SERJAHGE CONSULTANTS
CC/2020/0010007

Environmental Decommissioning and Infrastructure Replacement Management Plan for:

The Existing MTC Network Site (20m camouflaged (mono pole artificial palm tree)) in Ocean View Suburb, Swakopmund, Erongo Region

ECC Application No.: **APP-007278**

Document Version: **Final for Submission**

Project Owner: **Mobile Telecommunications Limited**

P. O. Box 23051 Windhoek, Namibia

make the connection mtc

April 2026

DOCUMENT INFORMATION

Title: Environmental Decommissioning and Infrastructure Replacement Management Plan for the Existing MTC Network Site (20m camouflaged (mono pole artificial palm tree)) in Ocean View Suburb, Swakopmund, Erongo Region

Prepared by:

Author / Environmental Assessment Practitioner (EAP):	Fredrika N. Shagama
Qualifications:	Ph.D. Student: Civil Engineering (Geotechnics & Environmental Hydrogeology), VSB - Technical University of Ostrava, Czech Republic; Post Graduate Diploma in Environmental Studies, International University of Management (IUM), Namibia; MSc. Geological Engineering (*cum laude*) with a focus in Hydrogeology, VSB - Technical University of Ostrava, Czech Republic; BSc. Geological Engineering, VSB - Technical University of Ostrava, Czech Republic
Professional Affiliations:	Environmental Assessment Professionals of Namibia (EAPAN) - Practitioner (Membership No. 183); Geoscience Council of Namibia (GSCN) – Geoscientist, Registration No. GSCN/G-057; International Association of Hydrogeologists (IAH) - Full Member, Membership No.139790; Namibian Hydrogeological Association (NHA) – Member
Contact Details:	Mobile No.: +264 81 749 9223; fredrika@seriaconsultants.com Postal Address: P.O. Box 27318, Windhoek, Namibia
Signature:	
Date:	14/04/2026
DETAILS OF THE PROJECT DECOMMISSIONING PROPONENT	
Proponent Name & Address	Mobile Telecommunications Limited; P. O. Box 23051, Windhoek, Namibia
Name of Representative & Role:	Tuhafeni Erastus; Coordinator: Network Ops
Contact details:	0813251726, TErastus@mtc.com.na
Signature:	
Date:	13/04/2026

SERJA'S STATEMENT OF INDEPENDENCE

As the Appointed Environmental Consultant to prepare this Environmental Decommissioning and Infrastructure Replacement Management Plan for the Existing MTC Network Site (20m camouflaged (mono pole artificial palm tree)) in Ocean View Suburb, Swakopmund, Erongo Region, Serja Hydrogeo-Environmental Consultants cc declare that we:

- do not have, to our knowledge, any information or relationship with Mobile Telecommunications Limited (*MTC Namibia*), the Ministry of Environment, Forestry and Tourism (MEFT)'s Department of Environmental Affairs and Forestry (DEAF) that may reasonably potentially influence the outcome of this Environmental Decommissioning and Infrastructure Replacement Management Plan (EDIRMP) and the subsequent Environmental Clearance Certificate applied for.
- have knowledge of and experience in conducting environmental assessments, the Environmental Management Act (EMA) No. 7 of 2007, and its 2012 Environmental Impact Assessment (EIA) Regulation, as well as other relevant national and international legislation, guidelines, policies, and standards that govern the project activities as presented herein.
- have performed work related to the decommissioning of the tower site objectively, even if the results in views and findings, or some of these may not be favourable to MTC Namibia.
- declare that we do not have and will not have any involvement or financial interest in the undertaking of the project activities, other than remuneration (professional fees) for work performed to develop the Decommissioning Plan as an Environmental Assessment Practitioner (EAP).

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

…….

Signature:

Fredrika N. Shagama: Principal Environmental Assessment Practitioner & Hydrogeologist

Date: April 2026

TABLE OF CONTENTS

DOCUMENT INFORMATION i
TABLE OF CONTENTS iii
LIST OF FIGURES iv
LIST OF TABLES iv
LIST OF ABBREVIATIONS v
1 INTRODUCTION 1
1.1 Project Background and Location 1
1.2 The Need for Decommissioning the Tower Site 2
1.3 The Need for Infrastructure (Network Tower) Replacement 4
1.4 The Aim of the Environmental Decommissioning and Infrastructure Replacement Management Plan (EDIRMP) 4
1.5 The Need for an Environmental Clearance Certificate (ECC) 5
1.6 Limitations of the Environmental Decommissioning and Infrastructure Replacement Management Plan 6
2 BRIEF DESCRIPTION OF THE PROJECT ACTIVITIES 7
2.1 Decommissioning Activities 7
2.1.1 Planning, permits, and mobilization: about 5 to 10 days 8
2.1.2 Disconnection and Equipment Removal: Duration of 1 to 2 days 8
2.1.3 Tower dismantling: Duration of 3 to 5 days 8
2.1.4 Site Rehabilitation and Restoration: Duration 3 to 5 days 9
2.2 Tower Replacement (New Tower Construction) 9
2.3 Required Resources and Services 10
2.3.1 Human resources and accommodation 10
2.3.2 Accommodation 10
2.3.3 Water supply 10
2.3.4 Power and fuel supply (for machinery and equipment) 10
2.3.5 Accessibility (roads) 11
2.3.6 Equipment and machinery 11
2.3.7 Vehicles 11
2.3.8 Waste management 11
2.3.9 Occupational Health and Safety 11
2.3.10 Potential Accidental Fire Outbreaks 11
2.4 Decommissioning and Rehabilitation of Disturbed Site Areas 12
3 LEGAL FRAMEWORK: PERMITTING AND LICENSES 13

4 IMPLEMENTATION RESPONSIBILITIES FOR THE ENVIRONMENTAL DECOMMISSIONING & INFRASTRUCTURE REPLACEMENT MANAGEMENT PLAN 16
5 ENVIRONMENTAL MANAGEMENT MEASURES 18
5.1 Key Identified Potential Negative Impacts 18
5.2 Environmental Management and Mitigation Measures 19
5.3 Aim of the Environmental Management Actions 19
5.3.1 Planning and Design Management and Mitigation Measures 19
5.3.2 Environmental Management and Mitigation Measures: Decommissioning and Tower Replacement (Construction) 23
5.3.3 Management and Mitigation Measures for Management of Rubble, Scrap Metal, and Cables 31
5.3.4 Management and Mitigation Measures for Management of Hazardous Waste 33
5.3.5 Management and Mitigation Measures for Site Rehabilitation and Restoration 36
5.4 Post-Decommissioning: Final Checks and Documentation 38
ANNEXURE 1: CHANCE FINDS PROCEDURE (AFTER KINAHAN, 2020) 39

LIST OF FIGURES

Figure 1-1: Locality map of the tower site in Swakopmund's Ocean View Area, Erongo Region 1
Figure 1-2: The Ocean View Tower site position on the constituency map (in the Swakopmund Constituency) 2
Figure 1-3: Photos of the current (dilapidated) status of the Ocean View tower: A- The monopole tower with artificial leaves/branches and rectangular antenna boxes and support infrastructure (cabinet); B- Dilapidated front of the tower equipment cabinet; C & D- Dilapidated tower base foundation equipment ... 3
Figure 2-1: Photos of the current (dilapidated) status of the Ocean View tower and associated supporting infrastructure (accessories) 7

LIST OF TABLES

Table 3-1: List of legal requirements and permits for the tower decommissioning and replacement activities 13
Table 4-1: The implementation responsibilities for the tower's Environmental Decommissioning and Infrastructure Replacement Management Plan 16
Table 5-1: Planning and design phase management, and mitigation measures 20
Table 5-2: Tower Decommissioning and Replacement phase management and mitigation measures 23
Table 5-3: Management and Mitigation Measures for Waste Management (Rubbles, Scrap Metals, and Cables) 31
Table 5-4: Management and Mitigation Measures for Waste Management of Hazardous Waste 34
Table 5-5: Site Rehabilitation and Restoration Post-Decommissioning and Tower Replacement works: Management and Mitigation Measures 36

LIST OF ABBREVIATIONS

CRAN:	Communications Regulatory Authority of Namibia
DEAF:	Department of Environmental Affairs and Forestry
EAP:	Environmental Assessment Practitioner
EAPAN:	Environmental Assessment Professionals of Namibia
ECC:	Environmental Clearance Certificate
EDIRMP:	Environmental Decommissioning and Infrastructure Replacement Management Plan
EIA:	Environmental Impact Assessment
EMA:	Environmental Management Act
GG:	Government Gazette
GN:	Government Notice
MEFT:	Ministry of Environment, Forestry and Tourism
MSDS:	Material Safety Data Sheets
NHC:	National Heritage Council (NHC) of Namibia
PPE:	Personal Protective Equipment

1 INTRODUCTION

1.1 Project Background and Location

Mobile Telecommunications Limited (*MTC Namibia*) proposes to decommission and replace the existing 20m camouflaged (mono pole artificial palm tree) network tower in Swakopmund's Ocean View Suburb, Erongo Region. The tower site was constructed in 2004, and is located at these GPS coordinates -22.633780, 14.532400, as shown on the map in Figure 1-1. The tower site falls within the Swakopmund Constituency, as shown on the land use map in Figure 1-2.

The tower structure was constructed with artificial branches and leaves to resemble a palm tree to reduce visual impact in the residential area, while still providing mobile network coverage. The artificial palm tree supports cellular base station equipment (the rectangular boxes with antennae mounted near the top) used for mobile communication.

