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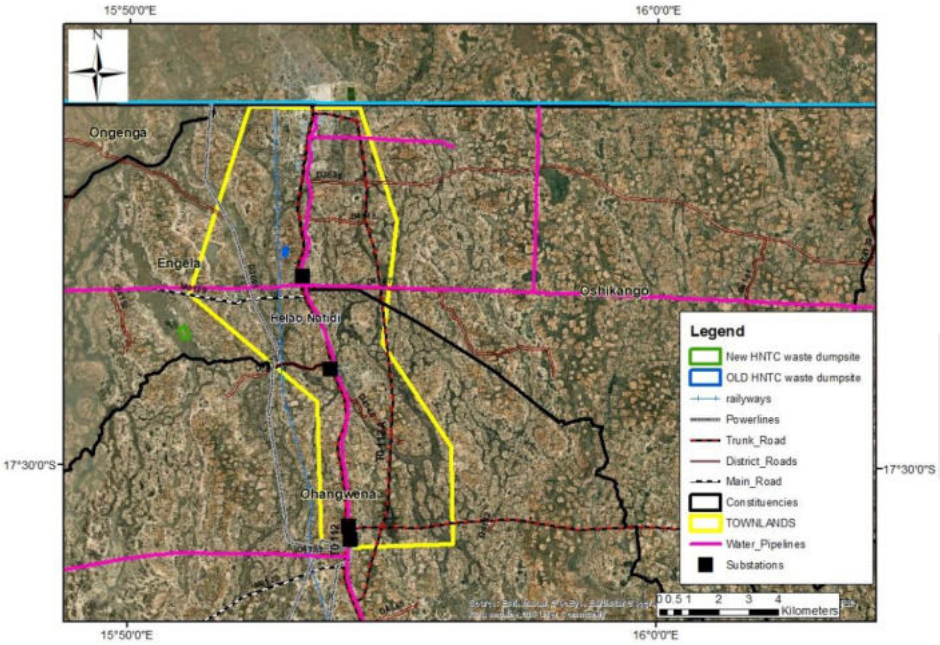
UPDATED ENVIRONMENTAL MANAGEMENT & REHABILITATION PLAN



TO

Support RENEWAL APPLICATION for Environmental Clearance Certificate (ECC) for: The Construction, Operation and Decommissioning of a New Waste Dumpsite at Helao Nafidi, Ohangwena region, Namibia

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LIST OF ABBREVIATIONS

CEB	**Cuvelai Etosha Basin**
CEO	**Chief Executive Officer**
CFP	**Chance Find Procedures**
DEAF	**Department of Environmental Affairs and Forestry**
DWA	**Department of Water Affairs**
ECC	**Environmental Clearance Certificate**
ECO	**Environmental Control Officer**
EIA	**Environmental Impact Assessment**
GN	**Government Notice**
Ha	**Hectare**
EMA	**Environmental Management Act**
EMRP	**Environmental Management and Monitoring Plan**
HNTC	**Helao Nafidi Town Council**
MEFT	**Ministry of Environment, Forestry and Tourism**
MME	**Ministry of Mines and Energy**
OHS	**Occupational Health and Safety**
OMAVI	**OMAVI Geotechnical & Environmental Services**
PRO	**Public Relations Officer**
SHE	**Safety, Health and Environmental Officer**
WHO	**World Health Organization**

1 INTRODUCTION

This Environmental Management and Rehabilitation Plan (EMRP) report serves as a legally binding document which serves to provide pragmatic impact control measures that must be implemented and continuously enforced to minimize potential adverse impacts whilst optimizing possible positive impacts. Additionally, the report aims to ensure that the project complies with local environmental regulations as per the requirements of the Environmental Management Act (EMA) Act of 2007.

1.1 Objectives of the EMRP Report

The primary objective of this report is to ensure that the project is implemented in an environmentally sustainable and socially responsible manner. These objectives align with regulatory requirements and best practices for minimizing negative environmental and socio-economic impacts. The objectives of the EMRP can therefore be summarised as follows:

- **Ensure Environmental Compliance:** Adhere to national and international environmental regulations, policies, and standards as stipulated under the EMA of 2007.
- **Monitoring and Management Programs:** To track the effectiveness of mitigation measures and provide guidelines for regular environmental audits and reporting requirements.
- **Enhance Stakeholder Engagement and Public Participation:** Ensure that communities, government agencies, and other stakeholders are informed and involved in decision-making and address stakeholder concerns through transparent ways.
- **Ensure Occupational Health and Safety (OHS) Compliance:** Integrate health and safety measures to protect workers during continued construction, operation, and decommissioning phases.
- **Guide the Decommissioning and Rehabilitation Process:** Provide a plan for the proper closure of the dumping site at the end of its operational life and ensure site restoration to minimize long-term environmental degradation.

1.2 Assumptions and Limitations of the EMRP Report

This EMRP was developed based on the following assumptions and limitations which must be acknowledged to fully understand the scope and applicability of this report. The key assumptions on which this report is based can be summarized as follows:

- **Accuracy of baseline data:** The report acknowledges that environmental baseline data as based on site observations and visual judgement is representative of the project area concerned. It is acknowledged that laboratory testing was not part of the scope of work conducted.

- **Compliance with regulatory requirements:** It is assumed that the project will follow all environmental laws, permits, and policies set by national and international authorities because the effectiveness of the EMRP depends on strict enforcement by regulators and project developers.

- **Implementation of mitigation measures:** The EMRP assumes that all mitigation and management strategies will be properly implemented and enforced as outlined herein. The project proponent is thus expected and mandated to allocate resources and personnel to execute, implement and enforce these measures effectively.

A summary of the key limitations of this EMRP report is provided below:

- **Uncertainties:** Seasonal variations in environmental conditions (e.g., local flooding of oshanas around the dumping site making access difficult;) may not be fully captured and some impacts may only become evident over prolonged time, making it difficult to predict long-term effects with certainty. The scope of work provided for by OMAVI in the updating of this EMRP does not include specialist studies concerning hydrological, hydrogeological and/ or geotechnical surveys.

- **Changes in legislation and policies:** Future modifications in environmental, socio-economic laws or regulations may render parts of the EMRP outdated. Compliance requirements could change, requiring updates or additional approvals as and whenever such changes come into effect. For this reason, the EMRP must remain a live document that must be reviewed and updated regularly to account for these changes.

- **Effectiveness of mitigation measures:** While mitigation measures are designed based on best practices, their effectiveness may vary seasonally due to unforeseen out-of-the-norm natural events such as floods, heavy winds, etc. Adaptive management may be necessary to re-visit and refine these impact management strategies over time.

- **External environmental and socioeconomic factors:** Unpredictable events, such as natural disasters (e.g., floods, excessive winds,), could affect project implementation and impact mitigation efforts.

1.3 About the Proponent

The Helao Nafidi Town council (HNTC) is the sole Proponent for this project, and through the office of the CEO will be applying for the renewal of an ECC that would permit the continued development and operation of the new waste dump site. This assessment aims to assist the HNTC to align with industry best practice in terms of responsible municipal waste management and compliance with the Namibian Environmental Management Act of 2007.

1.4 About the Environmental Assessment Practitioner

OMAVI Geotechnical & Environmental Services is a specialist environmental management consulting entity, registered under the Namibian constitution's Company Act. OMAVI has considerable experience in:

- Conducting biophysical and socio-economic impact assessments by undertaking an integrated approach that systematically analyses the impacts of a project's engineering design and construction plus operational activities on various environmental receptors,
- Best practice environmental assessment and management reporting,
- Solid Waste Management Planning,
- The drafting of project-specific Environmental Management and Rehabilitation Plan (EMRP) which are aligned with project objectives whilst taking cognizance of local and regional environmental guidelines and standards,
- Coordination of stakeholder engagements and participation to ensure transparency and inclusivity in the ESA process and in development of the EMRP, and
- The management and co-ordination of all aspects of the Environmental Impact Assessment (EIA) process including the development of Terms of References for Specialist studies where such studies are required.

1.5 Project Description

1.5.1 Project locality

The concerned waste dumpsite is located approximately 5 km west of the B1 tarred road enroute Oshikango and can be accessed via smaller detour roads such as the D3608 district and several existing smaller tracked roads. There is also a dedicated access road to the concerned site which leads from the D3608 tarred road, however, during the past rainy season this has proven to highly prone to flooding and unavailable for use during periods of heavy rainfall.

The concerned site lies outside the current townland boundaries of Helao Nafidi on an approximately 9 Ha piece of communal land, which thus falls under the jurisdiction authority of the Oukwanyama Traditional Authority as well as the Ohangwena Communal Land Board. The location of the municipal waste dumping site can be seen in **Figure 1-1** to **Figure 1-3**, and the corner coordinates are provided in **Table 1-1**.

