can help with anti-land pollution campaign during and after construction. ● Waste generation must be minimized and where possible waste must be eliminated. ● Adequate waste collection facilities should be well placed at construction site. ● Useful waste materials must be re-used. ● Unlawful deposit of waste on open land should be avoided and disposal shall be done according to national and international standards and regulations. ● An environmentally sound sewage system should be in place e.g., eco-toilets for the construction workers should be constructed prior the actual construction. ● Recycling of waste materials should be promoted. All recyclable materials such as papers, cans, plastics, and glasses can be segregated (use waste segregation bins) and marketed to local recycling companies. ● No burning of waste should be done on land. 	<ul style="list-style-type: none"> ● Construction (Project Manager) ● contractors 	Pre-construction and during construction
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	Noise Pollution	<ul style="list-style-type: none"> Noise pollution should be kept minimal during construction should be kept minimal. Nighttime construction activities must be avoided. All construction activities should not go beyond 18h00. Use of construction equipment with noise generation beyond the World Health Organisation's (WHO's) permissible noise level limit must be communicated to nearby residents before schedule. Speed limit to and from the site should be set. Use of sport and recreational facilities should be communicated to inhabitants where necessary before schedule. 	<ul style="list-style-type: none"> Project Manager Contractors Construction workers 	Pre-construction and during construction
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4.3 Safety and Security, Occupational Health, and Working Conditions

Aspect	Impact	Management Action	Responsibility for Action	Time Frame
Presence of construction teams and equipment	Community and construction workers' safety and security	<ul style="list-style-type: none"> Construction companies should be ISO 14001:2016 certified using ISO 14001:2016 can provide assurance to company management and employees as well as external stakeholders that environmental impacts are being measured and improved as per the EMP. A Construction Safety and Security Plan should be developed and implemented according to ISO 14001:2016. 	Construction Project Managers	Pre-construction and during construction

Health of the workers	Construction workers' performance	<ul style="list-style-type: none"> • All personnel at the construction site must be made aware and comply with the Construction Safety and Security Plan. • Fence off the construction site where necessary to prevent accidents. • Avoid unauthorized and other daily visitors at the construction site during the construction phase. • Namibia's health and safety regulations should be adhered to as per the Labour Act No. 11. Of 2007, which is being implemented according to the international Labour Organisation (ILO) guidelines. • Training on occupational therapy should be provided to all construction employees. • First Aid kits should be made available at the construction sites. • All employees should be provided with protective materials (e.g., dust masks, hand gloves and overalls). • Examination for the specific type of work which require employees' medical examinations certificates should be done before hiring the personnel. 	Contractors (Health and safety inspectorate)	Pre-construction and during construction
Labor and working conditions	Construction workers' performance	<ul style="list-style-type: none"> • Namibia Labour Act No. 11 of 2007 shall be adhered to and specific reference to international labour organisations. Guidelines shall be taken into consideration. • The Grievance Mechanism should be implemented in line with the Namibian Employment and Labour Act of 2018. 	Caltop Investments (Pty) Ltd	Duration of construction activities



4.4. Socio-economic aspects

Aspect	Impact	Management Action	Responsibility for Action	Time Frame
Employment creation	<ul style="list-style-type: none"> Poverty reduction Local economic upliftment 	<ul style="list-style-type: none"> High priority should be given to Namibian companies involved in architecture, civil engineering, structural engineering, mechanical engineering and quantity surveying when it comes to the project design. Namibian construction companies to construct the proposed developments e.g., residential, school and businesses. Construction materials should be procured from local suppliers within the Kavango West Region and surrounding areas. The majority of people to be employed both during the construction and the operational phases should be from the Kavango West Region and surrounding areas while few of the supporting (experienced) staff should be sourced externally (regionally or nationally) 	<ul style="list-style-type: none"> Caltop Investments (Pty) Ltd Contractor 	Pre-construction and before the actual operation
Urban development	Infrastructure development	The integrity of the infrastructure should be well maintained	Caltop Investments (Pty) Ltd	Ongoing
Tourist attraction	Local economic upliftment	<ul style="list-style-type: none"> The area should be kept clean, as it will have a high potential to attract tourists. The development will equally serve as a tourist attraction point. 	Project Manager (operation phase)	Regularly (ongoing)

4.5. Waste Management

Aspect	Impact	Management Action	Responsibility for Action	Time Frame
Solid Waste	<ul style="list-style-type: none"> • Solid pollution • Water contamination • Aesthetic view 	<ul style="list-style-type: none"> • Awareness raising on: avoiding waste generation, waste reduction, re-use and repair. • Littering must be avoided by all means • Sufficient provision of materials/equipment to dispose waste, placed at reasonably distances and at strategic areas. • Solid waste must be disposed in the provided waste bins/containers. • Full waste bins should be emptied on time and should not be left to overflow. • A temporary disposal site should be put in place during the construction phase. • All general waste should be disposed off at the main site during the operational phase. • Building rubbles should be disposed off at the nearest satellite site. • Re-use of waste materials should be promoted. • Recycling should be promoted. • Frequent monitoring of waste handling at the site. 	<ul style="list-style-type: none"> • Caltop Investments (Pty) Ltd • Contractors 	During the construction and the operational phases
Liquid waste	<ul style="list-style-type: none"> • Underground water contamination • Soil contamination • Odor 	<ul style="list-style-type: none"> • Unused paints and other liquids should not be discarded on the ground. • All finished and unfinished containers must be kept tightly closed at all times, be disposed in a proper manner at the villages landfill site 	<ul style="list-style-type: none"> • Project manager (during construction) • Caltop Investments (Pty) Ltd • Contractors 	During the construction and operation phases

		<ul style="list-style-type: none"> • A good sewer system should be constructed to cater for the total sewer from all ablution facilities. • Leakages should be constantly monitored. • Septic tanks should be regularly monitored and managed. • Regular soil sampling to monitor any possibility of soil contamination. 		
Hazardous waste	Soil and water contamination	<ul style="list-style-type: none"> • Hazardous waste such as paint, cleaning chemicals, and used oil should be stored in safe containers and safely disposed of at the nearest landfill site. • None should be exposed to the open environment. 	<ul style="list-style-type: none"> • Contractors • Caltop Investments (Pty) Ltd 	During construction and operational phases
Smoke	Air pollution	Smoke must be avoided at all costs.	<ul style="list-style-type: none"> • Construction employees • Gcamade Mbunza, Kavango West Region (service station) 	During construction and during the operational phases

5. Monitoring and Reporting Plan

The following plan will be implemented for the purpose of monitoring and reporting, both during the construction and operational phases. Reports should be submitted to the MEFT.

Aspect	Implication	Frequency	Responsibility for Action
Implementation of the EMP	Environmental protection and social performance	<ul style="list-style-type: none"> • Bi-weekly during construction • Every six months during the operational phase. 	<ul style="list-style-type: none"> • Caltop Investments Pty (Ltd) • External Auditors



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