



Excel Dynamic Solutions (Pty) Ltd



Environmental Management Plan (EMP): FOR THE EXISTING ORUTYANDJA CEMETERY IN OPUWO TOWNLAND, KUNENE REGION.

ECC Application number: APP: **007530**

Document Version: **Draft**



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May 2026

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1. INTRODUCTION

1.1 Project Background and Locality

Opuwo Town Council (hereinafter referred to as OTC or the Proponent) holds responsibility for the planning and management of adequate burial spaces within the Town. The Orutyandja cemetery as shown in **(Figure 1)** is approximately 0.142 Hectares and has been in operation for a number of years without an Environmental Clearance Certificate. This situation is common to many waste management facilities operated by local authorities across Namibia, which were established either before or shortly after the promulgation of the Environmental Management Act No. 7 of 2007 and its subsequent Environmental Impact Assessment (EIA) Regulations of 2012. As such, the existing facility is required to obtain an ECC to comply with the environment legislature.

The construction of cemeteries is a listed activity under Section 27 of the Environmental Management Act (EMA) No. 7 of 2007, meaning it may not be undertaken without a completed EIA and a valid ECC. The Proponent appointed Excel Dynamic Solutions (Pty) Ltd (Environmental Consultant), to Lodge an ECC application to the Department of Environmental Affairs and Forestry (DEAF) at the MEFT for evaluation and consideration for the ECC.

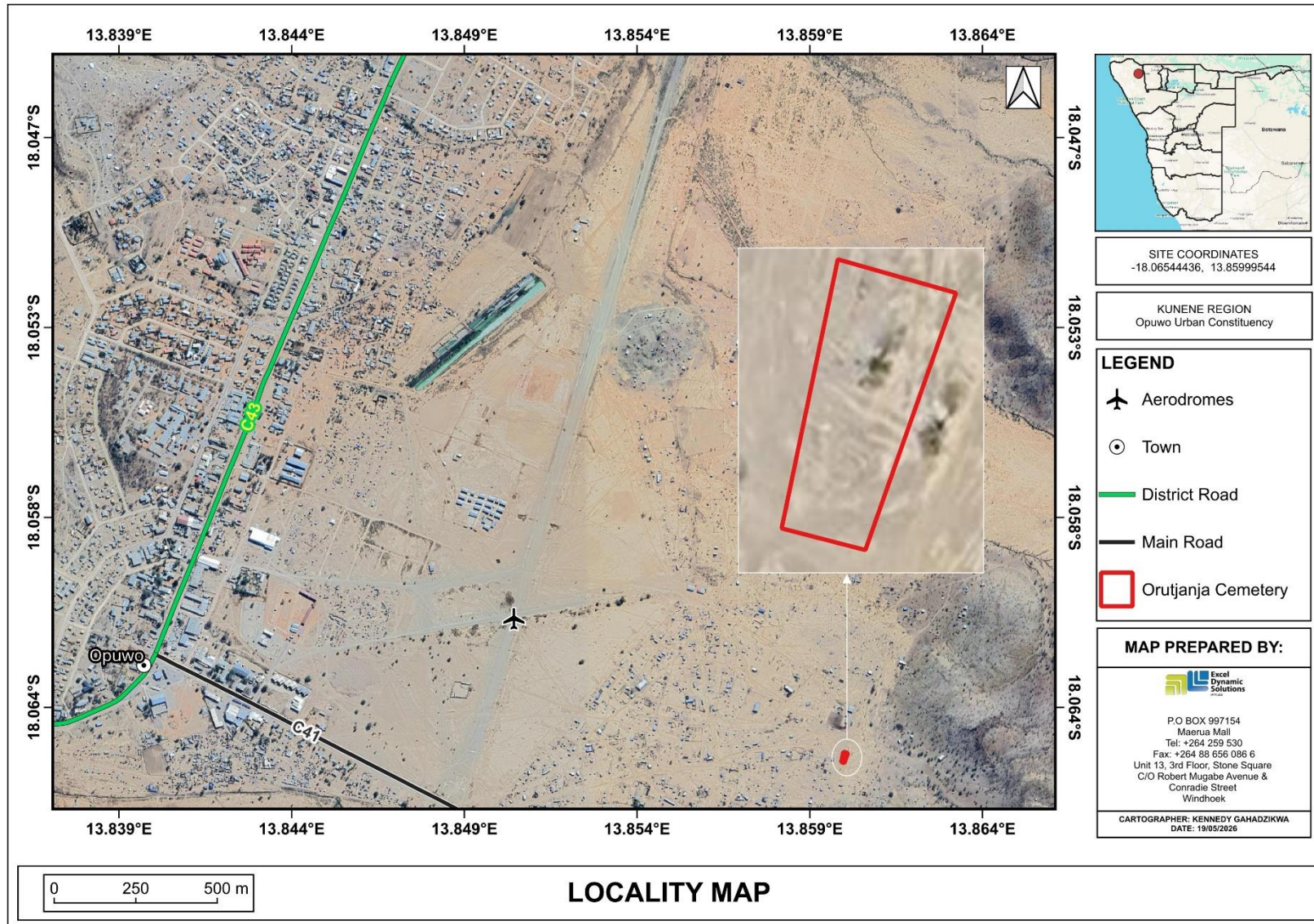


Figure 1: Locality map showing the Cemetery.