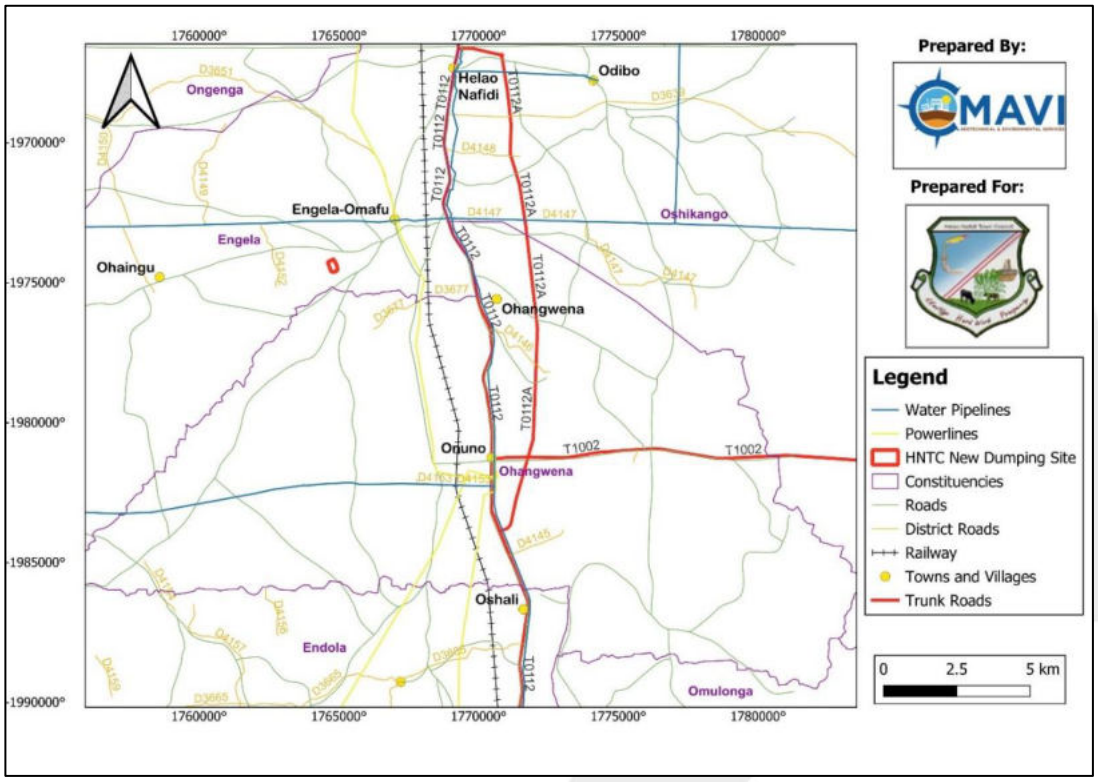

Figure 1-1: Locality map of the new Helao Nafidi waste dumping site

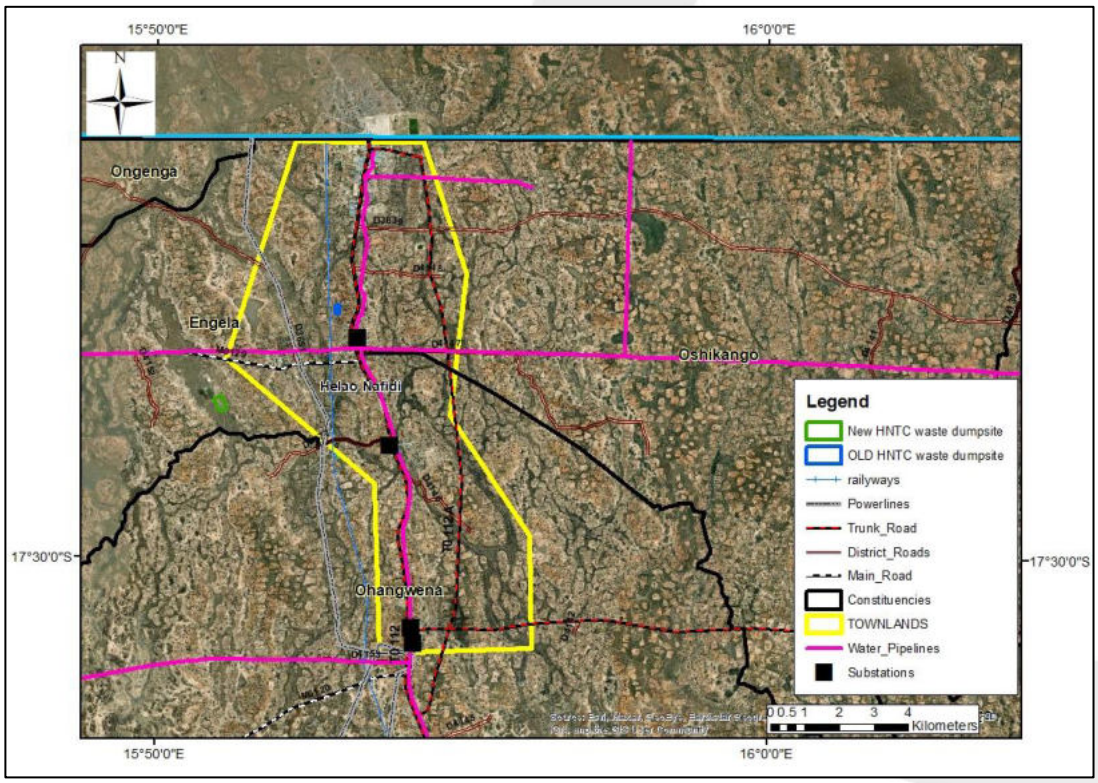

Figure 1-2: Location of the new dumping site

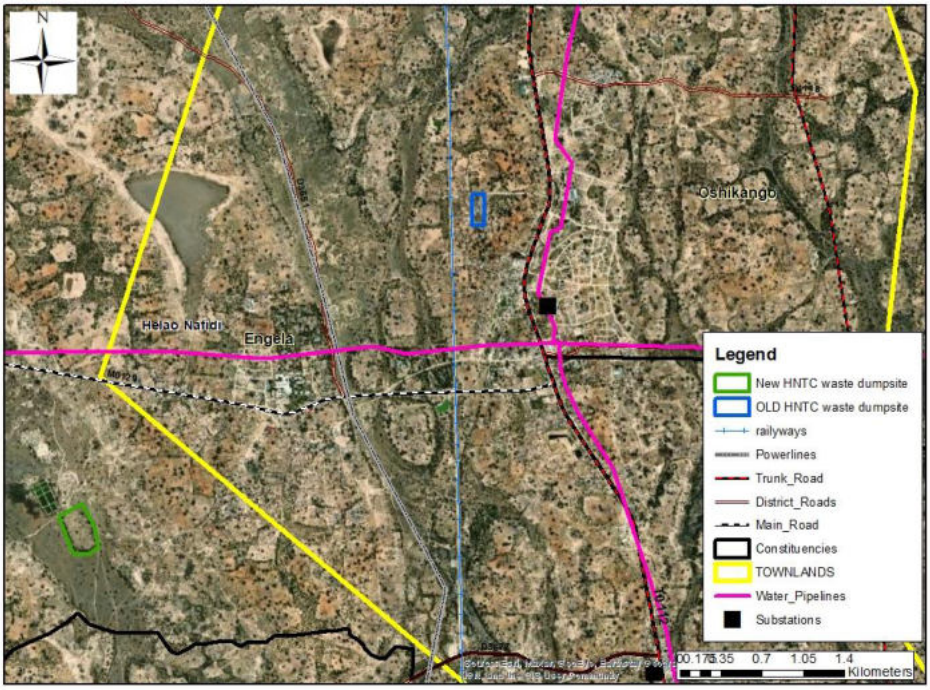

Figure 1-3: Closer aerial view of the new waste dumping site

Table 1-1: Corner coordinates of the new waste dumping site

SITE NAME	LATITUDE	LONGITUDE
Helao Nafidi new waste dumping site	-17.458746°	15.849013°
	-17.457778°	15.850893°
	-17.459371°	15.851790°
	-17.459983°	15.852011°
	-17.461126°	15.852213°
	-17.461393°	15.851857°
	-17.461639°	15.851437°
	-17.461691°	15.850946°
	-17.461595°	15.850145°

2 LAWS AND POLICIES RELEVANT TO THIS EMRP

2.1 Relevant national obligations

This section covers information on the legal obligations (legislations, policies, and guidelines) that will govern the implementation and subsequent enforcement of the various proposed impact management measures outlined herein. Reference is thus made to Table 2-1, below.