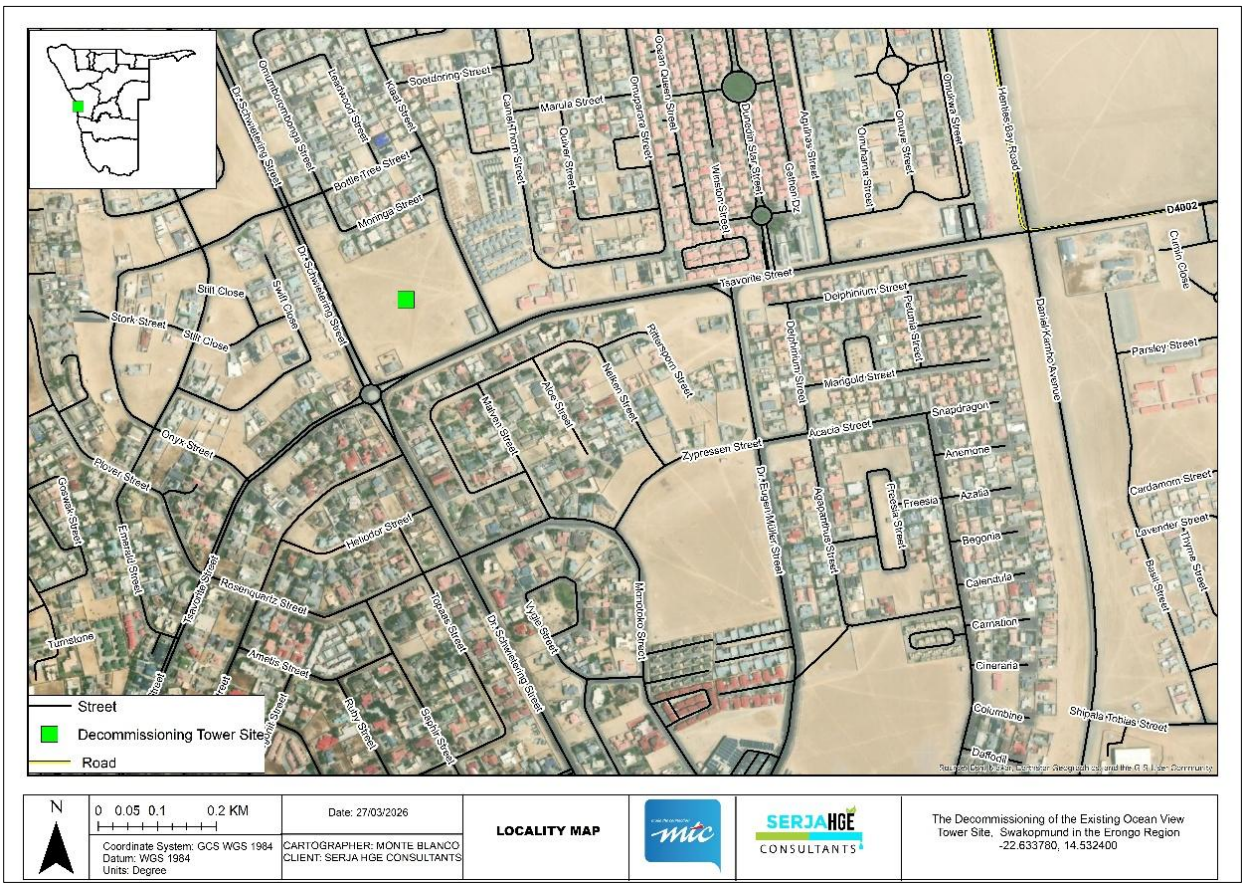

Figure 1-1: Locality map of the tower site in Swakopmund's Ocean View Area, Erongo Region

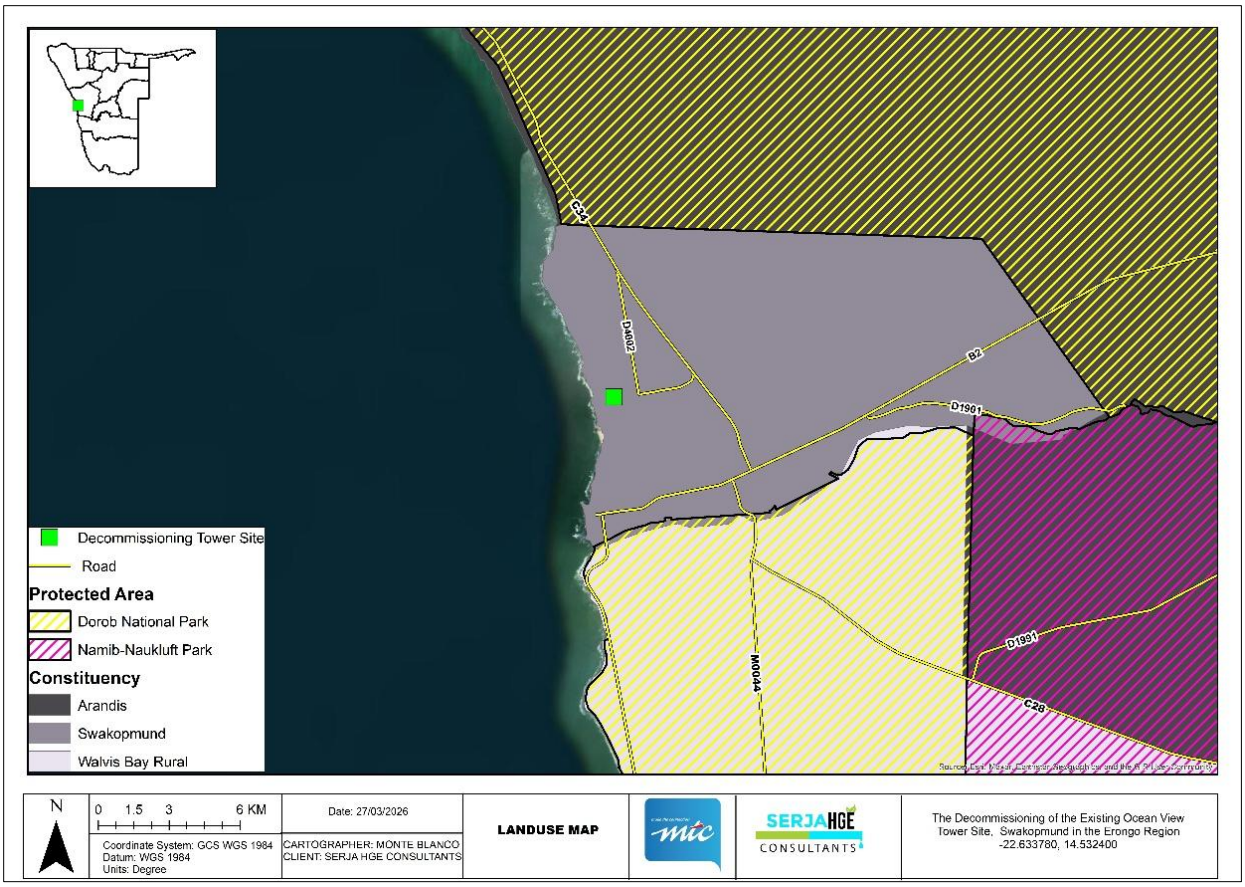

Figure 1-2: The Ocean View Tower site position on the constituency map (in the Swakopmund Constituency)

1.2 The Need for Decommissioning the Tower Site

The tower needs to be decommissioned as it is dilapidated, as shown in some photos shown in Figure 1-3.