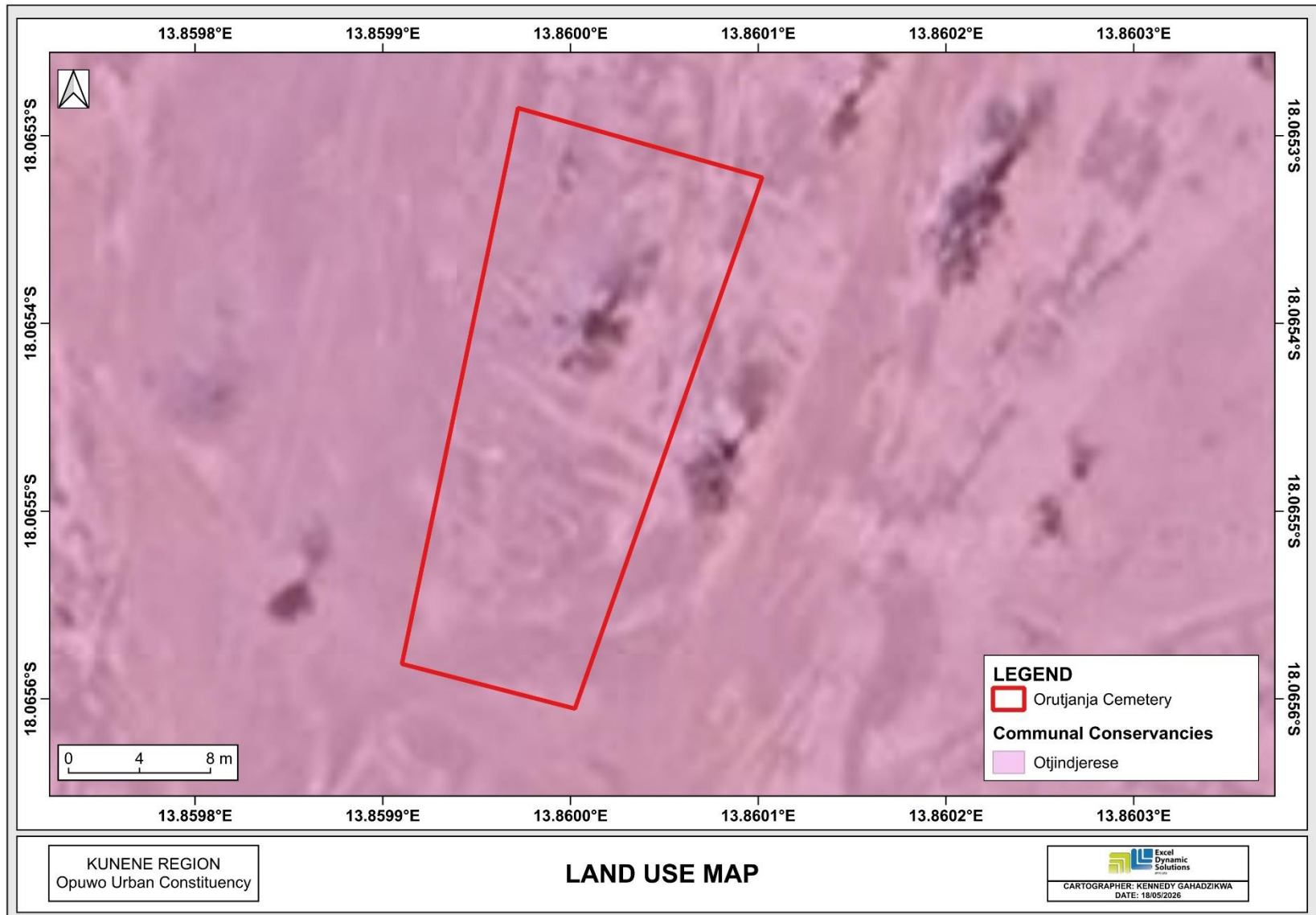


Figure 2: Land use map around the cemetery.

1.2 The Need for Environmental Clearance Certificate (ECC)

The Environmental Management Act (Act No. 7 of 2007) (EMA) and its 2012 EIA Regulations list activities that need an Environmental Clearance Certificate (ECC). Cemetery facilities is one of the listed activities that requires an EIA study and or for existing facilities, an Environmental Management Plan (EMP) should be developed. The relevant listed activities to the Town's cemetery are as follows:

"11. OTHER ACTIVITIES

- *Listed Activity 11.2 Construction of cemeteries, camping, leisure and recreation sites."*

The Cemetery has been operating without an ECC therefore to ensure that the cemetery obtain full compliance with the environmental legislation, the Proponent has appointed Excel Dynamic Solutions (Pty) Ltd (Environmental Consultant), to Lodge an ECC application to the Department of Environmental Affairs and Forestry (DEAF) at the MEFT for evaluation and consideration for the ECC. In other words, the ECC Application accompanied by the Draft Environmental Management Plan (EMP) will be submitted and evaluated by the Environmental Commissioner for consideration of the ECC.

1.3 The Need for Environmental Management & Closure Plan

Regulation 8(j) of the EIA Regulations (2012) requires that a draft Environmental Management Plan (EMP) shall be included as part of the Environmental Assessment (EA) (please note that since the site is already in operation, there was no EA conducted nor scoping report for it). 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."

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 address project changes and/or environmental conditions and feedback from compliance monitoring.

The purpose of this document is, therefore, to guide environmental management throughout the operational (and maintenance), and closure/discontinuance phases:

- **Operation and Maintenance Phase** - This is the phase during which the cemetery will be operational and maintained by the Opuwo Town Council. In other words, this is the phase during which the Town Council provides burial services.

- **Closure (Discontinuance)** – Cemetery do not necessarily require decommissioning, but rather closure once they reach full capacity. Therefore, when cemetery reaches full capacity in future, the Town council will be required to close it and identify a new site.