Table 2-1: Permitting requirements for the proposed project

Legislation	Provisions
Environmental Management Act No. 7 of 2007 Environmental Impact Assessment (EIA) Regulations (EIAR) (GG No. 4878)	Activities listed in Government Notice (GN) No. 29 of GG No. 4878 require an Environmental Clearance Certificate (ECC). The amendment, transfer, or renewal of the ECC (EMA S39-42; EIAR Regs19 & 20). Amendments to this EMP will require an amendment of the ECC. The ECC needs to be renewed every 3 years. Bi-annual environmental monitoring reports will have to be submitted to the Ministry of Environment, Forestry and Tourism either by the HNTC or the consultant every 6 months from date of issuing of the ECC
Pollution Control & Waste Management Bill	This Bill serves to regulate and prevent the discharge of pollutants to air and water as well as providing for general waste management.
The Water Act 54 of 1956 The Water Resources Management Act No. 11 of 2013 (unpromulgated)	The Proponent is required by law to protect water resources from pollution emanating from their project activities. Water resources shall be used in a sustainable way. Should there be a need to dispose of wastewater into the environment, the Proponent would be required to apply for Treated Wastewater Discharge Permit from the Department of Water Affairs (DWA): Directorate of Water Resources Management (Water Environment Division).
Road Traffic and Transport Act 52 of 1999 and its 2001 Regulations	Provides for the control of traffic on public roads and the regulations pertaining to road transport, including the licensing of vehicles and drivers.
Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001)	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". **A fuel storage Permit should be applied for and obtained from the Ministry of Mines and Energy (MME**) prior to the construction stage if oils, diesel or lubricants in excess of the 600L will be stored on site

Forestry Act (No. 12 of 2001) Nature Conservation Ordinance No. 4 of 1975 (as amended)	Permits are required for the removal of protected plants species (trees).
National Heritage Act (Act No. 27 of 2004)	Should any objects of heritage significance be identified during the construction of the waste dumpsite, the work must cease immediately in the affected sites and **the necessary steps taken to seek authorisation from the Council**.

3 ENVIRONMENTAL OVERVIEW OF CURRENT CONDITIONS OF PROJECT AREA

This section presents an overview of the existing climatic, biophysical, and socio-economic conditions of the area. For this project the data has been collected through desktop surveys and visual observations made during the site inspection visit.

3.1 CLIMATIC CONDITIONS

3.1.1 Temperature and Rainfall

Towards the northern parts of the country where Helao Nafidi is located, the annual temperatures are generally higher than 22°C. The minimum and maximum temperatures range between 6 and 8°C, and 34 and 36°C, respectively. October is considered the hottest month, and this is because of cloud cover and rainfall increase from October onwards and reduces the radiation reaching the northern and central areas. Based on the nearest available data obtained from a 13-year period, i.e., 2009 to 2022 for Ohangwena Town, the area recorded a minimum temperature of 10°C in May 2015, and maximum of 40°C in October 2010. The average annual rainfall for the project area can be expected to range between 400mm and 500 mm.

3.2 BIOPHYSICAL ENVIRONMENTAL CONDITIONS

3.2.1 Flora

The surrounding area vegetation is defined by woodland dominated mainly by trees and shrubs, primarily acacia trees. The vegetation observed on site during the visit conducted on 23rd April 2025 consists of short grass moderately scattered on site, young camelthorn (*Acacia reficiens*), mopane (*Colophospermum mopane*) and some makalani palm (*Hyphaene petersiana*) shrubs, as well as acacia and palm trees. The site vegetation is shown in **Figure 3-1** below.

Figure 3-1: Dominant vegetation around the dumping site area

3.2.2 Fauna

No endangered domestic or wildlife species were observed present on site or surrounding; therefore. No wildlife was observed in the vicinity of the study area. Only domestic animals mainly cattle, goats and donkey are present in the vicinity of the proposed project site. These domestic animals are part of the livestock kept by the communal landowners (subsistence farmers) in the nearby households.

3.2.3 Topography and soils

The Helao Nafidi Town and surrounding areas are situated in the Cuvelai Basin whereby most of the land surface of is very flat, dipping from 1,150 m above sea level in the northeast to 1,080 m above sea level in the Etosha Pan to the south. All the basin surface drainage, therefore, flows slowly in the direction of the Etosha Pan (Atlas of Namibia, 2020). The area is distinguished by a myriad of drainage channels locally known as oshanas. These oshanas are often filled with water during heavy rainy seasons and cut into the underlying sediments.

The geology of the Helao Nafidi Town and surroundings is characterized by the unconsolidated to semi-consolidated sands, calcrete and gravel sediments of the Quaternary and Tertiary age of the Kalahari Group. Much of this landscape lies on silt, clay, limestone, and sandstone sediments. The area is dominated by calcisols according to (Atlas of Namibia, 2020) (refer to **Figure 3-2).**

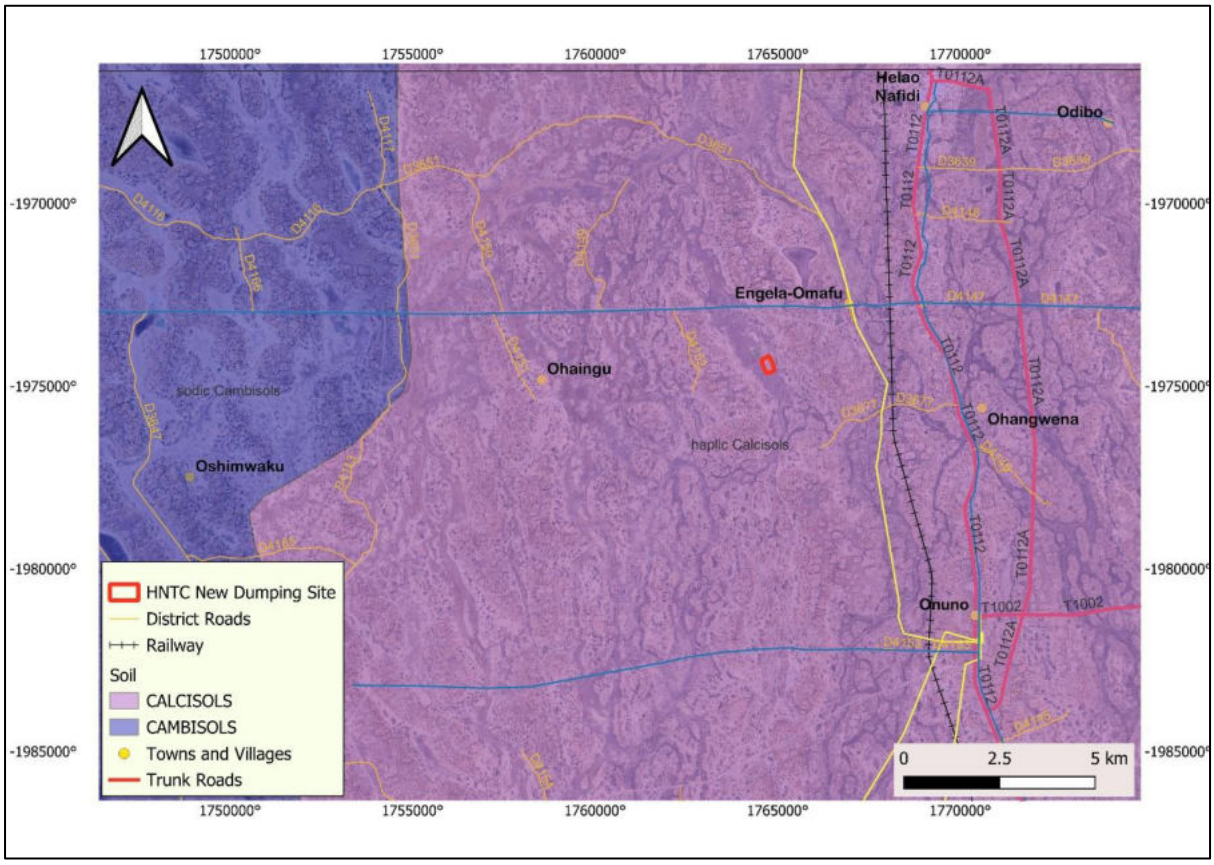

Figure 3-2: Dominant soil type in the vicinity of the HNTC dumping site area and surrounding areas

3.3 AIR QUALITY

The potential current known sources of air pollution in the Town are dust emissions from unpaved access roads, and emissions from heavy vehicles such as trucks delivering and collecting goods and products to and from the combined towns of Ohangwena, Oshikango and Helao Nafidi. Another source of air quality issue is the occasional odour from the existing dumpsite in the middle of the Helao Nafidi Town.

There are no air quality index (AQI) data on Helao Nafidi itself, but there is available data for Eenhana (located about 60km east of Helao Nafidi). According to IQ Air (2022), the current air pollution level is good. The air quality index (AQI) is 9 US AQI, and the main pollutant is the atmospheric particulate matter (PM) 2.5. PM are microscopic solid or liquid matter suspended in the air with a diameter of 2.5 micrometres (µm) or less. The PM2.5 concentrate of Helao Nafidi is 2.1 µg/m3, which meets the World Health Organization (WHO)'s annual air quality guideline value.