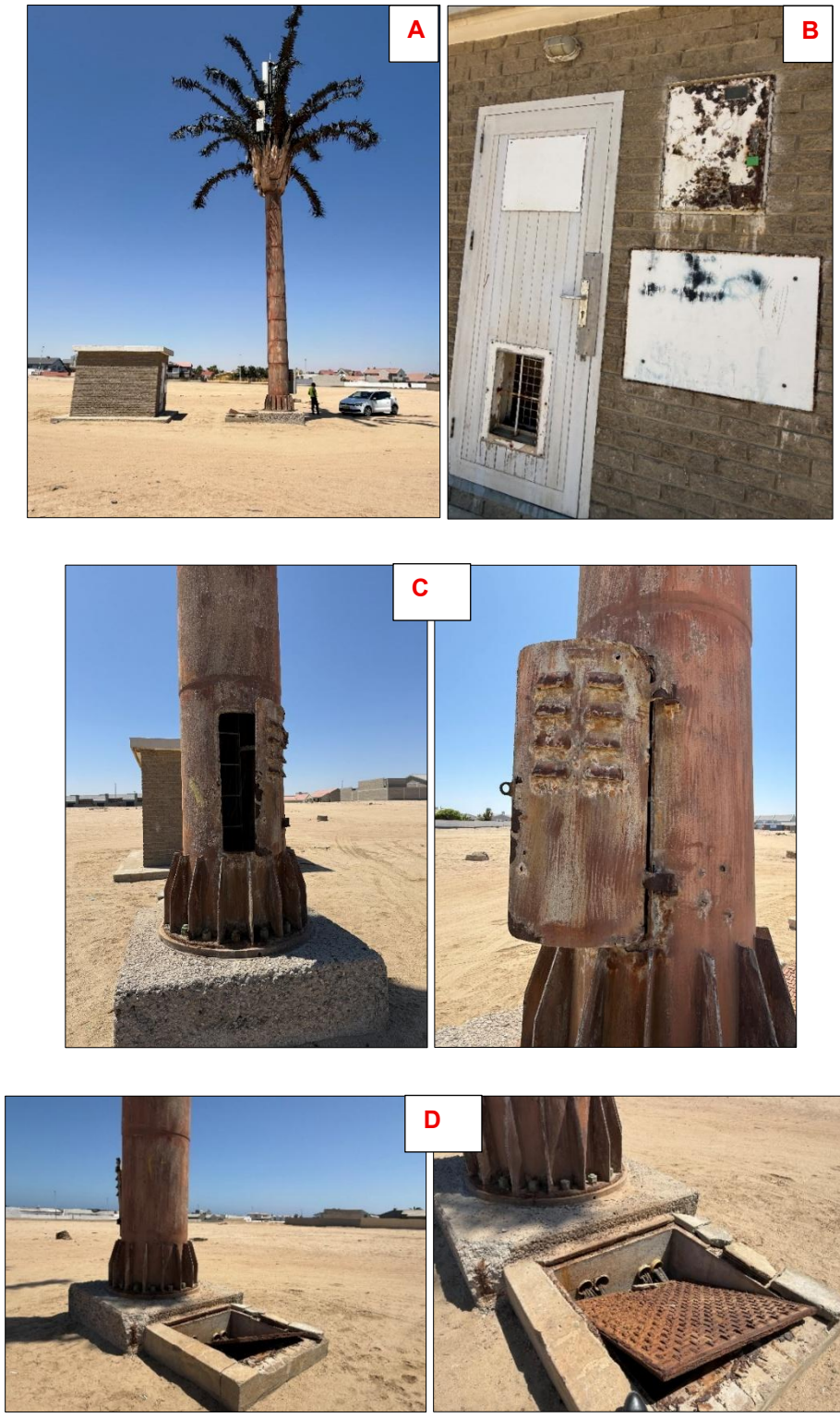

Figure 1-3: Photos of the current (dilapidated) status of the Ocean View tower: A- The monopole tower with artificial leaves/branches and rectangular antenna boxes and support infrastructure (cabinet); B- Dilapidated front of the tower equipment cabinet; C & D- Dilapidated tower base foundation equipment

Summary of Site Findings/Observations: The artificial branches and leaves of the tower are falling off (see on the ground), and there are signs of severe rusting and damage to the tower base (Figure 1-3). The front side of the equipment cabinet (which houses and protects the critical electronic equipment running the network) also looks old, with fading writing (Figure 1-3B).

1.3 The Need for Infrastructure (Network Tower) Replacement

The replacement of old and dilapidated network tower sites in Swakopmund's Ocean View area is essential to ensure reliable, safe, and modern telecommunications infrastructure in the Town. Aging infrastructure (such as tower structures) is highly prone to mechanical failure, corrosion, and instability. These issues potentially pose safety risks to neighbouring communities and maintenance personnel, particularly in densely populated areas such as the Ocean View Suburb.

Moreover, outdated and dilapidated infrastructure limits the capacity and quality of network coverage, resulting in poor connectivity, dropped calls, and reduced data speeds, which negatively affect residents, businesses, and emergency communication services in the area. Thus, the decommissioned tower and associated infrastructure will need to be replaced soon after to ensure uninterrupted telecommunication services in this part of the Town and surrounding areas relying on the same network for mobile and data services.

1.4 The Aim of the Environmental Decommissioning and Infrastructure Replacement Management Plan (EDIRMP)

Regulation 8 of the Environmental Management Act (EMA) (7 of 2007) Environmental Impact Assessment Regulations (2012) requires that a draft environmental management plan be included as part of an Environmental Assessment (EA) process. A 'management plan' is defined as:

"…a plan that describes how activities that may have significant environmental effects on the environment are to be mitigated, controlled, and monitored."

An environmental management plan is one of the most important outputs of the environmental assessment process as it synthesises all the proposed mitigation and monitoring actions, set to a timeline and with specific assigned responsibilities. The plan provides a link between the impacts identified in the environmental assessment process and the required environmental management on the ground during project implementation. It is important to note that an environmental management plan is a legally binding document, and a person who contravenes the provisions of this EDIRMP may face imprisonment and/or a fine. The plan is a living document and should be amended to adapt to address project changes and/or

environmental conditions and feedback from compliance monitoring. In this instance, an EDIRMP is required for the decommissioning and replacement of the tower. Therefore, the purpose of this document is to guide environmental management throughout the following life-cycle stages of decommissioning. The project phases addressed in this EDIRMP are as follows:

- Planning and design: the period during which preliminary legislative and administrative arrangements are carried out in preparation for the ground preparatory works of tower decommissioning and replacement. This will include notifying the local stakeholders and facilitating the procurement process (the appointment) of the Decommissioning & Tower Replacement Contractor by MTC Namibia.
- Closure (Decommissioning): the period during which the tower site will be decommissioned and cease to operate.
- Replacement of the old tower structure and associated supporting infrastructure: The stage during which the decommissioned tower structure is replaced with a new one alongside new associated supporting infrastructure to ensure continued better and improved mobile services (voice and data services) in the area.

1.5 The Need for an Environmental Clearance Certificate (ECC)

Telecommunication structures and related infrastructures are among the listed activities that may not be undertaken without an ECC under the Environmental Management Act (EMA) (2007) and its 2012 Environmental Impact Assessment (EIA) Regulations.

The listed activities relevant to this project, as per EIA regulations, are:

Listed Activity 10: Infrastructure

- *Listed Activity 10.1 The construction of-*

  (g) Communication networks, including towers, telecommunication, and marine telecommunication lines and cables;

  (j) Masts of any material or type and any height, including those used for telecommunication, broadcasting, and radio transmission, but excluding - (i) flag poles and (ii) lightning conductor poles.

The tower was erected in 2004, before the promulgation of the EMA and its 2012 EIA regulations in 2007 and 2012, respectively. Therefore, it has never been cleared environmentally. Therefore, to comply with the EMA and its Regulations and ensure environmental sustainability, MTC Namibia has appointed independent environmental consultants (Serja Hydrogeo-Environmental Consultants CC (Serja HGE Consultants)) to develop this document and submit it to the Environmental Commissioner at the Ministry of

Environment, Forestry and Tourism (MEFT). This plan, alongside the application/notice of old tower closure and replacement, will be submitted to MEFT for evaluation and consideration of the ECC.

1.6 Limitations of the Environmental Decommissioning and Infrastructure Replacement Management Plan

This Environmental Decommissioning and Infrastructure Replacement Management Plan has been drafted with the acknowledgment of the following limitations:

- The document has been drafted based on the site visit, assessment, and information provided by MTC Namibia. It was assumed that all the information and data presented was true and accurate.
- The mitigation measures recommended in this document are based on the potential impacts identified based on the project description, site observations, and documents consulted.
- Should the scope of the proposed activities of the project change, this will trigger changes in the appropriate mitigation measures accordingly.

2 BRIEF DESCRIPTION OF THE PROJECT ACTIVITIES

The anticipated activities for the proposed decommissioning and replacement of the Ocean View monopole tower site and associated supporting infrastructures are presented below.

2.1 Decommissioning Activities

The proposed project activities will entail the decommissioning (discontinuing the operations) of the 20m-high monopole (artificial palm tree) network tower (as can be seen in Figure 2-1) in Ocean View Suburb by MTC Namibia-appointed decommissioning & tower replacement contractor, also referred herein as the decommissioning & infrastructure replacement contractor.

Figure 2-1: Photos of the current (dilapidated) status of the Ocean View tower and associated supporting infrastructure (accessories)

The duration for decommissioning works is anticipated to last between three and four weeks, i.e., one month or a little longer. The key anticipated activities for the decommissioning works will include, but not be limited to:

2.1.1 Planning, permits, and mobilization: about 5 to 10 days

It is during this stage that MTC Namibia, alongside its decommissioning & infrastructure replacement contractor, will determine how to do the decommissioning activities safely and efficiently. If not yet done, the structural integrity of the tower will be inspected and checked for any signs of damage, corrosion, or wear and tear. Moreover, the condition of the equipment attached to the tower, like antennas and cables, will be assessed to help determine if any parts can be salvaged (to be sold) or reused (in other projects).

2.1.2 Disconnection and Equipment Removal: Duration of 1 to 2 days

After the planning and assessment phase (stage), it is during this stage that the Decommissioning & Tower Replacement Contractor will start disconnecting and removing the equipment from the tower. This includes removing equipment such as antennas, cables, lines, shelters, power units, and any other electronic devices that are attached to the tower. This process will start with shutting down all the power to the equipment to ensure the safety of the decommissioning workers. Carefully, cables are disconnected, and the antennas are removed.

Once the equipment is removed, it is properly stored and transported off-site. All parts are labelled to easily identify them later. If any of the equipment is still functional, it might be considered for sale, donated to other organizations, or used in other new projects (communication systems).

2.1.3 Tower dismantling: Duration of 3 to 5 days

There are a few different methods we can use to take down a tower, depending on its size and location. The common method is using a crane. The crane will be attached to the top of the tower and slowly lowered to the ground. This method is usually used for smaller towers or towers that are located in areas with enough space for the crane to operate. Therefore, this will be used to dismantle the Ocean View tower.

For larger towers, we might use a technique called sectional dismantling. This involves cutting the tower into smaller sections and then removing each section one by one. It can be a more time-consuming process; however, it is often necessary for taller towers. Furthermore, during the dismantling process, extra precautions are taken to ensure the safety of the workers and the surrounding environment. Safety equipment like harnesses and helmets will be used, and all safety guidelines will be followed. This will also be done carefully to avoid damaging any nearby structures or power lines.