This EMP has been prepared for the management of potential impacts associated with its operations, maintenance and possible decommissioning. The Town Council will be required to operate the cemetery in accordance with the management measures provided in the EMP and adhere to the ECC conditions set by the Environmental Commissioner.

The description of the project activities is briefly provided under the next heading (Chapter 2).

2. THE DESCRIPTION OF PROJECT ACTIVITIES

Opuwo currently has numerous existing cemeteries, some of which are located in close proximity to one another. Despite their physical nearness, these cemeteries are often distinctly divided according to family graves, social status, and gender. The Orutyandja cemetery is part of the existing cemetery within the Opuwo townland boundaries, the division of which reflects the diverse religious and cultural beliefs of the communities they serve.

This EMP was developed based on the site visit and assessment, consulted literature, and information provided by the Proponent. The site visit was conducted on the 08th of February 2025 and 23-25 January 2026. The establishment date of the cemetery is unknown, however some of the oldest grave's date back predating the town's proclamation on 12 February 2004.

2.1 Resources, Services and Infrastructure

Maintenance activities will be undertaken at the cemetery to ensure the provision of burial services to residents.

The required resources and services will be provided by the Town Council as presented below:

- **Human Resources:** Human resource will be required during different phases: maintenance phase & operational phase and possible Closure phase
- **Health and Safety:** Adequate and appropriate Personal Protective Equipment (PPE) will be provided to all personnel working at the cemetery. Standard first aid kits will be readily available on the cemetery.
- **Hazardous waste:** Any fuel/oils spills occurring during maintenance and operation should be carefully removed and stored in standardized containers for disposal at approved hazardous waste management facilities.
- **Solid waste:** Sufficient waste containers will be made available at the cemetery during all phases, as well as waste containers set up appropriately for public use at the cemetery.
- **Site accessibility:** The cemetery is accessible via tracks that divert from the C43 road.
- **Site Security:** Boundary perimeter will be put in place during maintenance phase.

2.2 The Challenges and Improvements for the Cemetery Operations

The following challenges are experienced by the Town Council and these are as follows:

- **Not properly managed, privately or by the council:** Some burials are conducted without complying to the Town Council procedures.
- **Some graves not properly marked:** Some graves remain unmarked except for basic stones, a possible could be as families may struggle to afford proper memorials plaques

or fear that installed markers could be stolen or damaged.

- **Not following a uniform layout:** Burial arrangements are influenced by religious and cultural traditions. It's common for graves to be separated according to age, social status, family lineage and religious diversity.
- **Lack of Ablution facilities:** No ablution facilities exist on the cemetery therefore the ablution facilities will need to be installed on the cemetery.
- **Site Security:** Most cemetery perimeter fencing should be put in place to avoid unauthorized access.

2.3 Opportunities for the Opuwo Town Council

The following recommendations and opportunities have been identified to maximize the cemetery's existence.

- **Compliance and Fees:** OTC to provide enhanced burial services in accordance with legal legislature that comply with legal frameworks.
- **Boundary wall:** A perimeter boundary wall should be put in place to improve security.

The summary of legal requirements that govern the project activities are provided under the next chapter.

3. LEGAL FRAMEWORK: APPROVALS, LICENSES AND OR PERMITS

The project and its associated activities are governed by certain legislative and legal requirements that are necessary to consider and outlined herein. This is done in terms of institutional (local) and national perspective. Therefore, the summary of these relevant legal requirements and these that require permitting and licensing for certain project activities are presented under Table 1.

Table 1: The legal requirements and permits and licenses applicable to the project activities

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this Project
Environmental Management Act EMA (No 7 of 2007): <u>Regulated under the Ministry of Environment, Forestry and Tourism (MEFT)</u>	The Act and its 2012 EIA Regulations aim to ensure that the potential impacts of the development on the environment are carefully considered. The Act aims at promoting sustainable management of the environment and use of natural resources. The Environmental Management Act (EMA) is broad; it regulates land use development through environmental clearance certification and/or Environmental Impact Assessments. The Act provides for the clearance certification for "11.2 Construction of cemeteries, camping, leisure and recreation sites."	The EMA should inform and guide this EMP development and its implementation for: -ECC Amendment/Transfer and Renewal: Should the Proponent consider amending/Transferring the Project activities
Environmental Impact Assessment (EIA) Regulations Government Notice 28-30 (Government Gazette 4878) of February 2012: <u>Regulated under the MEFT</u>	for "11.2 Construction of cemeteries, camping, leisure and recreation sites." <i>9.2 Any process or activity which requires a permit, license or other form of authorization, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, license, or authorization or which requires a new permit license or authorization in terms of a law governing the generation or release of emissions, pollution, effluent, or waste" which is relevant to the Project.</i>	- The ECC needs to be renewed every 3 years (at least 3 months prior to its expiry date). The applications as deem necessary should be made with the Department of Environmental Affairs and Forestry (DEAF) as follows: Office of the Environmental Commissioner: Mr. Timoteus Mufeti Tel: 061 284 2701