3.4 WATER RESOURCES

The project area and the Ohangwena Region at large falls under the Cuvelai -Etosha Basin (CEB), which is defined as the Namibian part of the Cuvelai river catchment. The hydrogeology of the CEB comprises the Omusati, Oshana, Ohangwena, and Oshikoto Regions and parts of the Kunene Region.

The CEB Unit 1 and 2, including Ohangwena Aquifer System (Unit 2) is a three-layered system dominated by unconsolidated sand with some sandstones, with an average aquifer thickness of 220 m. It has a high primary porosity and an average transmissivity value of 220 m²/day (Dierkes, 2011).

The groundwater in and around the project site is hosted in the porous Kalahari sediments. The sediments are in some areas of Basin underlain by bedrocks of limestone, sandstone, conglomerate, mudstone, and silt stone as the CEB aquifers and lithology characteristics presented in (Dierkes, 2011) **Figure 3-3.**

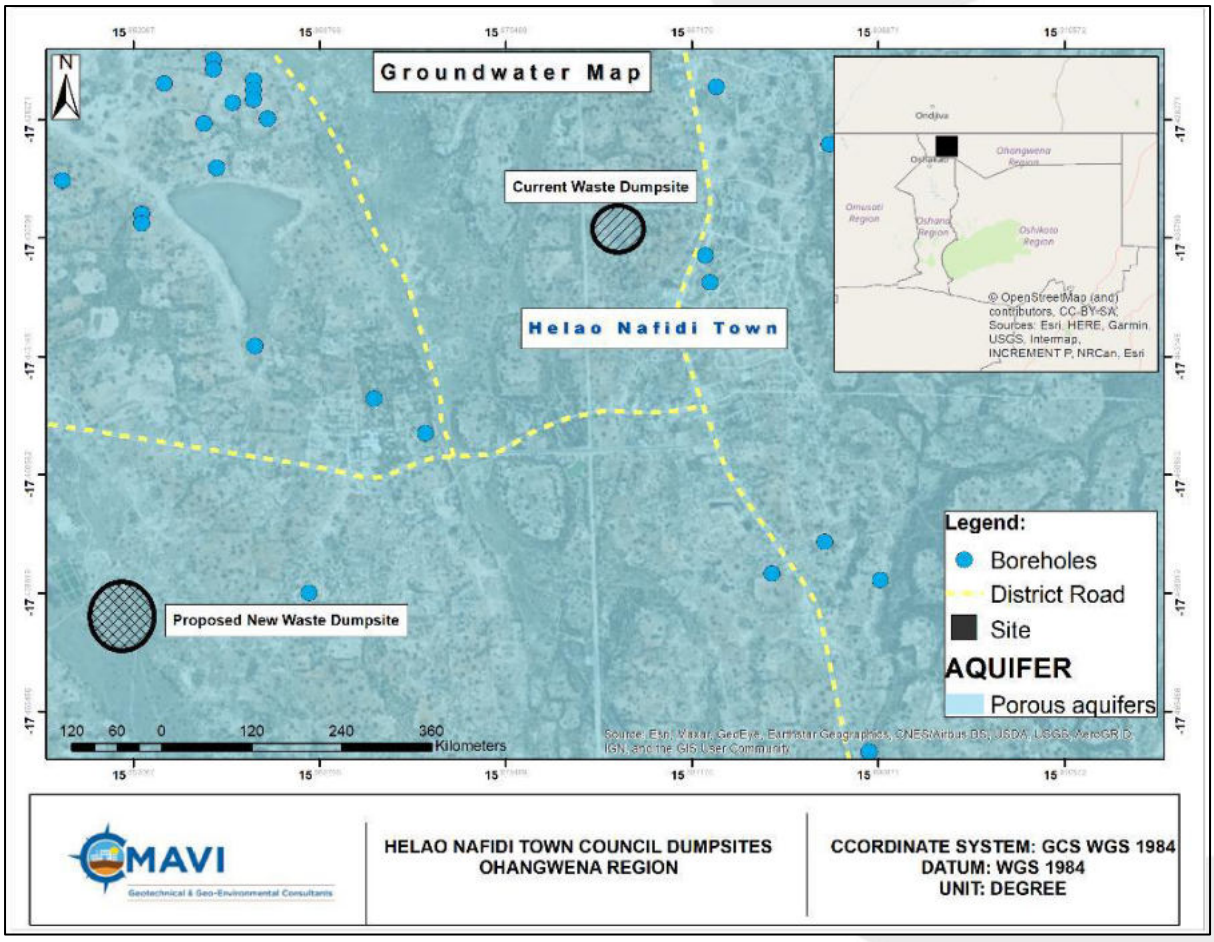

Figure 3-3: Groundwater around the Helao Nafidi area

In regard to surface water, as it is with many towns in the northern areas of Namibia, the Helao Nafidi Town and the project sites are prone to flooding which result in wet marshes (oshanas) that dry up few months after the rainy season, i.e., the oshanas do not hold water throughout the year or longer periods (Jaro Consultancy, 2011).

3.4.1 Vulnerability of Groundwater to Pollution

The vulnerability of groundwater to pollution in the northern regions of the country are considered moderate, thus, from a local level (site specific), the vulnerability to pollution is moderate.

The vulnerability of groundwater to pollution in the area could be worsened by the porous nature of the sediments overlying the project site and surrounding areas in the Region that once pollution lands on the ground surface. Groundwater pollution would generally be a concern on such areas that are overlain by the porous sediments and alluvial (sediments) aquifers, especially, if there is a significant point source of pollution (Van Wyk, 2010).

Given the nature of the proposed project activities, groundwater vulnerability to pollution could be anticipated, especially if the dumpsite bases are not lined to prevent infiltration/leaching of pollutants into groundwater systems, and if run-off diversion channels or trenches are not constructed within and around the facility. This would also occur if construction works were to be undertaken during heavy rainy seasons (months of the year, November to April) where the construction waste could be easily carried away through runoff and eventual recharging groundwater with polluted water.

3.5 SOCIO-ECONOMIC ENVIRONMENT

3.5.1 Population and Governance

According to the 2023 population and Housing Census, the Ohangwena region has a regional population of 337 729 inhabitants. The Helao Nafidi town area has a population of 28 508 inhabitants (https://nsa.org.na/census/ohangwena-region/). The area is made up of three constituencies namely Engela, Oshikango and Ohangwena. These constituencies have populations of 30 004, 30 531 and 31492 respectively according to the 2023 Population and Housing Census. The Helao Nafidi Town Council is responsible for local governance, overseeing municipal services, infrastructure development, and community welfare. The council is composed of elected representatives who advocate for the needs and interests of the residents.

3.5.2 Healthcare and Education

There are about 38 schools in the Helao Nafidi area ranging from public to private (https://moe.gov.na/index.php/dep/dep-sfe/learners-resources). Ohangwena Health Directorate serves an estimated population of 337 729. Ohangwena region is prone to natural disasters. When there is too much rain the part on its western side gets flooded and this affects people's livelihood as the crops are being destroyed, communities are displaced, grazing areas got flooded and waterborne diseases ensues. When there is no enough rain, the region is affected by drought which causes hunger to the local people and their animals. The region has also a vast area which is sandy, and it can only be accessed with a 4x4 vehicles. This affects also service delivery both for health sector as well as other stakeholders. There are about 9 health and primary care facilities, clinics and hospitals in the Engela, Ohangwena and Oshikango constituencies (https://mhss.gov.na/web/mhss/ohangwena-region). At the time of the site visit, the area surrounding the waste dumpsite was generally heavily flooded, which made access to the dumpsite impossible.

3.5.3 Employment and Business activities/ opportunities

The unemployment rate in the Ohangwena region stands at 47.2% (Namibia Statistics Agency, 2024). The youth unemployment rate in the region stands 51.2%. Helao Nafidi Town as the local administrative centre for the three towns (Omafo, Ohangwena and Oshikango) houses Oshikango Town at the border of Namibia and Angola. Oshikango is currently one the busiest Namibian border post. This has brought business opportunities to the surrounding area. With the help of the European Union an Export Processing Zone was established there, consisting of 14 warehouses. Omafo, another suburb of Helao Nafidi, hosts an annual trade show which provides SMEs from within the region to show case and sell their locally produced products.

The above-mentioned activities and other forms of small business activities sustain the economy of the area.

A community youth empowerment project funded by the Social Security Commission (SSC) lies to the immediate north of the current waste dumpsite. According to the headman of Engela village, Mr. Djeimo Popyeinawa, this youth empowerment project is envisaged to to focus on a number of key youth empowerment activities such as chicken farming, sun flower production, gardening, designated fish farming and possibly rise harvesting. A serious concern was thus raised by raised by Mr. Popyeinawa that the waste dumpsite and the youth empowerment project cannot co-exist in one area as the former has the potential to pollute and poison water sources used by the latter project, and to potentially have a negative visual impact on potential customers who wish to purchase any fresh products produced from the garden. Although these observations may hold merit, more detailed studies may be required to confirm and verify these.