2.1.4 Site Rehabilitation and Restoration: Duration 3 to 5 days

Once the tower has been completely dismantled or demolished, the site will be cleaned up and restored to its original condition (pre-tower construction) as much as possible, i.e., rehabilitation of the disturbed land and the area around the decommissioned site. This includes removing all the debris and waste from the site. Hazardous waste, including any hazardous materials, like asbestos or lead, will be properly disposed of in accordance with the environmental regulations.

Site rehabilitation following tower decommissioning will include the following:

- The removal of all infrastructure
- Backfilling of excavations (the excavated tower holes left by the tower foundation will be backfilled to help to prevent any safety hazards and ensure that the site is stable and safe).
- Recontouring of the land
- Erosion control.

Any contaminated materials will be removed and disposed of at approved waste management sites in Swakopmund (for all waste except hazardous waste, which will be disposed of either in Walvis Bay (if there is capacity) or in Windhoek). The site will be restored to a stable, environmentally acceptable condition, with post-rehabilitation monitoring to ensure the environment's successful recovery post-disturbance.

It is important to note that the duration of individual activities listed above may be affected by different factors. The anticipated duration (schedule) can be affected by the mobilisation and logistics, which could take longer than the actual dismantling, the availability of the right rigging crews, and weather (wind) conditions.

2.2 Tower Replacement (New Tower Construction)

The same contractor appointed for the decommissioning works will be responsible for the replacement (construction and installation) of the new tower with a similar and improved structure and supporting infrastructure. Therefore, once the old tower structure is decommissioned, it will be replaced by a new structure that will be mounted to a concrete foundation and will be similar to the old structure; it will not require any supporting cables. The physical assembling of the network structure and the construction of the foundations will take place on the site by using manual labour as far as possible.

The Construction activities will include excavation, concrete civil works, and tower rigging. There will be minimal earthworks required to prepare the site for the new tower construction and installation. The construction work is anticipated to take 2 to 3 months, and the construction activities will be limited to normal working hours, i.e., 08h00 and 17h00.

MTC and its appointed contractor for the decommissioning and tower replacement/construction will be required to adhere to health, safety, and environmental requirements for construction and operation (as well as maintenance), as presented in this document for the project activities

It is important to note that the duration of individual activities listed above may be affected by different factors. The anticipated duration (schedule) can be affected by the mobilisation and logistics, which could take longer than the actual dismantling, the availability of the right rigging crews, and weather (wind) conditions.

2.3 Required Resources and Services

The following resources, services, and infrastructure will be required for the project activities:

2.3.1 Human resources and accommodation

The number of workers required for the tower dismantling will range between 8 and 15 people. However, this will be determined by the actual work, as and when it progresses.

The workforce would entail a site supervisor, safety officer, certified riggers, general workers, truck drivers, and a crane operator (if a crane is used).

2.3.2 Accommodation

Out-of-town skilled workers will be accommodated in established accommodation facilities in Swakopmund, while general workers and specialised workers from Swakopmund will be commuting from their homes. Therefore, no need for on-site accommodation.

2.3.3 Water supply

Although no water is required during tower decommissioning, minimal water will still be needed for human consumption and possible dust control during tower dismantling.

The project's water will be sourced from the Swakopmund water supply by purchasing from the local authority or a nearby willing supplier, as needed. Alternatively, the Decommissioning & Tower Replacement Contractor will bring their own water to the site.

2.3.4 Power and fuel supply (for machinery and equipment)

Electricity is not required during tower decommissioning. However, a diesel-powered generator would be required for some activities.

2.3.5 Accessibility (roads)

The site is easily accessed by the existing town tarred roads leading to the site. The site is between Dr. Schwietering Street and Tsavorite Street in Ocean View.

2.3.6 Equipment and machinery

A crane (if needed), core dismantling equipment, TLB/excavator, compactor, rigging equipment (ropes, pulleys, shackles, and slings), gin pole or derrick, spanners, bolt cutters, and cutting equipment (grinders).

2.3.7 Vehicles

For logistics, there will be one or two support vehicles, such as four-wheel drive vehicles, trucks (tipper and flatbed), and a service vehicle.

2.3.8 Waste management

The different waste will be handled as follows:

- Sewage: A portable toilet will be provided on-site for use throughout the decommissioning duration and emptied according to the manufacturer's instructions.
- General and domestic waste: Solid waste containers will be made available onsite for waste storage and later proper disposal at the Swakopmund municipal solid waste management site.
- Hazardous waste: All vehicles, machinery, and fuel-consuming equipment on site will be provided with drip trays to capture potential fuel spills (kits) and waste oils.

  The waste fuel/oils will be carefully stored in a standardized container to be disposed of at an approved hazardous waste management facility (such as the facility in Walvis Bay, if there is capacity, and if not, then the waste will be disposed of at the Kupferberg Landfill site in Windhoek).

2.3.9 Occupational Health and Safety

Adequate and appropriate Personal Protective Equipment (PPE) will be provided to all project personnel while on and working at the site. The PPE (safety gear) will include helmets, harnesses, gloves, safety boots, and overalls. Owing to the type of work to be done (at height), for fall arrest systems, there will be a full-body harness and lifelines.

A fully-equipped first aid kit will be readily available on-site. To ensure safety for both the decommissioning workforce and the local community, warning signage and barricades will be placed/installed around the tower site.

2.3.10 Potential Accidental Fire Outbreaks

A minimum of two well-serviced fire extinguishers will be readily available on-site.

2.4 Decommissioning and Rehabilitation of Disturbed Site Areas

Once tower decommissioning and replacement works are completed, the contractor will be required to ensure that the site is left in a responsible and environmentally friendly state. Therefore, the contractor will do the following:

- Dismantle and remove all infrastructures from the project site that will no longer be needed on-site,
- Carry away all tower equipment and infrastructure,
- Clean up of site working areas and remove all generated solid waste to the municipal waste management facility (as per agreement with the Swakopmund Municipality,
- Backfill of all trenches excavated as part of the decommissioning activities and tower replacement activities, and no longer required further, thus ensuring that they do not pose a risk to people near the site, and
- Level stockpiled topsoil to ensure that the disturbed land sites are fully rehabilitated as much as possible.

3 LEGAL FRAMEWORK: PERMITTING AND LICENSES

The legal obligations that govern the proposed project activities in terms of required permits/licenses that may be required for the project activities are presented in Table 3-1. Therefore, MTC Namibia should ensure compliance with these permits/authorizations, where needed.

Table 3-1: List of legal requirements and permits for the tower decommissioning and replacement activities

Legislation/Policy/ Guideline	Implications for this project	Contac details
Environmental Management Act EMA (No 7 of 2007) Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 4878)	The EMA and its regulations should inform and guide this EA process. For any amendments to this EDIRMP before the project activities, an application/notice should be submitted to the Office of the Environmental Commissioner at the Department of Environmental Affairs (DEAF) and Forestry of the MEFT.	The contact details for the Office of the Environmental Commissioner **Mr. Timoteus Mufeti** (Environmental Commissioner) **Tel: +264 61 284 2701**
Communications Act No. 8 of 2009	If required, MTC Namibia should notify the Communications Regulatory Authority of Namibia (CRAN) of this intention (to decommission and replace the tower site).	Contact: Communications Regulatory Authority of Namibia (CRAN), **Mrs. Emilia Nghikembua: Chief Executive Officer** **Tel.: +264 (0) 61 222 666**
Local Authorities Act No. 23 of 1992	If required, MTC Namibia should notify the Municipality of Swakopmund about the intention to decommission and replace the tower site in the town.	**Municipality of Swakopmund** **Mr. Alfeus Benjamim: Chief Executive Officer** **Tel: +264 64 410 4111**
Pollution Control & Waste Management Bill	The Bill advocates for a duty of care for waste management affecting humans and the environment, and calls for a waste management licence for any activity relating to waste or hazardous waste management.	**No permit or license required. However, the improper disposal of waste from the site activities is prohibited.**
National Solid Waste Management Strategy of Namibia	The Specific Objectives of the Strategy are: (1) To strengthen the institutional, organisational, and legal framework for solid waste management, including capacity development.	**No permit or license required. However, the improper disposal of waste from the site activities is prohibited.**

Legislation/Policy/ Guideline	Implications for this project	Contac details
	(2.) To install a widespread culture of waste minimisation and to expand recycling systems. (3.) To implement formalised solid waste collection and management systems in all populated areas, including under the administration of Regional Councils. (4.) To enforce improvements in municipal waste disposal standards. (5.) To plan and implement feasible options for hazardous waste management.	The contact details for the solid waste management at the Swakopmund Municipality are as follows: **Mr. Abel Kationdorozu: Manager - Health Services & Solid Waste** **Tel: +264 64 410 4500** **For tower foundation rubble management, contact Refuse Solutions Group in Swakopmund.** **Tel: +264 64 405 334**
Hazardous Substance Ordinance, No. 14 of 1974	The ordinance provides for the control of toxic substances. It covers manufacture, sale, use, disposal, and dumping.	**No permit or license required. However, the improper disposal of hazardous waste from the site activities is prohibited.** **No permit or license required. However, the improper disposal of hazardous waste from the site activities is prohibited.** **Contact Wesco Engineering Services and Waste (Pty) Ltd https://www.wesco.com.na/page/waste-management (in Walvis Bay) for such waste.** **Tel: +264 64 213 200** **OR** **Rent-A-Drum in Swakopmund (https://www.rent-a-drum.com.na/hazardous-waste-management/)** **Tel: +264 64 460 977**
Soil Conservation Act (Act No. 76 of 1969)	The Act states the prevention and control of soil erosion and the protection, improvement, and conservation of soil. During tower decommissioning and replacement, soil will be potentially disturbed during excavation and levelling, and as a result of traffic compaction.	**No permit or license required. However, care should be taken to prevent unnecessary soil compaction and erosion.**

Legislation/Policy/ Guideline	Implications for this project	Contac details
National Heritage Act No. 76 of 1969	Call for the protection and conservation of heritage resources and artefacts. Should any archaeological material be found onsite during the excavation to remove the tower foundation, work should stop immediately, and the National Heritage Council of Namibia must be informed as soon as possible. The Heritage Council will then decide whether to clear the area or decide to conserve the site or material.	Contact Details at the National Heritage Council (NHC) of Namibia **Mrs. Erica Ndalikokule – NHC Director** **National Heritage Council of Namibia** **Tel: +264 61 301 903**

4 IMPLEMENTATION RESPONSIBILITIES FOR THE ENVIRONMENTAL DECOMMISSIONING & INFRASTRUCTURE REPLACEMENT MANAGEMENT PLAN

MTC Namibia is ultimately responsible for the implementation of the Environmental Decommissioning and Infrastructure Replacement Management Plan. However, MTC Namibia may delegate this responsibility or part of it at any time, as they deem necessary. The roles and responsibilities of all delegates/parties involved in the effective implementation of this document are provided in Table 4-1.