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this Project
	<p>For new projects, the Act requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27). Regardless to the site, mitigation measures should be developed for implementation during operations.</p> <p>Details requirements for public consultation within a given environmental assessment process (Government Notice No. 30 Section 21).</p> <p>The details the requirements for what should be included in an Environmental Scoping Report (Government Notice No. 30 S8) and an EIA Report (Government Notice No. 30 Section 15).</p>	
<p>Pollution Control and Waste Management Bill: <u>Regulated under the MEFT.</u></p>	<p>The bill aims to “prevent and regulate the discharge of pollutants to the air, water and land” Of particular reference to the Project is: Section 21 “(1) Subject to sub-section (4) and section 22, no person shall cause or permit the discharge of pollutants or waste into any water or watercourse.”</p> <p>Section 55 “(1) No person may produce, collect, transport, sort, recover, treat, store, dispose of or otherwise manage waste in a manner that results in or creates a significant risk of harm to human health or the environment.”</p>	<p>The Proponent and their workers/contractors should continue with the good waste management work (directly or indirectly) to ensure that the waste does not cause environmental threat and degradation.</p> <p>No permit or license required.</p>
<p>Soil Conservation Act (No 76 of 1969): <u>Regulated under the Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWLR)</u></p>	<p>The Act makes provision for the prevention and control of soil erosion and the protection, improvement and conservation of soil, vegetation and water supply sources and resources, through directives declared by the Minister.</p>	<p>Duty of care must be applied to soil conservation and management measures must be included in the EMP. This is mainly aimed at soil disturbance through unnecessary creation of new tracks and pollution from project related activities.</p>

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this Project
<p>The National Heritage Act (No. 27 of 2004): <u>Regulated under the Ministry of Education, Arts and Culture through National Heritage Council (NHC) of Namibia</u></p> <p>The National Monuments Act (No. 28 of 1969): <u>Regulated under the NHC</u></p>	<p>To provide for the protection and conservation of places and objects of heritage significance and the registration of such places and objects; to establish an NHC; to establish a National Heritage Register; and to provide for incidental matters.</p> <p>This impact is likely during site preparation for the maintenance of the cemetery when there is a potential of inadvertent unearthing and damage of heritage resources such as old and unmarked graves, for instance.</p> <p>The Act extends the protection of archaeological and historical sites to private and communal land and defines permit procedures regarding activities at such sites.</p>	<p>Should heritage resources (e.g., artefacts, human remains/bones in the subsurface etc.) are discovered at some point on and /or around the site, these should be reported to the National Heritage Council of Namibia for relocation.</p> <p>Contact: Mrs. Agnes Shiningayamwe (Director)</p> <p>Or Mr. Kavenaa Tjiuro (Regional Heritage Officer)</p> <p>Tel: 061 301 903</p>
<p>Public Health Act (No. 36 of 1919): <u>Regulated under the Ministry of Health and Social Services</u></p>	<p>Section 119 states that “no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health.”</p>	<p>The Proponent and all its employees should ensure compliance with the provisions of these legal instruments. This includes the provision of health and safety measures, wearing of Personal Protective Equipment (PPE), Health & Safety Trainings, etc.</p> <p>This safety and health of the Town’s community.</p> <p>No permit or license required.</p>
<p>Health and Safety Regulations GN 156/1997 (Government Gazette 1617): <u>Regulated under the Ministry of Health and Social Services</u></p>	<p>Details various requirements regarding health and safety of labourers.</p>	
<p>Public and Environmental Health Act No. 1 of 2015: <u>Regulated under the Ministry of Health and Social Services</u></p>	<p>To provide a framework for a structured uniform public and environmental health system in Namibia; and to provide for incidental matters.</p>	

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this Project
<p>Road Traffic and Transport Act, No. 22 of 1999: <u>Regulated under the Ministry of Works and Transport (Roads Authority of Namibia)</u></p>	<p>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.</p>	<p>The Proponent should consider applying for a formal access road permit to the cemetery. This permit is to be applied from Roads Authority. Contact: Mr Eugene de Paauw (Roads Authority – Specialist Road Legislation) Tel.: 061 284 7027</p>
<p>Water Act 54 of 1956: <u>Regulated under the Ministry of Agriculture, Water and Land Reform</u></p>	<p>The Water Resources Management Act 11 of 2013 is presently without regulations; therefore, the Water Act No 54 of 1956 is still in force:</p> <ul style="list-style-type: none"> -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)). 	<p>The protection (both quality and quantity/abstraction) of water resources should be a priority.</p>
<p>Water Resources Management Act (No 11 of 2013): <u>Regulated under the Ministry of Agriculture, Fisheries, Water and Land Reform</u></p>	<p>Ensure that the water resources of Namibia are managed, developed, used, conserved and protected in a manner consistent with, or conducive to, the fundamental principles set out in Section 66 - protection of aquifers, Subsection 1 (d) (iii) provide for preventing the contamination of the aquifer and water pollution control (Section 68).</p>	
<p>Atmospheric Pollution Prevention Ordinance (1976): <u>Regulated under the Ministry of Health and Social Services</u></p>	<p>This ordinance provides for the prevention of air pollution and is affected by the Health Act 21 of 1988. Under this ordinance, the entire area of Namibia, apart from East Caprivi, is proclaimed as a controlled area for the purposes of section 4(1) (a) of the ordinance.</p>	<p>The project and related activities should be undertaken in such a way that they do not pollute or compromise the surrounding air quality.</p>