3.5.4 Heritage/Archaeological status

There is no known, observed or recorded archaeological, cultural and heritage resources (i.e., sites, objects, artefacts) on site nor in the vicinity. However, the absence of such resources on the surface does not mean their absence in the subsurface. Therefore, there is a possibility of inadvertently unearthing such resources when conducting site earthworks during the construction phase. In that case, the Chance Finds Procedure (CFP) of the National Heritage Council (as appended to the EMP) should be followed.

3.5.5 Garbage and Waste disposal

The current practice of disposing and managing solid waste at this new facility involves dumping of the waste into the excavated basin and subsequent burning of such material. Garbage and waste regularly collected accounted for only 6.4% of the households. In urban areas, about 35 percent of households benefited from regular waste collection while about 74 percent of households in rural areas burnt their waste. Similarly, at constituency level the most common means of waste /garbage disposal was burning as it was reported by more than half of the households in each constituency (Namibia Statistics Agency, 2011).

-Currently, HNTC have a waste collection programme in place whereby they collect waste from households and enterprises and dispose off it at the dumping site. Some households have municipal bins and others are provided with refuse bags, which the HNTC then picks up. The pick ups are done Monday to Friday, covering a different area daily.

4 SUMMARY OF PROGRESS ON ACTIVITIES

As highlighted above the construction of the HNTC waste dumpsite is being undertaken in phases and Phase 1 has thus far been completed.

Soon after phase 1 construction activities were completed, the new dumping site was commissioned and started operating around Q3 to Q4 of 2024. However, due to recent flooding in the broader Owambo basin, the dumping site became inaccessible for the first part of 2025 and the Town Council has gone back to dumping waste at the old dumping site, which was under decommissioning. This phenomenon should illustrate the criticality of formalizing all access roads to the new dumpsite to ensure that at times the new dumpsite is accessible and prepared to safely receive and store waste.

The summary below provides an overview of the various activities completed during phase 1 of the phased construction program for the new waste dump site:

1. Site clearing, removal of vegetation and subsequent landscaping and levelling across the footprint of the dump site.
2. Partial raising of the access road leading from the D3608 tarred road
3. A perimeter fence as well as access control gates have been set up.

4. Excavation of earthworks, civils and soil compaction have been done during the creation of basin. However, as per the initial EMRP the basin has not be sub-divided into different compartments/ paddocks. Additionally, compaction test results for compaction works undertaken could not be shared with OMAVI at the time of the site visit but the town council has confirmed that these results are sitting with town council's technical department.
5. A designated waste sorting area has been marked out and is currently used by various waste sorters and waste reclaimers. However, the permanent waste sorting compartments and shaded areas initially proposed in the initial EMRP are yet to be constructed.
6. Temporary security shelter has been constructed at the site
7. The town council has contracted individual contractors, which consist of four contractual labours. These people are there to maintain the site and keep the surroundings of the site clean and free from environmental pollution. It has been recommended that Helao Nafidi Town Council assist the present waste recycler on site to organize themselves into recognized Waste Reclaimers and to create a conducive environment for these Waste Reclaimers to trade with recycling companies in town. These Waste Reclaimers will aid Council guarding and controlling or reporting irregulars in order to safeguard their socio-economic interests.
8. A full time Security Guard has been placed 24hours at the disposal site in order to patrol the disposal site and fence, direct and guide vehicles to respective disposal areas and cells, prevent waste burning, and report any non-conformities or defects to health and environment division. The guard are also there to **control** and minimize unauthorized human and animal presence, as well as unauthorized illegal dumping and burning within the disposal site by:
    a. Preventing unauthorized entrance. The security guard are present on-site during and after operating hours. The gates always kept locked to prevent unauthorized access during non-operating hours.
    b. Visually inspecting and recording types and quantities of waste loads entering and leaving the site.
    c. Directing vehicles to respective emplacement and offloading areas.
    d. Inspecting perimeter fence and gates for damages. Reporting and or making repairs if necessary.
    e. Inspecting access roads, entrance areas and perimeter fence for loose trash, and weekly clean-ups as necessary.
    f. Inspecting site access road for damage from vehicle traffic, erosion, or excessive mud accumulation.
    g. Controlled burning may be allowed in consultation and approval by the Health and environmental staff.

In alignment with the recommended initial design and optimal safe operation of the new dumpsite, it is worth noting that the following construction activities were outstanding at the time of this renewal, and it is highly recommended that they be effected before full commissioning of the dump site:

- Sub-division of the main basin into different compartments or paddocks to house different wastes
- Compaction and lining of compartments designated for accommodating toxic and hazardous
- Construction of run off diversion ditches/ trenches, and boundary berms around the main basin to help divert clean run off away from the contaminated dumpsite
- Improvements to the main access road to ensure that the site remain accessible for waste disposal at all time. Controlled access must be strictly enforced, and a designated security personnel must be deployed to the site full-time during working hours to guide the public on where to deposit the different types of waste

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5 ENVIRONMENTAL MANAGEMENT, REHABILITATION AND MONITORING ACTION

5.1 Environmental Management Actions

In accordance with the findings of the status review and assessment carried out, the impact management actions outlined in Table 5-1below are recommended. The "Mitigation and/ or enhancement effectiveness & recommendations" column outlines the effectiveness of the mitigation measures set out in the initial EMP based on the actions that were carried out per impact, the text in bold and red sets out recommendations that the HNTC can further take to improve the effectiveness of these impact management measures.

Table 5-1. Recommended Impact Management actions

Impact	Management Objective(s)	Mitigation / Enhancement Measure(s)	Key Performance Indicator (KPI)	Responsible Party	Key Resources Required	Mitigation/ enhancement Effectiveness & Recommendations
	CONSTRUCTION, OPERATION & MAINTENANCE PHASES					
Lack of EMP awareness and implications thereof	EMP implementation and training	-An EMP non-compliance penalty system should be implemented on site. -The Proponent should appoint a Safety, Health & Environment (SHE) Officer or an Environmental Control Officer (ECO) to be responsible for managing the EMP implementation and monitoring.	-All required Plans and systems are compiled and in place -SHE Officer or ECO is appointed -Records of EMP implementation Plans and Systems. -Identification of all EMP implementation persons. -Compliance monitoring	-Proponent -ECO/ SHE Officer	-Independent Environmental Consultant: EMP compliance and auditing -DEAF: site inspections for compliance -Monitoring reports ECC renewed on time	-It was found that the broader community did not have awareness of the existence of the EMRP nor its content. However, the HNTC does have a dedicated SHE/ ECO officer to effectively implement and enforce the EMRP. - The village headman and committee, although it rejects the existence of this new dumpsite, is now aware of the existence of the EMRP and when necessary can hold the proponent accountable - Overall, it was found that the initial measures were not quite effective but the council acknowledged and committed to enforce the proposed measures going forward.

		-EMP trainings should be provided to all new workers on site. -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 **as recommended below:** • **Daily - construction phase** • **Bi-annually - operational** -An EMRP non-compliance penalty system should be implemented on site. -The ECC should be renewed on time.	conducted as recommended. -Bi-annual compliance for operations -Timely renewal of the Environmental Clearance Certificate (ECC) every 3 years		-Records of EMP training conducted -Funds (N$300) for ECC renewal	-Some of the Proponent officials were not utterly familiar with the first EMRP and the mitigation actions that were set out **-The proponent must enforce mitigation measures strictly that are set out in the EMRP. This can be achieved through regular in-house and community awareness raising meetings and engagements to find common solutions that are aligned with both the town council's development plans as well as with the affected community's livelihood enhancement projects.** **-EMRP training should be given to everyone who is directly involved with work at the dumping site**
Non-improvement and persistent issues of waste management	Improvement of waste management in the Town	-The waste should be sorted in respective compartments on the new dumpsite. -The waste should be properly loaded from the sources into designated	-Visible improved waste management efforts onsite. -Appointed solid waste controllers, recyclers and collectors	-Proponent -ECO - The village headman/ appointed committee	-Waste management compartments -Waste sorters -Waste recyclers	-Moderately effective as dedicated waste sorters and reclaimers where appointed. -Waste reclaimers have been contracted by the HNTC. -The HNTC has a waste pick up programme in place -Sorting of waste at the site temporarily put on hold due to flooding of access roads to the new

		vehicles and transported to the new dumpsite. -The waste should be sorted for recycling by an appointed waste recycling company(ies). -The waste meant for re-use such as domestic organic waste such as garden refuse (such as fruit and vegetable waste) should be prepared for re-use as garden or field manure / fertilizers. -The waste to be burned should be sorted as such. -The communities should be sensitized and discouraged from illegally dumping waste at the rehabilitated dumpsite and outside the new dumpsite. Waste should be dumped in locally provided waste containers and wait for collection by the HNTC or their appointed contractors.	-Measures recommended are visibly implemented		-Waste re-users	dumpsite, waste dumping is temporarily moved to the old dumping site. -Only HNTC members and contracted workers had access to the dumping site at the time of this renewal **-HNTC should construct a proper and well maintained access road leading to the dumping site that will not be affected by flooding to ensure the continued use of the new dumping site and therefore complete the decommissioning of the old dumping site.** **-HNTC will compartmentalize the pit in Phase 2 of construction to ensure discharge of different wastes into different compartments**
Poor services provision such as waste collection, disposal and management	Improved trust in local authority's waste management	-The HNTC should successfully and safely close and rehabilitate the existing dumpsite as per the measures provided herein.	-The existing dumpsite has been successfully and safely rehabilitated. -The waste is properly disposed of and	-Proponent -ECO - Councillor of the town council	-Waste movers and sorters -Sources of waste -Sufficient compartments	-Moderately effective as disposal of waste at old dumpsite is still ongoing and access to the new dumpsite is somewhat restricted due to distance from the town. -The old dumping site has not been fully decommissioned and rehabilitated. After the flooding of the access routes to the new dumping