Table 4-1: The implementation responsibilities for the tower's Environmental Decommissioning and Infrastructure Replacement Management Plan

Role	Responsibilities
Mobile Telecommunications Limited (MTC Namibia) and or their Representative	-Managing the implementation of this Environmental Decommissioning and Infrastructure Replacement Management Plan (EDIRMP) and updating and maintaining it when necessary. -Management and monitoring of individuals and/ or equipment on-site in terms of compliance with this EDIRMP and issuing fines for contravening the plan's provisions.
MTC Project / Site Manager	This individual will be responsible for ensuring that the project activities are completed on time. The Manager's duties and responsibilities will include: -Ensure that relevant commitments contained in this document are adhered to. -Maintain records of all relevant environmental documentation for the project. -Issuing fines to individuals who may be in breach of this document provision and, if necessary, removing such individuals from the site. -Cooperate with all relevant interested and affected parties/stakeholders. -Development and management of schedules for daily activities
Decommissioning & Tower Replacement Contractor	The Contractor's representative or Site Supervisors will be required to: -Ensure that the relevant commitments contained in this plan are adhered to. -Compile relevant procedures and method statements for approval by the Site Manager before initiation of project activities on the site. -Maintain records of all relevant environmental documentation applicable to their work.
Health, Safety, & Environmental (HSE)/Safety Officer	MTC Namibia may assign the responsibility of ensuring this document compliance throughout the project life cycle to a designated member of staff or an external qualified and experienced person, referred to in this plan as the HSE/Safety Officer. This officer will have the following responsibilities: -Management and facilitation of communication between MTC Namibia and Interested & Affected Parties/stakeholders regarding this plan.

Role	Responsibilities
	-Conducting site inspections of all areas concerning the implementation of this plan (monitor and audit its implementation). -Advising MTC Namibia or the Project/Site Manager on the removal of person(s) and/or equipment not complying with the provisions of this document. -Making recommendations to the Manager with respect to the issuing of fines for contraventions of this document. -Undertaking an annual review of the plan and recommending additions and/or changes to this document. -Ensuring that the decommissioning and replacement activities are conducted following the International Organization (ISO) standard 14001: 2015.

5 ENVIRONMENTAL MANAGEMENT MEASURES

5.1 Key Identified Potential Negative Impacts

The key potential impacts identified and associated with the decommissioning and tower replacement activities are listed below:

Potential Positive impacts (although temporary):

- Creation of temporary jobs for the employed people during the tower decommissioning and replacement.
- Landscape and visual Improvement: The removal of the tower restores the natural, undisturbed coastal desert landscape. This will also eliminate visual intrusion in the area.
- Habitat Recovery: The removal of foundations and infrastructure will enable soil recovery.
- Elimination of long-term safety hazards (risks) associated with structural collapse of aging infrastructure, and injury from abandoned cables or metal on the tower.
- The reduction in pollution risk, which eliminates future risks of corrosion-related contamination.
- Resource recovery: The steel and components recovered from the decommissioned tower (if still in good condition) can be recycled or reused, thus contributing to waste minimization (less waste piled at dumpsites) and contributing to the circular economy

Potential negative (adverse) impacts:

- Physical land/soil disturbance resulting in compaction and erosion
- Environmental pollution (littering)
- Temporary disturbance to neighbouring residents and businesses: Noise and associated activities may cause short-term disturbance to the local community during decommissioning and replacement.
- Dust Generation: The decommissioning (dismantling and vehicle movement) and replacement activities may generate short-term dust that may compromise local air quality.
- Vehicle impact and soil disturbance: The movement of trucks and machinery can compact local soils, thus damaging fragile desert surfaces.
- Potential occupational health and safety risks associated with the mishandling of decommissioning and replacement equipment.

- Occupational safety risks: there are workers' safety risks during tower decommissioning and replacement, associated with working at height and heavy lifting, if there are no strict occupational, health, and safety measures.
- Excavation impacts: The removal of foundations and anchors can cause localised land disturbance, which potentially leaves site soils vulnerable to erosion if not properly rehabilitated.
- Waste generation: The concrete rubble, cables, and scrap materials, if not properly disposed of or managed, can cause environmental pollution.
- Potential contamination: The potential spill risks owing to fuel spills from machinery, as well as the improper handling of hazardous materials on-site.
- The site may remain scarred for long, if rehabilitation is not done properly.
- Impact on archaeological and cultural heritage resources in the case of any archaeological and heritage finds onsite (inadvertent unearthing during site excavations).

5.2 Environmental Management and Mitigation Measures

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

5.3 Aim of the Environmental Management Actions

The management actions of this document aim to avoid potential negative impacts where possible. Where impacts cannot be avoided, measures are provided to reduce the significance of these impacts. The responsible persons at the MTC Namibia and/or their contractor should assess their commitment to the specific management actions detailed under the following subchapter.

5.3.1 Planning and Design Management and Mitigation Measures

The measures recommended to manage and mitigate environmental and social impacts for the planning and design stage are provided in Table 5-1.

Table 5-1: Planning and design phase management, and mitigation measures

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Decommissioning Plan implementation and training	Lack of EDIRMP awareness and implications thereof	-A Comprehensive Health and Safety Plan for the project activities should be compiled. -A EDIRMP non-compliance penalty system should be implemented on-site. -An HSE/Safety Officer should be assigned to the project to be responsible for managing the EDIRMP implementation and monitoring throughout the project.	-All required EDIRMP implementation Plans and Systems are compiled and in place.	-MTC Namibia	Pre-decommissioning and tower replacement works
Site inspection and assessment	Lack of inspection of the tower and its supporting infrastructure, resulting in poor planning of project execution	-If not yet done, the structural integrity of the tower should be inspected and checked for any signs of damage, corrosion, or wear and tear. -The condition of the equipment attached to the tower, like antennas and cables, should be assessed to help determine if any parts can be salvaged (to be sold) or reused (in other projects).	-The structural integrity is inspected, checked, assessed, and findings are noted in preparation for the project activities -The end use of the tower equipment has been determined.	-MTC Namibia	Pre-decommissioning and tower replacement works.
Surrounding environment	Lack of consideration of factors in the environment near or around the tower site, resulting in safety issues	-The surrounding environment should be assessed to determine the traffic volume, nearby buildings, or power lines (extra precautions would be needed to avoid any electrical hazards during and tower replacement).	-Surrounding environmental factors are considered and noted in the site inspection report.	-MTC Namibia	Pre-decommissioning and tower replacement works.
Authorizations	Lack of required/necessary permits or licenses	-All the required agreements, licenses, or permits should be applied for and obtained, and kept on record. The permits and agreements referred to include the waste disposal authorization (who? the Contractor) from the Swakopmund Municipality.	-All required permits are in place.	-MTC Namibia	Pre-decommissioning and tower replacement works. (during planning and design) and throughout the

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
					project life cycle (based on the stage of permit requirement)
Communication between MTC Namibia and the landowner/site neighbours	Lack of communication between the landowner and MTC Namibia and or their Contractor	-The landowner (Swakopmund Municipality) should be notified promptly of the commencement of the project's intended activities. -Continual engagement with the Municipality of Swakopmund and, where necessary, with neighbours should be maintained throughout the decommissioning and replacement phases.	-Ongoing consultation throughout the project, when and as required.	-MTC Namibia	Pre-decommissioning works and replacement, and throughout the project life cycle (as needed)
Employment and procurement	'Outsiders' or out-of-area people (businesses) are often given employment and tender opportunities at the expense of locals who can perform the same work. This may result in conflicts between locals and the Decommissioning & Tower Replacement Contractor.	-Where possible, preference for the work should be given to a local contractor from Swakopmund. Out-of-region/area procurement of a Decommissioning & Tower Replacement Contractor should be justified, for example, by the unavailability of local businesses. -Job opportunities for general labour should be given to locals (from Swakopmund, particularly the neighbouring residents and businesses of the Ocean View area). -Employment opportunities should be timely communicated to the Swakopmund Constituency Office to help the contractor in facilitating the recruitment process.	-The Decommissioning & Tower Replacement Contractor is from the Erongo Region (particularly Swakopmund). Otherwise, Justification for an out-of-region contractor is provided Contractor in partnership with the constituency councillor and or existing local development committee (if any) to determine employment considerations.	-MTC Namibia	Pre-decommissioning and tower replacement works, and during, if external personnel are required by the Contractor.