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this Project
<p>Hazardous Substance Ordinance, No. 14 of 1974: <u>Regulated under the Ministry of Health and Social Services</u></p>	<p>The ordinance provides for the control of toxic substances. It covers manufacture, sale, use, disposal and dumping as well as import and export. Although the environmental aspects are not explicitly stated, the ordinance provides for the importing, storage, and handling.</p>	<p>The Proponent should handle and manage the storage and use of hazardous substances on the cemetery so that they do not harm or compromise the surrounding area environment.</p>
<p>Local Authorities Act No. 23 of 1992: <u>Regulated under the Ministry of Urban and Rural Development</u></p>	<p>To provide for the determination, for purposes of local government, of local authority councils; the establishment of such local authority councils; and to define the powers, duties and functions of local authority councils; and to provide for incidental matters. This includes the management of waste.</p>	<p>The Opuwo Town Council is the responsible Local Authority of the area, and the project Proponent. Regardless, they should ensure that the cemetery activities follow the Act and its Regulations, as relevant to the project.</p>
<p>Labour Act (No. 6 of 1992): <u>Regulated under the Ministry of Labour, Industrial Relations and Employment Creation (MLIREC)</u></p>	<p>MLIERC is aimed at ensuring harmonious labour relations through promoting social justice, occupational health and safety and enhanced labour market services for the benefit of all Namibians. This ministry ensures effective implementation of the Labour Act No. 6 of 1992, specifically its Regulations, No. 156 Labour Act, 1992: Regulations relating to the health and safety of employees at work.</p>	<p>The Proponent should ensure that all cemetery operations, and maintenance works, do not compromise the safety and welfare of workers. No permit or license required.</p>

4. EMP IMPLEMENTATION: ROLES & RESPONSIBILITIES

The OTC, as the project Proponent has the overall responsible for the implementation of the EMP and the associated Closure Plan. The roles and responsibilities of all delegates/parties involved in the effective implementation of this EMP are set in 2.

Table 2: The list of responsible parties and their roles in implementing the EMP & Closure Plan

Role (Person and or Institution)	Responsibilities
The Proponent (Opuwo Town Council)	<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 the cemetery in terms of compliance with this EMP and issuing fines for contravening EMP provisions.
Safety, Health & Environmental (SHE) Officer / Environmental Health Officer (EHO)	<ul style="list-style-type: none"> -Conducting cemetery inspections with respect to the implementation of this EMP (monitor and audit the implementation of the EMP). -Advising the Proponent on the removal of person(s) and/or equipment not complying with the provisions of this EMP. -Undertaking an annual review of the EMP and recommending additions and/or changes to this document.
Site Manager / Operator	<ul style="list-style-type: none"> -Collaborate with the SHE Officer to ensure the implementation of the EMP, especially on the technical aspects regarding the site upgrading/maintenance and operations. -Collaborate with the SHE Officer / EHO to ensure the implementation of the EMP, especially on the technical aspects regarding the cemetery upgrading and maintenance works.
Upgrading/Maintenance Contractor	<ul style="list-style-type: none"> -Collaborate with the SHE Officer and Site Manager to ensure the implementation of the EMP, especially on the technical aspects regarding the upgrading/maintenance works. -Ensure that their works on the cemetery comply with the EMP components and requirements relevant to their works.

5. ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURES

5.1 Identification of Key Impacts

The key potential impacts associated with the cemetery operations and maintenance thereof are as follows:

<u>Positive impacts</u>	<u>Potential Negative impacts</u>
<p>-Social: Gathering of families to give their loved ones a respectful and dignified burial process in a comfortable place.</p>	<p>-Noise & Disturbances: Funeral activities (e.g., processions, gatherings) may disrupt nearby residents.</p>
<p>-Employment: Creation of jobs to the locals (permanent / contractual work for cemetery operation & maintenance and security).</p>	<p>-Archaeological resources impact through the inadvertent unearthing of archaeological sites.</p>
<p>-Controlled pollution and improved management of cemeteries in the Town by using the drafted EMP for the cemetery.</p>	<p>-Occupational & public Health and safety: improper handling of site materials and equipment may cause health and safety risks and operational</p>
<p>-Cultural & Spiritual Value: Provides a sacred space for mourning and remembrance.</p>	<p>-Vehicular traffic safety</p>
	<p>-Environmental pollution (waste generation).</p>
	<p>-Visual impact.</p>
	<p>-Impact on water resources (groundwater pollution).</p>
	<p>-Physical land (soil) disturbance.</p>

The impacts will be mitigated by the implementation of measures provided under the next section.

5.2 Environmental Management and Mitigation Measures for the Cemetery.

The management actions provided under this section are aimed at avoiding the above-listed potential negative impacts, where possible. Where it is impossible to avoid the impacts, mitigation measures are provided to reduce the impacts' significance. The measures are recommended for the Maintenance & operational phase (Table 3) and Decommissioning / discontinuance (Table 4).

Table 3: The Environmental management and mitigation measures for the Operational & Maintenance Phase.

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Upgrading and Operational & Maintenance Phase					
EMP implementation and training	Lack of EMP awareness and implications thereof	<ul style="list-style-type: none"> -The implementation of this EMP should be monitored. The site should be inspected, and a compliance audit done throughout <u>the project activities, monthly.</u> -Implement EMP non-compliance penalty system onsite. 	<ul style="list-style-type: none"> -Compliance monitoring conducted bi-annually and should be recorded. -The ECC is renewed every 3 years -Bi-annual reports -Records of EMP training conducted. 	-SHE Officer / EHO	Throughout the project cycle
Water and power supply	Lack of basic services and infrastructure	-A water (tap) and power supply lines should be installed on the cemetery.	-The site is equipped with sufficient facilities and services	-Site Manager	-During cemetery maintenance

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
		<p>-The ablution facilities comprising toilets (minimum 2 toilets for women and 2 toilets for men) should be installed at the operating cemetery.</p>			
Soils	Physical soil / land disturbance and loss of topsoil during cemeteries upgrade	<p>-The topsoil that was stripped from certain cemetery areas to enable project works should returned to its initial position.</p> <p>-Cemeteries soils should not be disturbed, if not needed or related to the actual upgrading works.</p> <p>-All cemetery maintenance pits should be backfilled, and areas rehabilitated.</p> <p>-Use techniques to minimize compaction of soil, such as restricting access during wet conditions, and using protective boarding and low ground pressure machinery.</p> <p>- Conduct routine inspections of disturbed areas to identify and address erosion, sedimentation, or land degradation issues promptly.</p> <p>- Prevent contamination of soil through the proper storage and handling of fuels, oils, cement, and other construction materials.</p>	<p>-No stockpiled soils after completion of works</p> <p>-No new erosion gullies.</p>	-SHE Officer / EHO	Throughout the project cycle