		-The HNTC should utilize the dumpsite to their best ability by implementing the provided mitigation measures on dumpsite preparation, waste handling, which will include storing waste in respective compartments, recycling and re-using. -The waste movers, sorters, controllers(s) and recyclers should be appointed. -as soon as the new dumpsite is constructed and prepared for operations, the Town Council should properly cease the dumping of waste on the current dumpsite, mine the current waste for proper disposal on the new dumpsite.	managed better at the new dumpsite		for different waste	site, deeming the new dumping site inaccessible, the HNTC continued to use the old dumping site which is supposed to be under decommissioning and rehabilitation. -Waste picking programme in place in the town. This is a positive -Waste reclaimers were contracted to work at the site **-HNTC should construct proper access roads leading to the dumping site that will not be adversely affected by flooding to ensure the continued use of the new dumping site and therefore complete the decommissioning of the old dumping site.** **- HNTC should compartmentalize the pit in Phase 2 of construction** **- HNTC should ensure satisfactory compaction and lining of the bases of those compartments where hazardous waste is to be discharged** **- HNTC must introduce a designated municipal waste collection program from houses and commercial properties to ensure that even those with no means to individually take waste to the new dumpsite can have their waste effectively discharged there.**
Susceptibility to erosion and compaction	Soil stability	-Construction activities should be restricted to defined site areas. -Proper management of stockpiles. -Excavated material must be stockpiled until reuse and backfilling.	-Soil erosion prevention measures are visibly in place. -No soil erosion linked to project activities. -Topsoil stockpiles are clearly marked and protected against	-ECO - Contractor(s)	-TLB / Front-end loader -Excavator for backfilling	-Moderately effective -Soil from pit is stockpiled but no evidence of measures put in place to prevent it from being washed away could be observed on site. **-HNTC should demarcate topsoil stockpiles and protect it against wash away and against disturbance.**

		-Use existing roads until new access road has been formalized. -The topsoil stripped from certain site areas should be safely stockpiled and returned to its initial zones during rehabilitation. -All construction pits excavated on site should be rehabilitated and returned to their pre-excavation state as possible. -Soils not within the intended footprints of the site areas should be left undisturbed and conserved. -Project vehicles should stick to access roads provided to avoid re-creation of further tracks resulting in soil compaction.	erosion and disturbance after construction			
Change in topography/ landscape character as well as disturbance of the visual sense of the area	- Landscape the site to an acceptable state or landform	-Rehabilitate and landscape all borrow pits used for sourcing any foreign backfilling. - Landscape and adequately engineer all slopes and berm walls to minimize erosion -The re-use and recycling of waste should be prioritized to ensure that the waste disposed at	-Rehabilitated borrow pits - Satisfactorily landscaped berm walls and basin slopes. - No visible litter against fences	-Proponent -ECO	-Waste compartments -Waste sorting containers and area -Waste recycling companies and communities - Designated site	-Moderately effective as construction is still ongoing. No berm walls were constructed during phase 1 and landscaping of basin slopes was only moderately implemented during phase 1 -Waste reclaimers are on site, and help limit and eliminate litter around the facility. Susceptibility of light litter to blowing air remains a key challenge to fight.

		the site do not create a heap (abnormal landscape) which is out of place with the general surrounds. - No litter around the facility			rehabilitation and closure specialist	
Exposure of birds and other fauna to hazardous / pathogenic waste,	- Limit or minimize bird and other fauna attraction to waste and minimize potential hazards	- Minimize the volume and surface area of exposed waste by regularly covering waste with inert materials such as soil and wood chips to reduce its attractiveness to fauna - Restricted and controlled gate access and ensuring the structural integrity of the boundary fence remains intact at all times - Treat hazardous waste at the sources using technologies such as incineration - For the hazardous waste cells look into options of installing physical barriers such as netting that can prevent birds from accessing the waste - Install noise drums inside paddocks that can be activated regularly by onsite security personnel to scare birds away	-No hazardous waste is uncovered or exposed for more that 24-hours time - Presence of active noise drums which are actively been utilized by onsite security personnel - Presence of active physical barriers in the hazardous waste paddocks - Structural integrity of the boundary fence	-Contractor -ECO	-Grievance logbook - Earth moving plant (e.g., dozer) to regularly bury hazardous waste - Management funds - Fulltime onsite security personnel	-Moderately effective as at the time of this renewal the hazardous waste pit was mostly used for incinerator ash from the hospital and it is not covered. **-HNTC should implement and enforce the installation and practice of the management measures provided for this potential impact in the next phases of construction and during operations**

Disturbance, removal of site and surrounding flora and habitats	- Limit spatial extent of vegetation removal and revegetate to the extent practical	-Vegetation outside the dumpsite basin area and outside the runoff diversion trench should not be disturbed. -Protected (makalani palm) trees (*Hyphaene petersiana*) must be demarcated for non-removal, and pegging personnel must know that marked trees must not be touched for continued preservation. -Large trees within the site boundaries should be preserved. -All seed-rich topsoil must be safely stockpiled and spread over the site, outside the basin area and onto the berm walls of the dumpsite basin and trench. -Onsite vegetation should NOT be cut or used for firewood during construction. -The Proponent should provide environmental awareness training to promote environmental education on the importance of floral biodiversity preservation to all site workers. This mandatory training must be done prior to any	-Evidence of preserved large trees - Evidence of re-vegetation -Record of training to contractors and onsite personnel on the importance of vegetation conservation (part of their induction and contracts)	-Project Manager -Contractor -ECO - Traditional Authority/ Leadership	-Funds to re-vegetate - Funds for training and awareness raising of personnel	-Need to keep a record of re-vegetated areas and demarcated trees which are not to be removed -Vegetation observed inside and around dumping site area, vegetation was only cleared where necessary - No marked stockpiles of topsoil were observed on site

		construction work and can be provided either by the Consultant or the HNTC environmental officers.				
Hydrocarbons release into the environment (grease, oils, fuel spills and leakages from machinery and fugitive wastes.)	- Minimize and clear any areas polluted by hydrocarbons	-The Proponent should implement strict pre-start inspections for all mobile machinery to ensure all vehicles, machinery and equipment are and remain in proper working order. -Vehicle maintenance should be conducted in designated areas only, preferably off-site. If maintenance is to be conducted on site, these areas should be designed to contain spillages i.e., maintenance site must be bundled and paved, and the use of chemicals must be controlled. -Waste oil, fuels and other chemicals from drip trays on stationery vehicles and machinery will be disposed of as hazardous waste at a licensed facility by a specialist hazardous waste handler. -Oil residue will be treated with oil	-No spillages on the surface - Evident usage of spillage containment kits -Evident installation of signs for the hazardous waste and hydrocarbon containers presence onsite. -Register of hydrocarbons containers onsite.	-ECO -Contractor(s) - Traditional Authority/ Leadership	- Funds for training and enforcement of recommended measures	-Effective thus far as no evidence of spillages were observed at time of inspection -Hydrocarbon waste must be disposed off in designated cells which are lined

		absorbent material such as Drizit or bioremediation and removed to an approved waste disposal site. -Spill kits should be utilized by earth moving contractors, and operators of such machines should be trained in the use thereof. -Staff and contractors must be trained in the handling and storage of oils, fuels, chemicals and other hazardous substances -No bins containing organic solvents such as paint and thinners shall be cleaned on site unless containers for liquid waste disposal are provided on site. -All areas for on-site storage of fuels, oils, lubricants during construction must be concrete lined with concrete pads extending at least 1.5m beyond the size of the storage tanks/ containers or drums.				
The stagnation of rainwater in the dumpsite	- Limit contact between the	-Stormwater management systems should be designed and	-Stormwater discharge systems are incorporated into	-ECO	-Financial resources to implement	-The area surrounding the dumpsite was found to be prone to flooding