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Procurement of goods and services for ground preparatory works & Decommissioning & Tower Replacement Contractors, and services		-The procurement stage for the project works should follow a fair and transparent process. -Skills transfer and capacity building should be prioritized throughout the project. It is important that if the contract is awarded to an out-of-town company, they should be instructed to team up with a local company to ensure capacity building for locals. -Encourage the provision of goods and services that are locally available to be sourced from the locally available businesses, especially small and medium businesses. -During the drafting of tender documents, MTC Namibia shall include provisions designed to maximise the use of local labour. All unskilled labour shall be sourced from Swakopmund. Specific recruitment procedures shall be spelled out.	-All the procurement-related requirements are implemented	-MTC Namibia	Pre-decommissioning (during planning and design)
Tower decommissioning and replacement works	Conflicts arising from poor scheduling (notifications) of decommissioning and tower replacement	-A convenient work/schedule should be prepared and shared with the Municipality so that they can inform the local communities of when to expect project activities in the area. -A schedule for the project activities should be prepared and shared with the local community leadership or via the existing communication/information channels (in Ocean View) and immediate neighbours so that they are aware of the project vehicle movement and presence on-site. -Project activities should be done during weekdays only, i.e., Mondays to Fridays, and during working hours (8:00 am - 5:00 pm).	-Timely submission of notifications to the landowner and neighbours -Clear project activities posters are erected on-site	-MTC Namibia - Decommissioning & Tower Replacement Contractor	Pre-decommissioning and replacement work. (during planning and design)

5.3.2 Environmental Management and Mitigation Measures: Decommissioning and Tower Replacement (Construction)

The recommended measures for the management and mitigation of potential impacts associated with the decommissioning and tower replacement works are presented in Table 5-2.

Table 5-2: Tower Decommissioning and Replacement phase management and mitigation measures

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Decommissioning & Replacement Plan implementation and training	Lack of EDIRMP awareness and implications thereof	-EDIRMP training should be provided to all workers onsite. -All site personnel should be aware of the necessary health, safety, and environmental considerations applicable to their respective work. -The implementation of this EDIRMP should be monitored. The site should be inspected, and a compliance audit should be done throughout **the project activities, monthly and biannually, for overall EDIRMP implementation.** -The EDIRMP non-compliance penalty system should be implemented.	-Records of EDIRMP compliance/monitoring conducted biannually	-MTC Namibia Project/Site Manager -Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Throughout the decommissioning phase and replacement, and when deemed necessary
Soils	Physical soil/land disturbance and loss of topsoil	-Stockpiled topsoil and excavated materials during infrastructure removal should be used to backfill the excavated and disturbed site post-decommissioning and replacement. -The topsoil stripped from certain site areas to enable project activities should be returned to its initial position to avoid unnecessary stockpiling of site soils, which would leave them prone to erosion. -Soils that are not within the intended footprints of the site should be left undisturbed, and soil conservation implemented as far as possible. -Project vehicles and machinery should adhere to the designated access route and refrain from creating unnecessary	-No proliferation of informal vehicle tracks created by project activities. -No new erosion gullies. -No signs of soil compaction -No disturbance to unmarked areas on-site.	-Project/Site Manager -Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Throughout the decommissioning and replacement phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
		tracks on-site by driving off-road, which can cause further soil compaction and erosion.			
Waste management	Environmental pollution (littering)	-Responsibly dispose of waste and do not litter. -After each day's work, ensure that there are no wastes left on-site or scattered around the site. -All domestic and general waste produced daily should be contained on-site until such time that it is transported to designated waste sites. -No waste may be buried or burned on site or anywhere else. -The site should be equipped with separate waste bins for solid and general/domestic waste. -A penalty system for the irresponsible disposal of waste onsite and anywhere in the area should be implemented.	-No visible litter around the project area -Provision of sufficient waste storage containers -Waste management awareness -Waste disposal permits for the approved waste management sites -Environmental, Health, and Safety Statements and Policy	-Project/Site Manager -Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Throughout the decommissioning and replacement phase
	Sewage generated by project workers	-The workers should be provided with sufficient toilet facilities while on-site (portable chemical toilet, if possible). -No open defecation is allowed on and around the site. Use the provided portable toilets for the workers. -Sewage waste should be stored as per the portable chemical toilets supplied on site and regularly disposed of at the nearest treatment facility.	-Adequate toilet and basic ablution facilities on site -There is a qualified and certified sewage removal operator -Waste treatment agents/chemicals.	-Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Throughout the decommissioning and replacement phase
	Rubbles, scrap metals, and cables	**The management and mitigation measures for these types of waste are provided in Table 5-3.**			
	Hazardous waste	**The management and mitigation measures for the hazardous waste are provided in Table 5-4.**			
Noise	Temporary (short-term) disturbance due	-Provide worker awareness training on minimizing noise, and enforce no shouting or unnecessary hooting on or near the site.	-No complaints of noise associated with the project	-Decommissioning & Tower	Throughout the decommissioning

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
	to noise to neighbouring residents and businesses (emanating from cutting, unbolting, and crane use)	-Project activities hours should be between 08 am and 5 pm to prevent noise generated by equipment and the movement of heavy vehicles on-site. -Limit working hours to daytime (e.g., 08:00–17:00) -Use well-maintained equipment with silencers to limit noise. -Avoid simultaneous high-noise activities on-site. -Regular maintenance of machinery. -Idle equipment should be switched off. Position noisy equipment away from the nearest dwellings where possible. Schedule deliveries during the daytime and implement controlled loading practices (avoid dropping materials). -When operating excavators and other noise-generating machinery onsite, workers should be equipped with personal protective equipment (PPE) such as earplugs to reduce exposure to excessive noise.	-Noise levels kept within acceptable limits (less than 85 dB(A) at the site). -Compliance with local guidelines) -No transport activities outside permitted hours -No excessive noise incidents during loading/offloading -The community is informed before works commence. If any complaints are logged and resolved within 48 hours.	Replacement Contractor -HSE/Safety Officer	and replacement phase
Air quality	Short-term dust generation owing to dismantling and vehicle movement	-Wet suppression (water spraying) during breaking and excavation. -Limit the extent of exposed areas, and avoid work during strong winds. -Regularly dampen access roads. -Enforce low speed limits, i.e., 20km/hr. -Restrict unnecessary vehicle movement. -Dampen materials before handling -Avoid dropping materials from height, rather use controlled loading techniques. -Keep stockpiles small and covered (tarpaulins where feasible).	-Visible dust minimized -No excessive dust plumes -No community complaints recorded -Reduced dust along access routes -Speed limits are adhered to, to ensure that there are no visible dust trails -There is minimal dust during the loading/offloading of materials -Stockpiles are covered or dampened, and no	-Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	During foundation removal Throughout decommissioning During material handling

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
		-Apply water spray, and the stockpile should be located away from the nearest properties/houses. -High dust-generating activities should be suspended during strong winds. The frequency of water spraying should be increased. -Provide PPE (dust masks and goggles). -Enforce usage, and conduct toolbox talks on dust risks. -Ensure regular site cleaning. -Remove fine materials promptly, and maintain tidy work areas. -Trucks transporting fine materials should be covered, and avoid overloading. -Lightly compact or wet exposed surfaces, and rehabilitate disturbed areas to prevent ongoing dust generation.	windblown dust is observed. -The work activities are halted during high wind events. -Appropriate and adequate PPE is issued and worn -No dust-related health complaints. -Complaints recorded and resolved within 48 hours to the community's satisfaction. -No dust emissions during materials transport.		
Vehicular traffic safety	Presence of heavy vehicles on-site	-Vehicle drivers and equipment operators should have valid and appropriate driving licenses and adhere to the road safety rules. -Drivers should drive slowly (20km/hour or less) while on-site, while looking out for people, especially children and vulnerable members of society, near and around the site. -Project vehicles should be in a roadworthy condition and serviced regularly to avoid accidents owing to mechanical faults. -Vehicle drivers should only make use of the designated site access roads provided and as agreed. -Vehicle drivers should not be allowed to operate vehicles while under the influence of alcohol. -Project vehicles should be parked within the boundary or demarcated areas around the site. -Deliveries from and to the site should be done optimally during weekdays and between the hours of 8 am and 5 pm.	-No complaints from members of the public regarding vehicular traffic issues related to the project activities. -All personnel operating the project vehicles and machinery are appropriately licensed and possess valid driving licenses. -Demarcated areas for parking, offloading, and loading zones on-site.	-Project/Site Manager -Decommissioning & Tower Replacement Contractor	Throughout the decommissioning and replacement phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Occupational and Community Health and Safety					
Occupational and locals' health and safety	General health and safety associated with project activities	-During induction, personnel should be provided with an awareness training of the risks of mishandling equipment and materials on site. -Appropriate and written warning signage should be placed on-site, where visible. -Projected loads should be securely fastened to vehicles to avoid falling and injuring people along routes and around the sites. -Heavy vehicles and equipment should be properly secured to prevent any harm or injury to both project personnel and locals moving near the site. -Personnel should not be allowed to consume alcohol or other intoxicants before and during working hours, as this may lead to mishandling of equipment, resulting in health and safety risks.	-A comprehensive health and safety plan for the activities is compiled. -Availability of fully-furnished first aid kits -Trained workers to administer first aid	-Project/Site Manager -Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Throughout the decommissioning and replacement phase
Emergency preparedness	Delayed response to accidents or incidents	-Develop and communicate an emergency response plan. -A fully furnished first aid kit should be made available on-site. -Train at least 2 to 3 people on-site on the administration of first aid (the training of first aiders on-site).	-Emergency plan in place -A first aid kit is available -Response time is adequate.	-Project/Site Manager -Decommissioning & Tower Replacement Contractor	Throughout decommissioning and replacement
Working at heights (tower dismantling)	Risk of falls leading to serious injury or fatalities	-Ensure the use of certified fall protection equipment (harnesses, lifelines) as well as hard hats. -Ensure that only trained personnel are working at heights. -Implement a permit-to-work system.	-100% use of PPE -No fall incidents reported -Valid training records available	-Decommissioning & Tower Replacement Contractor	Throughout the dismantling phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
				-HSE/Safety Officer	
Use of heavy machinery and equipment (cranes, tools):	Risk of injury from equipment failure, improper use, or struck-by incidents	-Equipment should be inspected and certified. -Allow only trained operators to conduct work on-site. -Implement and enforce exclusion zones around machinery.	-Equipment inspection records available. -No machinery-related incidents -Exclusion zones are maintained	-Project/Site Manager -Decommissioning & Tower Replacement Contractor	Throughout decommissioning and replacement.
Manual handling of materials (scrap, rubble, cables)	Risk of musculoskeletal injuries and cuts	-Training on proper lifting techniques should be provided. -Mechanical aids should be used, where possible -Appropriate and adequate personal protective equipment (PPE), such as gloves and safety boots, should be provided.	Reduced manual handling injuries -PPE is worn at all times -No lost-time injuries.	-Project/Site Manager -Decommissioning & Tower Replacement Contractor	During material handling.
Electrical hazards (live cables or residual current)	Risk of electric shock or burns	-All electrical systems should be isolated and de-energized before work starts. -Lockout/tagout procedures should be verified. -Use the services of qualified and experienced electricians ONLY.	-Lockout/tagout procedures implemented -No electrical incidents reported	-Decommissioning & Tower Replacement Contractor, with the help of a qualified and experienced Electrician	Before and during dismantling.
Falling objects during dismantling	Risk of injury to workers and nearby community members	-Establish and enforce exclusion zones. -Use controlled lowering techniques -Wear hard hats at all times.	-No unauthorized entry into exclusion zones -No falling-object incidents	-Project/Site Manager -Decommissioning & Tower	Throughout the dismantling.