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<p>Site outbreaks</p>	<p>Fire outbreaks risks</p>	<p>Accidental fire risks</p> <ul style="list-style-type: none"> -Warning signs of “NO SMOKING” and “NO THROWING USED CIGARETTES’ should be clearly written (in English and <i>Otjiherero</i>) and pasted at cemetery entrance. -The cemetery should be equipped with at least two fire extinguishers at the security gate and should be serviced accordingly. The personnels working at the cemetery should be trained on how to use the fire extinguishers. -No open fires to be created within and around cemetery premises. -The contact details of fire services should be readily and visibly displayed at the entrance office/security control. -All personnel must be sensitized about responsible fire protection measures and good housekeeping such as the removal of flammable materials (e.g., rubbish, dry vegetation, and hydrocarbon-soaked soil) within and around cemetery premises. -Restrict vehicle movement and machinery operation in areas with excessive dry vegetation during hot and windy conditions where feasible. -Prohibit open fires, uncontrolled burning, and unauthorised smoking within and around cemetery premises. 	<p>-No open fires by site personnel and visitors</p> <p>-Fire extinguishers are readily available and up to date with service</p>	<p>-Proponent -SHE Officer / EHO -Site Manager</p>	<p>Throughout the project cycle</p>
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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Site safety and security	Compromising site security and safety	<ul style="list-style-type: none"> -The cemetery boundary should be established to a high brick structured wall or stone wall to ensure the security of the cemetery. -A modern security gate and security control point should be installed at the site entrance. -The cemetery should be equipped with 24-hour security surveillance in case of opportunistic activities such as theft and vandalism. 	-The site wall and security measures are in place.	<ul style="list-style-type: none"> -Proponent: Site Manager -Site Maintenance Contractor 	During site maintenance stage
Occupational and community health and safety	Project related injuries and other health and safety related issues on personnel and locals	<ul style="list-style-type: none"> -Project personnel and contractors should be inducted provided on the health & safety measures, including the risks of mishandling equipment, materials on site and health and safety risk associated with their respective jobs. -The contact details of ambulance and other extensive health care services should be readily and visibly displayed on the cemetery (at the gate). -A fully furnished first aid kit should always be on the cemetery and train 2 or 3 site personnel on administering first aid. -Personnel should be properly equipped with appropriate personal protective equipment (PPE) where necessary and depending on the job undertaken onsite. -The heavy vehicle, equipment and machinery should be properly secured to prevent any harm or injury to the Proponent’s personnel. -An emergency preparedness plan should be compiled, and all personnel appropriately trained. 	<ul style="list-style-type: none"> -Comprehensive health and safety plan for all project activities compiled. -Occupational Health and Safety Personnel -Health and Safety Trainings -Fully equipped first aid kit onsite -Trained workers to administer first aid 	<ul style="list-style-type: none"> -Proponent -SHE Officer / EHO -Site Maintenance Contractor 	Throughout the project cycle

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
		<p>-Personnel should not be allowed to drink alcohol prior to and during working hours nor allowed on the cemetery when under the influence of alcohol (leading to health & safety risks).</p>			
Water Resources Use	Over-utilization of water resources	<p>-Water reuse/recycling methods should be implemented as far as practicable.</p> <p>-If there will be water storage tanks on the cemetery, these should be inspected daily to ensure that there is no leakage, resulting in water loss.</p> <p>-Water conservation awareness and saving measures training should be provided to all the project workers in both phases so that they understand the importance of conserving water and become accountable</p>	<p>-No water leakages from cemetery water storage tanks</p> <p>-Water is recycled where possible</p>	<p>-SHE Officer / EHO</p> <p>-Site maintenance Contractor</p>	Throughout the project life cycle
Soils and water resources	Soils and water resources pollution	<p>-Personnel should be sensitized on the impacts of soil pollution.</p> <p>-Project machines and equipment should be equipped with drip trays to contain possible oil spills.</p> <p>-The soil composition should be prepared with recycled materials if necessary (crushed materials).</p> <p>-Polluted soil should be removed immediately and put in the designated hazardous waste storage containers for later disposal.</p> <p>- Minimise the use of harmful pesticides, herbicides, or chemicals for vegetation control and apply environmentally friendly alternatives where feasible.</p> <p>-Maintain drainage systems to control stormwater runoff and prevent ponding, erosion, and the transport of contaminants into nearby watercourses.</p>	<p>-No complaints of pollutants on the soils due to project activities</p> <p>-No visible oil spills on the ground or pollution spots.</p> <p>-Sufficient waste containers provided on the cemetery</p> <p>-Non-permeable material to cover the ground surface at areas where hydrocarbons and potential pollutants are</p>	-SHE Officer / EHO	Throughout the project life cycle

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
		<ul style="list-style-type: none"> -Polluted soil must be collected and transported away from the cemetery 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 offsite. -All operational vehicles on the cemetery must undergo routine inspections for oil and fluid leaks. Any leaks detected must be contained and remediated immediately using environmentally safe methods to prevent soil and water contamination. 	utilized during cemetery maintenance.		
Biodiversity	Loss Fauna and Flora	<ul style="list-style-type: none"> -Avoid the killing or disturbing of all kinds of animals, birds and reptiles encountered onsite. -Avoid harvesting or cutting down of local vegetation. -Environmental awareness on the importance of biodiversity preservation should be provided to workers. -Retain non-disruptive native plants to protect soil and wildlife, and obtain permits before handling protected species. 	-No killing or disturbance of faunal biodiversity	-SHE Officer / EHO -Site Manager	Throughout the project cycle