basin and possible overtopping during rainwater (leading to site flooding and water pollution)	dumpsite and surface runoff - Ensure installation and operation of effective stormwater management structures leading to the existing nearby oxidation ponds	incorporated into the dumpsite designs to ensure that the rainwater that flood the area are collected and diverted to the nearby existing oxidation ponds -A runoff diversion ditch must be constructed and maintained around the upstream side of the facility. - Have pumping provision to pump stagnant rainwater in the basin to designated waste water treatment ponds	the final design and construction of the facility - Evidence of runoff diversion ditches	-Planning & Design Engineer - Traditional Authority/ Leadership	designs and maintain structures after commissioning - Surface water management engineers	-Major improvements are required to minimize proneness to flooding, and to improve the stormwater management system of the facility
Pollution of surface water and groundwater systems through runoff and infiltration	- Minimize leachate generation - Prevent release of leachate into the environment - Limit adverse impacts on ground water resources	-All surface runoff should be diverted from the dumpsite by means of well maintained diversion channels on the upstream side of the facility - Construction works should be done during dry months of the years and not during rainy months (to avoid ease contaminants like hydrocarbons from transported off site through run-off). -The proposed stormwater and runoff diversion ditch must be regularly maintained to	-Stormwater is contained and diverted to the designated nearby oxidation ponds. A stormwater management study should be undertaken to establish if these ponds need to be re-sized to accommodate expected flood volumes. -Evidence of lining of the hazardous waste cells - Evidence of compacted bases	- ECO - Traditional Authority/ Leadership	- Experienced contractors to install any lining systems - Funds for construction of these various components - Funds for drilling monitoring wells and maintaining the groundwater quality monitoring program	-Has not been effective as no evidence of stormwater diversion channels and networks leading to the existing oxidation ponds were observed; also no monitoring wells or water quality data was available; No evidence of basin lining

		remove any sediments and to prevent it from silting up. -Ensure that the basin of the hazardous waste basin is either compacted to a low permeability base or is completely lined to eliminate risk of possible leachate leakage. -The base of all compartments as well as the upstream side slopes of all waste compartments should be compacted adequately to reduce permeability of the foundation soils and thereby counter or minimize risk of groundwater pollution. - Install a comprehensive network of pipes and collection systems to efficiently capture leachate from the landfill and prevent it from overflowing - Drill at least 2 monitoring wells downstream of the facility for groundwater quality monitoring and implement a groundwater monitoring program	inside basins and on the inside slopes - Evidence of well maintained diversion ditches upstream of the facility - Monthly records of groundwater quality			

Construction dust & emissions from vehicles and unpaved access roads)	- Minimize the release of harmful pollutants such as dust and fumes - Protect public health and safety in so far as air quality is concerned	-During construction, in extremely windy days, a reasonable amount of water should be used to suppress the dust that may be emanating from certain site areas (limited to the site only) or certain parts of the local utilized gravel roads that is generating a lot of dust. -HNTC must install and commission 4 dust buckets, 2 downwind (northeast) and 2 upwind (southwest) around the new dumpsite to collect dust generation data during construction - Avoid idling of vehicles and machinery to limit generation of fumes -All access roads leading to the site should have speed limits of no more than 40km/h to minimise the amount of dust generated by the vehicles, which will minimise air quality concerns to any potential receptors, i.e., residents to the northeast of the site. -Dust masks, eye protective glasses and other respiratory personal protective	-Dust suppression measures implemented -Visible efforts to curb dust -Annual interviews with residents at the north-eastern side of the site to establish and understand any concerns they may have regarding dust generation - Evidence of dust monitoring buckets on site	-ECO -Construction Contractors - Traditional Leadership	- Funds to implement dust control measures	-Moderately affected as it is understood that dust suppression was performed with water suppression during construction -Workers provided with relevant PPE gloves and masks **- HNTC needs to install dust monitoring buckets as a minimum as recommended herein.**

		equipment (PPE) such as face masks should be provided to the workers on site operating or working at the excavated areas, where they may be exposed to dust. -Tall trees and shrubs downwind (northeast of the site) should be preserved to capture dust and minimize adverse visual impacts from nearby homesteads -The vehicles carrying dusty materials should be covered with nets to prevent materials being blown from the vehicle. -The transportation of project materials, equipment and machinery should be limited to certain days of the week only as so to reduce dust generated by heavy vehicles in the area. -Project vehicles and heavy machines should not be left idling when not in use, such that they emit air polluting gases. -Project vehicles and machinery should be maintained through regular servicing to				

		ensure that they do not release harmful and air polluting fumes while on and off site.				
Odour and smoke control	- Minimize odour sources - Effective implementation of physical barriers including covering waste	-Minimize volume of waste to the dumpsite by promoting waste reduction, reuse and recycling programs - Regularly cover waste with soil to minimize exposure of decomposing waste to air and subsequently reduce odour generation - Leachate is typically a significant source of odorous compounds. Proper leachate collection, diversion to nearby oxidation ponds and subsequent treatment A positive involvement and inclusion of waste pickers: their organization, education and management, could massively reduce the waste burning onsite. This would also aid in reducing the amount of waste to be burned. - Limit burning to small, actively turned, well-ventilated fires, rather than fires in large poorly	-Odour and smoke minimization measures evidently implemented -Visible efforts to curb odour and burned waste -Odour control caps in odour problematic compartments -Annual interviews with residents at the down wind side of the site concerning odour and smoke issues.	-ECO - Traditional leadership	Funds to implement and maintain the management measures proposed	-Has not been quite effective to date as complains of bad smell were raised during stakeholder consultation meeting held **- The ECO of HNTC needs to enforce the proposed measures and ensure they are maintained upon implementation**

		ventilated dumps or containers.				
Occupational injuries from mishandling equipment, cut injuries by broken bottles, bad smells, inhaling of toxic gases from burned waste, etc)	- Minimize uncontrolled entry to the dumpsite to ensure public health and safety are not compromized	-The site workers, waste pickers and visitors should be equipped with appropriate and sufficient PPE (hand gloves, safety googles, boots, earplugs, overalls, face masks, hard hats, etc). -Workers should be provided with refresher training on machinery and equipment use. -Trainings and ''know-how'' to use PPE should be provided to all workers as part of their induction. -The site should be equipped with a minimum of two first aid kits. Two or three of the onsite presonnel should be trained on how to administer first aid. -Access to areas with dangerous waste such as broken glass and sharp scrap metals should be restricted to authorized workers only. -No one should be allowed inside the dumpsite compartments	- Well maintained system for restricted and controlled access to the facility -Adequate PPE for all workers, waste picker and visitors -Regular health screening and training of workers -Annual health and safety audits done -Health & Safety is part of the inductions -Health & Safety Education	-Proponent / Project Manager -ECO -Contractor -PRO	-Safety & Health Awareness pamphlets and Trainings -First aid kits -PPE -Nearest Health facility (Centre) -Warning signs onsite in both English and Oshiwambo languages - Funds to implement and maintain all the above	-Moderately effective as there has been access control, but there is room for improvement in so far as provision of suitable PPE for onsite personnel and strict access control are concerned

		with dangerous waste without proper supervision of the authorized site workers/personnel. -Prevent entry of children -The site to be equipped with "danger" or "cautionary" signs for any potential danger or risk area on site.				
Public and animal health and safety	Health and Safety	-A razor mesh fence should be erected around the site to secure it and prevent possible unauthorized access by local children and animals to risk their lives. -Empty hazardous containers that may be used onsite should be securely kept on site, inside the boundary wall before transporting the containers to the nearest approved waste site. -No under 18 should be allowed inside the dumpsite, even for recycling.	-Mesh fence constructed -Empty hazardous containers and waste containers kept within the site fence boundaries and out of public reach. -Community Health & Safety Education	-Project Manager -ECO -Construction Contractor	-Security personnel -Gate control -Warning signs onsite in both English and Oshiwambo languages	-Effective -Mesh wire erected around the dumping site plus access control gates -Only HNTC members and workers allowed on site
The increase in traffic flow	- Control flow and movement of traffic in the dumpsite to ensure safe and controlled disposal of	-The transportation of project materials, equipment and machinery should be limited to twice a week only.	-All drivers are appropriately licensed and given site-specific induction on the operational rules	-Project Manager -Constructor -ECO	- Onsite security or HNTC personnel to enforce the recommended	-Moderately effective as there has been on site security personnel to implement the recommended measures -HNTC picks up waste from the town 5 times a week

	waste, and or construction materials	-Drivers of all project phases' vehicles should be in possession of valid and appropriate driving licenses and vehicles should be road worthy. -Vehicle drivers should adhere to the road safety rules. -The vehicle drivers should comply with the access and load control at the site gate / entry. -The vehicles should be driven slowly (40km/hour or less), and on the lookout for livestock and people. -The site access roads should be well equipped with road signs condition to cater for vehicles travelling to and from site, especially during the construction phase when heavy vehicles are present. -Vehicle drivers should only make use of designated site access roads and parking areas provided. -Vehicle drivers should not be allowed to operate vehicles while under the influence of alcohol.	-Drivers are adhering to onsite rules and regulation. -All vehicles are roadworthy. Heavy trucks are limited day travelling only and twice a week.		control measures	