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
				Replacement Contractor	
Exposure to noise and dust	Health impacts such as hearing loss and respiratory irritation	-Provide and ensure the use of appropriate PPE (overalls, earplugs, and dust masks) -Implement dust and noise control measures. -The rotation of workers should be implemented, if necessary.	PPE compliance -No reported health complaints -Monitoring (if applicable) within limits.	-Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Throughout the decommissioning and replacement (project).
Public access to the tower site (Ocean View community in proximity to the site)	Risk of injury to community members (especially local children)	-The site fence should be secure with fencing/barriers if the current fencing is not sufficient for the project activities. -Safety warning signage should be placed around the tower site to ensure safety for both the project workforce and the local community. -Employ security personnel at the site, where needed.	No unauthorized access incidents -Signage in place and visible	-Project/Site Manager -Decommissioning & Tower Replacement Contractor	Throughout the decommissioning and replacement (project).
Interaction with the local community	Risk of conflict, accidents, or misunderstanding of activities	-Communicate work schedule to the surrounding community through the local leadership (or existing information sharing channels) -Implement grievance mechanism.	Community informed before works -Complaints resolved within 48 hours	-Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Before and during decommissioning and replacement.
Traffic and movement of vehicles	Risk of accidents involving pedestrians and vehicles	-Develop a short-term traffic management plan. -Use flag personnel near the site to warn motorists of the activities near the road, where required	No traffic-related incidents -Speed limits adhered to, and traffic control measures in place	-Decommissioning & Tower Replacement Contractor	During transport activities.

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
		-Enforce speed limits (20km/hr near the site). -Use designated routes to access the site.		-Project/Site Manager (with a Transport Supervisor)	
Fire hazards (fuel, electrical works)	Risk of fire causing injury or property damage	-Ensure that the site is equipped with sufficient and well-serviced fire extinguishers. -Train workers on fire response procedures. -Store fuel safely, if needed on-site for equipment.	-Fire equipment available and serviced -No fire incidents reported	-Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Throughout the decommissioning and replacement (project)
Fire management	Accidental fire outbreak	-Portable and serviced fire extinguishers should be available on-site. -No open fires should be made near electrical cables. -No open fires should be created by project personnel on-site. -Make provision for smoking areas for crew members who smoke. This is to ensure that the cigarettes' fire is completely put out and disposed of in the allocated bins on-site.	-No site-related fires recorded (due to the presence of project personnel) -Fire extinguishers (1 per vehicle)	-Project/Site Manager -Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Throughout the decommissioning and replacement (project)
Archaeology and heritage	Accidental disturbance of archaeological or heritage objects	-If any archaeological materials, human burials, or skeletal remains are uncovered during earthworks, the work in the immediate area should be halted, and the finds would need to be reported to the NHC, which may require inspection by an Archaeologist. The ECO should have the area fenced off and contact NHC (Tel: +264 61 244 375), National Forensic Laboratory (+264 61 240 461) immediately.	-Preservation of all artefacts and objects that are discovered onsite -Salvage equipment -Flag tapes -GPS (site marking)	-Project/Site Manager -Decommissioning & Tower Replacement Contractor	As and when required, i.e., before the commencement of works, and during decommissioning and replacement

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
		-Avoid direct damage to archaeological or heritage sites that may be encountered during excavations. -All accidental discoveries shall be reported immediately to an archaeologist/heritage practitioner so that an investigation and evaluation of the finds can be made, and, acting upon advice, the HSE/Safety Officer will advise the necessary actions to be taken. -MTC Namibia and its Contractor should adhere to the provisions of Section 55 of the National Heritage Act in the event significant heritage and cultural features are discovered in the course of the project works and implement the Chance Finds Procedure under Annexure 1.		-HSE/Safety Officer	

5.3.3 Management and Mitigation Measures for Management of Rubble, Scrap Metal, and Cables

The management and mitigation measures for the waste management (particularly, rubbles, scrap metals, and cables) are provided in Table 5-3.

Table 5-3: Management and Mitigation Measures for Waste Management (Rubbles, Scrap Metals, and Cables)

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Generation of rubble (concrete foundation, footings)	Environmental pollution Obstruction of movement and visual impact	-Break and collect rubble systematically. -Store rubble in the designated area on-site until its safe disposal at the approved waste disposal site in Swakopmund. -Reuse rubble, where possible (such as backfilling) or dispose of at the approved section of the Swakopmund Municipal waste disposal site.	-There is no illegal dumping observed -Waste is stored in a designated area -The waste disposal records are kept on file.	-Decommissioning & Tower Replacement Contractor -Project/Site Manager	During and immediately after dismantling

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Scrap metal (tower sections, bolts, fittings)	Injury risk (sharp edges), theft/scavenging, and environmental contamination if left on site	-The scrap metal should be segregated. -Store the scrap metal in a secure and designated area. -Sell or recycle scrap metals through licensed recyclers only.	-100% of scrap metal is collected and recycled -No injuries reported -The waste storage area is maintained	-Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Throughout decommissioning and replacement
Electrical cables and wiring	Environmental pollution (plastic insulation) Potential hazardous components and fire risk, if burned	-The burning of cables on-site or anywhere in the environment is strictly prohibited. -The electrical cables should be safely removed and stored or sent for proper management and or disposal at an approved and licensed/certified recycling facility.	-No evidence of cable burning on-site or anywhere in unauthorized sites -Waste transfer notes available -All cables are removed from the site	-Decommissioning & Tower Replacement Contractor -Project/Site Manager	During dismantling and site clearance
Temporary waste storage on-site	Soil contamination Windblown litter is affecting nearby households	-Provide clearly marked waste collection points on-site. -Implement the covering of skips/containers. There should be regular site housekeeping.	-No litter observed on-site or in the surrounding areas -Waste containers in use and not overflowing	-Decommissioning & Tower Replacement Contractor -HSE/Safety Officer, and workers	Daily during works
Transport of waste materials	Spillage and littering along transport routes Nuisance to the community	-Trucks used to transport waste should always be covered. -The transported loads should be secured. -Any accidental spills should be cleaned up immediately. -For the project activities, only approved routes should be used.	-No spillage incidents reported -Vehicles properly covered -Clean transport routes are maintained.	-Decommissioning & Tower Replacement Contractor	During the waste removal phase

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Disposal of waste at unauthorized sites	Environmental degradation Non-compliance with regulations	-All waste should be disposed of at approved municipal or licensed disposal/recycling facilities. -The waste disposal records should be maintained.	-Disposal receipts/records available -100% compliance with approved facilities	-Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Throughout and post-decommissioning and replacement
Interaction with informal waste pickers in the area, if any	Health and safety risks Conflict over materials	-Access should be restricted to active work areas only. -Engage the community on safe practices. -Allow controlled recovery where appropriate.	-No unauthorized access incidents -No injuries involving the public -Community awareness conducted	-Decommissioning & Tower Replacement Contractor -Project/Site Manager	Throughout project
Final site clearance and rehabilitation	Residual waste causes long-term environmental and visual impacts	-Conduct final site inspection. -Remove all waste from the site. -Rehabilitate disturbed areas to their original state as much as possible.	-The site is cleared of all waste	-Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Immediately after decommissioning and replacement

5.3.4 Management and Mitigation Measures for Management of Hazardous Waste

The management and mitigation measures for the management of hazardous waste (fuels and oils) are provided in Table 5-4.