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<p>Road use and safety</p>	<p>Increase in vehicular traffic flow</p>	<ul style="list-style-type: none"> -The transportation of materials to and from cemetery should be limited to twice a week only. -Ensure that the access roads are frequently maintained and have sufficient road signs. -Vehicles drivers should be in possession of valid and appropriate driving licenses and adhere to the road safety rules. -Drivers should drive 40km/hour and be on the lookout for people on roadsides, especially children. -Vehicle's drivers should not be allowed to operate vehicles while under the influence of alcohol. 	<ul style="list-style-type: none"> -No complaints from members of the public regarding vehicular traffic issues related to the project activities. -All vehicle drivers are appropriately licensed and possession of valid driving licenses. 	<ul style="list-style-type: none"> -Proponent -SHE Officer / EHO -Site Manager -Site maintenance Contractor 	<p>Throughout the project life cycle</p>
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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Archaeology and heritage	Accidental disturbance of archaeological or heritage objects	<ul style="list-style-type: none"> -Identification of unmarked graves or any archaeological significant resources within the cemetery should not be disturbed but are to be reported to the project Town Council who then informs the National Heritage Council for relocation. -Cemetery personnel must be sensitized to exercise and recognize “Chance Finds Heritage” –Appendix A. -Adhere to the provisions of Section 55 of the National Heritage Act in event significant heritage and culture features are discovered while conducting cemetery maintenance works. -When the removal of topsoil and subsoil on the cemetery for operational works, the cemetery should be monitored for subsurface archaeological materials by Environmental personnel. 	-Preservation of all artefacts and objects that are discovered on and around the project site during earthworks	<ul style="list-style-type: none"> -Site Manager -SHE Officer / EHO -Site maintenance Contractor 	As and when required, i.e., and during cemetery works
Littering and waste management (general waste and sanitation)	Environmental Pollution	<ul style="list-style-type: none"> -Maintain separate waste bins for different wastes waste should be in separate waste bins. -Project personnel should be sensitized to dispose of waste in a responsible manner and not to litter. -Ensure that there are no wastes left onsite. -All domestic and general operational waste produced daily should be contained onsite until such that time it is removed by the waste removal staff / contractor. -No waste may be buried or burned on the cemetery. 	<ul style="list-style-type: none"> -No visible litter within and around the Project area owing to the Project -Provision of sufficient waste storage containers -Waste management awareness 	<ul style="list-style-type: none"> -Site Manager -SHE Officer / EHO -Site Maintenance Contractor 	Throughout the project cycle

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	Wastewater (sewage)	-Ensure that there are sufficient toilets (portable) for the upgrading and flushing toilets for the operational phase. -Sewage and wastewater generated on the cemetery during cemetery upgrade should be properly contained for transportation to the Town's sewage treatment facility.	-Adequate toilet and basic ablution facilities on site.	-Site Manager -SHE Officer / EHO	Throughout the project cycle
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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
		-Open defecation on /around the site is strictly prohibited.			
Air Quality	Dust generation, fumes (poor air quality)	-Vehicles should only be driven at the recommended cemetery speed to avoid dust generation on the cemetery and surroundings. -The heavy vehicles and fumes generating equipment (during cemetery maintenance) should not be left idling when not in use. -Avoid heavy trenching on the cemetery during windy times of the day during cemetery maintenance	-No complaints from the public about vehicle emissions and dust generation. -Visible efforts to curb dust	-Site Manager -SHE Officer / EHO -Site maintenance Contractor	Throughout the project cycle
Noise	Nuisance	-Noise from project related vehicles and equipment should be at acceptable levels. -The project activities should not be carried out during the night or before 08h00 in the morning (until 17h00) and should be carried out during weekdays only. -Working hours for cemetery maintenance works should be restricted to between 08h00 and 17h00 to avoid noise generated by equipment and the movement of vehicles before or after hours. -Cemetery workers and contractors should be equipped with personal protective equipment (PPE) such as earplugs to reduce exposure to excessive noise.	-No complaints from local communities such as neighbours about excessive noise from site -Noise protective equipment for workers	-Site Maintenance Contractor -Site Manager -SHE Officer / EHO	Throughout the project cycle

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<p>Visual</p>	<p>Visual nuisance due to the cemetery presence</p>	<p>-Consider using vegetation along the cemetery wall/fence to give the cemetery a unique and beautiful look (aesthetics). -All the available options to improve the aesthetic of the cemetery should be considered so that it blends in with the surrounding area or at least enhance it for a better appeal to the community. -The aesthetic trees should be taken care of by watering and trimming them when necessary. -The cemetery should be kept neat and tidy from waste.</p>	<p>-The cemetery is vegetated to beautify the place.</p>	<p>-Proponent -Site Manager</p>	<p>During upgrade and ongoing (during maintenance)</p>
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6. CLOSURE PLAN FOR THE CEMETERY IN THE FUTURE

According to (Myślińska, Szczepański, & Dłubakowski, 2021) the decommissioning of cemeteries seems to be an issue that arouses moral opposition among many. Due to constantly expanding cities, the topic of decommissioning or re-using cemetery space arises often, and changes to the functions of cemetery occur regardless of the moral assessment of this practice.