		-The Proponent should make provision for safe materials and equipment offloading and loading areas on sites. -No project related vehicles should be parked outside the project site boundary or demarcated areas. -Truck movements should be limited to weekdays only between the hours of 8am and 5pm.				
Accidental disturbance and destruction of archaeological or heritage objects and sites	- Prevent and minimize any disturbance to archaeology and heritage resources	-Caution should be exercised when carrying out excavations associated with the project activities to limit and/ or prevent any disturbance to archaeological/heritage remains. -Any chance finds of archaeological and heritage resources or objects should not be disturbed but are to be reported to the HNTC Environmental/Safety officer asap, and subsequently or National Heritage Council offices for further instructions and actions. -Workers should be educated to not destroy	-Clear and well documented records for the preservation of all artefacts that are discovered around project area -Records of cessation of work upon discovery/unearthing of unknown or known heritage objects	-Construction Contractor -ECO	- Resources to mobilize any Heritage specialists in case of any archaeological and or heritage chance finds	-Effective -No archaeological artefacts were discovered or reported from the site so far

		or throw away but report to the ECO or Project Manager of any unknown object found/discovered on site. -The Project Manager should familiarise themselves with the National Heritage Council's Chance Find Procedure of the Namibian National Heritage Council and if uncertain about the procedure should receive training by a suitably qualified archaeologist with respect to the identification of archaeological/heritage remains and the procedures to follow if such remains are discovered throughout the project activities' duration.				
Soil contamination	- Limit and minimize spatial extent and degree of soil pollution of soils in close proximity to the dumpsite	- Controlled and strict discharge of waste within designated basins - Clean up any spillages of hydrocarbons or leachate - Restrict temporary storage and flow of leachate to specific	- No evidence of soil pollution by hydrocarbons or leachate	- Contractors - ECO - Traditional Leadership	- Funds to construct and maintain all recommended measures -Trained staff and consultants to preserve soil	- Due to lack of lined bases and slopes, leachate migration is likely to be a going concern. - It is recommended that the HNTC needs to find nearby sources of natural clay to use for base lining of the dumpsite basins and basin slopes

		controlled zones within the facility - Compact or line bases of basins with hazardous substances to limit and prevent loss of leachate that could contaminate soils				
Compromise of public health through disease transmission by vectors	- Limit exposure of general public in the vicinity of the waste dumpsite to disease carrying vectors	- Strict enforcement of odour management practices to help limit vectors like mosquitors and rodents that can carry and transmit infectious diseases	- Regular and periodic healt inspections of onsite personnel and personnel from homesteads in the immediate vicinity	- Eco - Traditional leadership	- Funds for periodic medical check-ups and examinations	- Measures had not been fully implemented at time of this renewal. Hence there is great room for improvement.

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5.2 Recommended Adaptive Environmental Monitoring and Reporting Program

The objectives of the recommended adaptive environmental monitoring programme can be summarised as follows:

- To help comply with changing regulations, project design requirements;
- To continuously develop an inventory of site-specific baseline data as more data and information becomes available.
- To measure physical disturbance and subsequent recovery
- To understand the cumulative impacts, as well as the recovery of the affected biophysical environment and
- To provide a basis on which the Environmental Management report can be amended and updated on a going basis.

5.3 Key Roles and Responsibilities in Implementing the EMRP

The successful implementation of the Environmental Management Plan (EMRP) for the dumping site requires a coordinated approach among various stakeholders. The roles and responsibilities of these parties must be clearly defined to ensure effective management of environmental impacts throughout the project lifecycle, from construction to decommissioning.
Below is an outline of the key roles and responsibilities for implementing the EMRP:

Table 5-2. Roles and Responsibilities of Key Project Stakeholders for the effective implementation of impact management measures

Responsible Person	EMP/EMRP Responsibilities
Helao Nafidi Town Council (Proponent) – Project Manager for the Dumpsite	-Responsible to enforce EMP implementation by contractors and site employees. - Sole implementation of the Rehabilitation Plan (measures) for the existing waste dumpsite in the Town. -responsible for implementing the Closure Plan for the existing dumpsite.
HNTC's Environmental Control Officer (ECO)	-Implement, review and update the EMP. -Ensure all reporting and monitoring required under EMP is undertaken, documented and distributed as needed -Conduct environmental site training (toolbox talks) and inductions with the support of an environmental consultant. -Conducts environmental audit at work site with the support of environmental consultant. -Investigate and Close out all non-conformances. -Ensure materials being used on site are environmentally friendly and safe, and are in compliance with recommendations outlined herein. - Maintain a record of types and volumes of waste disposed into the facility

Public Relations Officer (PRO)	-Liaising between the affected properties / landowners and neighbours and the Proponent. -Ensure effective communication with stakeholders, media (if necessary) and the public. -Organising and overseeing public relations activities, Managing public relations issues. -Collaborating with personnel and maintaining project-related open communication among project personnel, Proponent and property owners.
The Department of Environmental Affairs and Forestry (DEAF)	-Approve the EMP and any amendments to the EMP, if any. -Approve reports of environmental issues and non-conformances as issued. -Review and approve environmental reports submitted as part of EMP implementation - Undertake regular inspections of the facility
Site Engineer & Contractor(s)	-Control and monitor actions required by the EMP. -Document and report all environmental issues to the ECO. -Ensure documented procedures are followed and records kept on site, and any complaints are passed onto the management within 24 hours of receiving the complaint.
Sites Workers/Employees (waste pickers/ sorters, guards)/Visitors	-Follow requirements of the EMP relevant to them as directed by Project Manager and site Contractor. -Report any potential environmental issues to the Project Manager / Site Engineer site and other possible non-conformances. - Correctly sort waste - Ensure different wastes are disposed into the correct cells - Guide public users of the facility to ensure they disposed waste in correct paddocks - Control and regulate access into the out of the facility
Technical Staff / Consultants	The project's technical experts and consultants responsible for monitoring various technical parameters related to designs and safe operation of the dumpsite & associated facilities, waste & water resources management, soil preservation/ protection, operations & maintenance and employee/ contractor health.
The Local Community	-The community is responsible to ensure that the Proponent and their employees and contractors alike are adhering to the EMP, this includes raising their grievances to the Proponent for addressing. - Make constructive suggestions for the facility effective safe operation of the facility

6 CONCLUSIONS AND RECOMMENDATIONS

Overall, due to the already highly disturbed nature of the project site, this EMP focused more on understanding and establishing how adverse impacts can be corrected and how positive impacts can be maintained and/ or enhanced going forward. Several impact corrective and enhancement measures and controls have been proposed herein, with guidance on how those controls can be implemented and monitored. A list of key parties responsible for the successful implementation and enforcement of these measures and controls is also provided herein.

Based on the impact assessment carried out for this site and project, the residual environmental and social risks of significance include:

- Risks of contamination and pollution to on-site soils, as well as alteration of soil structure. This arises from possible spillage of hydrocarbons, ingress of leachate which could lead to soil pollution.
- Loss in aesthetic value of the concerned area due to changes in the landscape caused by storage of blocks, various solid wastes; construction of waste disposal cells; creation of access tracks; landscaping through backfilling.
- Health risks to the general public due to storage of waste, possible leachate infiltration, generation of odour if not adequately managed, and possible transmission of diseases by vectors.
- Risks of injuries to personnel at the facility.
- Potential grievances and disputes from neighbouring land owners.
- Continuation of pressure exerted on various natural resources such as habitats, water resources, etc.
- Proximity of the facility to the youth empower garden, triggering concerns around whether the 2 can co-exist.

Simultaneously, numerous opportunities have been identified from the current and future operations of the facility, which have had and/ or are anticipated to contribute positively and have positive residual impacts. These include:

- Sustainability of direct jobs at the dumpsite for security personnel, waste sorters and waste pickers, as well as temporary jobs associated with construction.
- Acquisition and local development of skills specific to waste management, thus ensuring local capacity building.
- Sustainability of business and economic empowerment opportunities arising from revolving tender allocated to local entities.
- If properly and professionally managed, this facility could be a flagship project for other town councils in Namibia.
- Sustained earning of income to the Traditional Authority through land lease fees
- Opportunity to decommission the existing facility which is in the middle of town

In light of these findings, it is apparent that the operation of this new dumpsite would bring out about some adverse impacts although the impact assessment suggests that most of these impacts can be mitigated or reduced if soundly managed through implementation of the

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various impact management recommended herein. The various impact management measures proposed in this report can be adopted to correct the significant negative impacts already incurred, and to maintain or enhance the various current and possible future positive impacts associated with the operation of the factory.

On this basis, it is recommended that an Environmental Clearance Certificate can be renewed; subject to the implementation of the impact management and monitoring measures outlined in this report.

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