Table 5-4: Management and Mitigation Measures for Waste Management of Hazardous Waste

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Handling of fuels, oils, and lubricants (for machinery)	Soil and groundwater contamination from spills or leaks	-Store fuels in bunded areas (the only fuel to be stored on-site is for equipment such as generators only). -Use drip trays for all vehicles on-site -Only refuel in designated areas (for site equipment ONLY, as vehicles should be refuelled at the service stations in town and not on-site). -Keep spill kits on-site throughout the project.	-No visible spills -Spill kits available and used -No soil contamination incidents	-Decommissioning & Tower Replacement Contractor -Project/Site Manager	Throughout decommissioning and replacement
Leakage from machinery and equipment	Environmental pollution and safety hazards	Regular inspection and maintenance of machinery; repair leaks immediately; remove defective equipment from the site	-Maintenance records available -No leaking equipment in operation	-Decommissioning & Tower Replacement Contractor, with equipment operators	Throughout decommissioning and replacement
Storage of hazardous substances on-site	Risk of spills, fire, and exposure to workers/community	-Hazardous substances should be stored in clearly labelled, secured, and ventilated areas. -Maintain Material Safety Data Sheets (MSDS) and restrict access. -Make use of local/nearby licensed/certified hazardous waste management companies such as **Wesco Engineering Services and Waste** https://www.wesco.com.na/page/waste-management (in Walvis Bay); Tel: +264 64 213 200 and **Rent-A-Drum** (https://www.rent-a-drum.com.na/hazardous-waste-management/); Tel: +264 64 460 977.	-Hazardous materials properly labelled and stored -MSDS available on-site -No unauthorized access	-Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Throughout decommissioning and replacement
Handling of electrical components such as batteries	Exposure to hazardous chemicals;	-Electrical components should be removed and stored safely. -Avoid damage to these components.	-100% safe removal and disposal	-Decommissioning & Tower Replacement Contractor	During dismantling and removal

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
(possible hazardous materials)	improper disposal risks	-Dispose of electrical components through licensed hazardous waste contractors only.	-Disposal records available	-HSE/Safety Officer	
Accidental spills and leaks	Soil, surface water contamination, and health risks	-Implement spill response procedure. -Train workers on handling accidental hazardous substance spills and leaks. -Contain and clean spills immediately, and dispose of contaminated materials properly	-Spill response time minimized -All spills recorded and managed -No residual contamination	-Decommissioning & Tower Replacement Contractor -Project/Site Manager	Throughout decommissioning and replacement
Improper disposal of hazardous waste	Environmental degradation and legal non-compliance	-Hazardous waste should only be disposed of at licensed and approved facilities -A waste manifests, and records should be maintained.	-Disposal certificates available -100% compliance with legal requirements	-Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	During and post-decommissioning and replacement
Fire risk from flammable substances	Injury to workers/nearby community, and property damage	-Flammable substances should be stored and handled safely and carefully, respectively. -Keep fire extinguishers accessible on-site at all times. -Smoking near or in proximity to storage areas on-site is strictly prohibited.	-Fire prevention measures in place -No fire incidents reported	-Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Throughout the project/decommissioning, and replacement
Worker exposure to hazardous substances	Health impacts (skin irritation, inhalation risks)	-Provide appropriate PPE such as gloves, masks, and overalls. -Conduct and implement training on safe handling; enforce hygiene practices.	-PPE issued and used -No exposure-related health complaints	-Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Daily during works

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Transport of hazardous materials	Spills and accidents during transit	-Use approved containers -Secure loads; ensure drivers are trained -Carry spill kits in vehicles	No transport-related incidents -Materials are transported safely	-Decommissioning & Tower Replacement Contractor, with a Transport Supervisor	During transport activities
Site closure and removal of hazardous substances	Residual contamination poses a long-term risk.	-Remove all hazardous substances from the site to an appropriate and approved hazardous waste management/recycling facility. -Conduct final inspection, and remediate any contaminated areas at the site.	-The site is free of hazardous materials -The environmental clearance is obtained	-Decommissioning & Tower Replacement Contractor -HSE/Safety Officer	Post-decommissioning and replacement

5.3.5 Management and Mitigation Measures for Site Rehabilitation and Restoration

The management and mitigation measures for the rehabilitation and restoration of the disturbed site area after decommissioning and tower replacement activities are presented in Table 5-5.

Table 5-5: Site Rehabilitation and Restoration Post-Decommissioning and Tower Replacement works: Management and Mitigation Measures

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Removal of tower foundation (concrete base)	Land disturbance; residual concrete affecting future land use	-Break and remove foundation to an agreed depth -The holes and trenches should be backfilled with suitable soil -The soil surface should be compacted and levelled.	-No exposed concrete on-site -The land is levelled to the surrounding grade	-Decommissioning & Tower Replacement Contractor -Project/Site Manager	During decommissioning and replacement

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Soil disturbance and compaction	Reduced soil quality and permeability	-The compacted soils should be ripped/loosened and stabilized.	-Soil structure restored -No visible compaction	-Decommissioning & Tower Replacement Contractor	Immediately after the removal works
Waste generation (scrap metal, concrete, general waste)	Pollution and visual impacts	-Waste should be segregated. -Scrap metal should be recycled, if possible. If impossible to recycle, it should be disposed of at an approved municipal landfill (Swakopmund Municipal waste management site (through the Health Services & Solid Waste Department, Tel: +264 64 410 4500) or handled through the external waste management contractor, such as **Refuse Solutions Group (Tel: +264 64 405 334)**	-Waste disposal records -No waste left on-site	-Decommissioning & Tower Replacement Contractor -Project/Site Manager	During and immediately after works
Hazardous materials (oils and fuels)	Soil and groundwater contamination	Remove hazardous substances; clean spills; dispose of via licensed hazardous waste handlers (such **as Wesco Engineering Services and Waste in Walvis Bay) by contacting them at Tel: +264 64 213 200, and or Rent-A-Drum: +264 64 460 977)**	-No visible contamination -Disposal certificates available	-Decommissioning & Tower Replacement Contractor	During decommissioning and replacement
Erosion risk (wind/water)	Soil loss and land degradation	-Implement erosion control measures such as compaction and levelling.	-No signs of erosion (gullies and dust plumes)	-Decommissioning & Tower Replacement Contractor	Immediately post-rehabilitation
Visual/aesthetic impacts	Unsightly site conditions	-All infrastructure and debris should be removed from the site. -Restore the site to pre-project condition or agreed land use.	-The site is visually clean and acceptable to the community/Swakopmund Municipality	-Decommissioning & Tower Replacement Contractor -Project/Site Manager	Immediately after completion
Community safety (open pits, debris)	Injury risk to the Ocean View residents	-All excavations should be backfilled -Hazardous debris should be removed. -The site should be properly secured during works.	-No open pits/trenches or holes -No safety hazards remaining	-Decommissioning & Tower Replacement Contractor	During and immediately after works

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Timeline
Infrastructure remnants (cables, fencing, equipment)	Obstruction to land use; safety risks	-All underground/aboveground infrastructure should be removed, unless otherwise agreed.	-No remaining infrastructure visible	-Decommissioning & Tower Replacement Contractor	During decommissioning and replacement
Site handover	Incomplete rehabilitation	-Conduct joint inspection with MTC Namibia, representatives from the Swakopmund Municipality, and the Ocean View community local leadership.	-Signed site clearance/handover certificate	-Decommissioning & Tower Replacement Contractor -Project/Site Manager -Swakopmund Municipality	Upon completion of the decommissioning and replacement works

5.4 Post-Decommissioning: Final Checks and Documentation

The tower decommissioning and replacement process will be considered complete after MTC Namibia and the Decommissioning & Tower Replacement Contractor have conducted final checks and documentation. MTC Namibia will ensure that all the tower equipment and associated supporting structures have been removed from the site, the site has been cleaned up, and all the legal requirements are met.

MTC Namibia will need to ensure that the whole decommissioning and tower replacement processes are documented by using the following:

- Taking photos and videos of the site before, during, and after the decommissioning, as well as the replacement activities.
- Keeping records of all the permits, inspections, and safety procedures that were followed. The records will be crucial for future reference to prove that all regulations and rules were followed for the work done at the tower site.

ANNEXURE 1: CHANCE FINDS PROCEDURE (AFTER KINAHAN, 2020)

Areas of project activities 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 particularly during decommissioning activities (unearthing. The procedure set out here covers the reporting and management of such findings.

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 …. object ……must 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 and is correctly identified in the field.

The Project Manager must report the findings to the following competent authorities:

- **National Heritage Council of Namibia: Head Office: +264 61 244 375**

  Technical Office +264 61 301 903

- **National Museum (+264 61 276 800)**
- **National Forensic Laboratory (+264 61 240 461)**

Responsibility:

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

Procedure:

<u>Action by a person identifying archaeological or heritage material</u>

a) If operating machinery or equipment, stop work

b) Identify the site with a flag tape

c) Determine the GPS position if possible

d) Report findings to the foreman

Action by the foreman

a) Report findings, site location, and actions taken to the superintendent

b) Cease any works in the immediate vicinity

Action by the superintendent

a) Visit the site and determine whether work can proceed without damage to the findings

b) Determine and mark the exclusion boundary

c) Site location and details to be added to the project GIS for field confirmation by an archaeologist

Action by an Archaeologist

a) Inspect the site and confirm the addition to the project GIS

b) Advise NHC and request written permission to remove findings from the work area

c) Recovery, packaging, and labelling of findings for transfer to the National Museum

In the event of discovering human remains

a) Actions as above

b) Field inspection by an archaeologist to confirm that the remains are human

c) Advise and liaise with NHC and Police

d) Recovery of remains and removal to the National Museum or National Forensic Laboratory, as directed.