It should be noted that decommissioning a cemetery does not imply removing the buried bodies, but this is a cessation of burying bodies in the cemetery once capacity has been reached, i.e., there is no space for new graves. Therefore, decommissioning (closure) in this case would mean discontinuance to bury bodies and maintaining the cemetery despite no new burials are made. This is because the cemetery will continue to hold memories of families who have their deceased family members or loved ones resting in the cemetery. Cemeteries are also heritage sites for generations to come, as they would be keen to know where some of their great-great grandparents (ancestors) were raised to rest. Table 4 below contains few measures to be taken by the Opuwo Town Council when closing the cemetery, once they reach capacity (discontinuing operations on the cemetery).

Table 4: The Management measures for the Closure (Decommission) of the Cemetery.

Aspect	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Closure (Discontinuance) Phase				
Cemetery Wall/Fencing and associated infrastructure	<ul style="list-style-type: none"> -The cemetery fencing should be maintained to ensure the security of the cemetery and protect the site from theft and vandalism. -The water supply line, and lightings should remain operational after cemetery closure. -The cemetery wall (fence) should stay intact and should be maintained. -The security control should remain to ensure that the inactive cemetery is not vandalised or there is no theft of cemetery infrastructures and grave accessories. 	-The cemetery is looked after as it was during the operational phase	-Proponent	Upon cessation of cemetery operations

Aspect	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Graves and cemetery access	<ul style="list-style-type: none"> -The graves should remain intact and undisturbed, as the families will continue to visit their loved ones' final resting places (graves) in the cemeteries. -The grave markings should be maintained by informing the next of kin of the need to revamp their loved ones' graves. -Access to the cemetery for visits and grave cleaning/revamping by family members or loved ones should be strictly done from 08am to 5pm only. No visitations or grave maintenance after 5pm. -No unauthorized gatherings within the cemetery premises. 	<ul style="list-style-type: none"> -The community adheres to the measures provided -No cemetery entrance by the public after 5pm 	-Proponent	Upon cessation of site operations
Infrastructure and structures: Decommissioning of services and infrastructures	<ul style="list-style-type: none"> -Dismantling of structures such as offices and materials that are no longer required upon cemetery closure. These, if still in usable condition can be utilized for other purposes in the Town. If cannot be reused, the materials should be taken to the Town Council dumpsite. -All the waste generated from leading to the last days on site should be transported to the Town Council dumpsite. -Transport all equipment to offsite storage facilities. 	<ul style="list-style-type: none"> -Structures are used for other purposes in the Town -Waste transported to an approved dumpsite 	-Proponent -SHE Officer / EHO	At the end of the site operations

7. ENVIRONMENTAL MONITORING

To ensure the effectiveness of recommended environmental management and mitigation measures in minimizing or eliminating adverse impacts, ongoing monitoring and reporting are essential. Monitoring allows for the early detection of any new adverse impacts that may arise during project operations, enabling timely implementation of corrective measures. The proponent's designated personnel (such as an Environmental Health Officer or SHE Officer) must compile bi-annual environmental monitoring reports and submit them to the DEAF for archiving, as stipulated in the ECC conditions. Additionally, these reports must undergo an annual audit by an Independent Environmental Consultant, particularly before applying for an ECC renewal, to verify compliance and effectiveness.

8. REFERENCES

- GRN. (2007). *Environmental Management Act, 2007 (Act No. 7 of 2007)*. Retrieved from Government Gazette of the Republic of Namibia.: <https://www.meft.gov.na/files/files/Environmental%20Management%20Act%207%20of%202007.pdf>
- Kinahan, J. (2020). *ARCHAEOLOGICAL DESK ASSESSMENT OF PROPOSED MINING LICENCE 230 LOCATED ON FARMS*. Retrieved from The Eis: https://the-eis.com/elibrary/sites/default/files/downloads/literature/1806_Archaeology_Heritage%20Assessment_Mining%20Licence%20230%20application%20for%20dimension%20stones%20on%20EPL%203783%20situated%20at%20Trekkopje%20Farm%20120.pdf
- Myślińska, A., Szczepański, J., & Dłubakowski, W. (2021). The Impact of Decommissioning Cemeteries on the Urban Ecosystem. *Sustainability*, 13(69).

APPENDIX A: CHANCE FINDS PROCEDURE (Kinahan, 2020)

Areas of proposed project 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.

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).

Archaeological material must NOT be touched. Tempering with the materials is an offence under the heritage act and punishable upon conviction by the law.

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
- e) If operating machinery or equipment stop work
- f) Identify the site with flag tape
- g) Determine GPS position if possible
- h) 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 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.

APPENDIX B: EXAMPLE OF THE RECOMMENDED SITE WALL



APPENDIX C: SITE VISIT FROM THE CEMETERIES



Old Katutura



New Katutura



Otuzemba

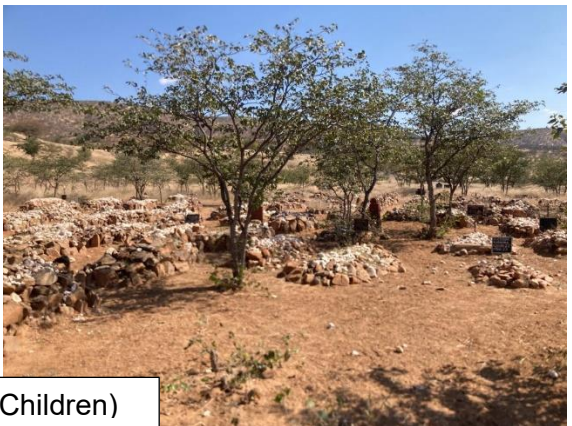


(Ondungee)





Otjorongondo



Old Katutura (Children)

