Your Essential Water Tank Cleaning & Disinfection Procedure

Step-by-Step Guide for Safe & Effective Maintenance

A Comprehensive Water Tank Cleaning Procedure PDF for Healthy Water Storage

Why This Procedure Matters: Ensuring Safe, Clean Water

Ever wondered, **"What is the procedure of tank cleaning?"** It's more than just a routine task; it's a critical step in safeguarding health and ensuring the longevity of your water storage system. Contaminated water tanks can harbor harmful bacteria, viruses, algae, sediment, and other pollutants, leading to unpleasant taste, odor, and potential health risks.

This guide provides a general procedure for cleaning and disinfecting water storage tanks, ensuring your water remains safe for its intended use.

Scope of This Guide:

- General procedures for tank inspection, cleaning, and disinfection.
- Essential safety protocols to protect personnel.
- Guidelines for maintaining water quality post-cleaning.

Who is Responsible?
Those responsible for property maintenance and health and safety must ensure these procedures are followed, whether conducted by in-house staff or external contractors.

❗ **Important: Unsafe Tanks**
Tanks deemed unsafe due to structural damage, instability, or hazardous surroundings should NOT be cleaned until appropriate safety measures are implemented and the tank is certified safe by a qualified professional.

Before You Begin: Pre-Cleaning & Safety First!

Proper preparation and adherence to safety protocols are paramount.

Minimum Cleaning Frequencies:
The frequency of cleaning depends on factors like:

- **Tank Material:** (e.g., Plastic/Polyethylene tanks: annually; Concrete tanks: every 1-2 years; Steel tanks: as per inspection, potentially annually).
- **Water Source:** (Mains water might require less frequent cleaning than borehole or harvested rainwater).
- **Tank Location & Conditions:** (Outdoor tanks exposed to elements or areas with high dust/debris may need more frequent cleaning).
- **Local Regulations:** (Check any specific guidelines in Kenya).

Pre-Cleaning Checks:

- Inspect the tank externally for leaks, cracks, or damage.
- Check the integrity of hatches, vents, and pipework.
- Assess the surrounding area for hazards.
- Ensure you have all necessary tools and cleaning agents.

Safety Protocols: Your Non-Negotiables

- **Personal Protective Equipment (PPE):** Always use appropriate PPE, including:
  - Waterproof gloves
  - Safety goggles/face shield
  - Respiratory protection (e.g., N95 mask, especially for dusty conditions or when using chemicals)
  - Waterproof overalls or suitable protective clothing
  - Non-slip safety footwear
- **Working in Confined Spaces:**
  - Tank interiors are confined spaces. **A permit-to-work system is often required.**
  - Ensure adequate ventilation before entry and during work.
  - Have a trained attendant stationed outside the tank.
  - Utilize gas detection equipment if there's any risk of hazardous atmospheres.
  - Have an emergency rescue plan in place.
- **Working at Heights:** If accessing the tank involves working at height, ensure proper fall protection measures (e.g., secure ladders, harnesses) are used.
- **Electrical Safety:** Isolate and lock out any electrical equipment (pumps, UV sterilizers) connected to the tank.

Step-by-Step Water Tank Cleaning Process (Part 1)

Follow these steps for a thorough clean.

Step 1: Preparation & Emptying

1. **Isolate the Tank:** Close the inlet valve to stop water from entering. If possible, bypass the tank to maintain water supply to the property (if applicable).
2. **Inform Users:** Notify occupants of the temporary water supply interruption.
3. **Drain the Tank:**
    - Open the outlet/drain valve and empty the tank completely.
    - Direct drained water to a suitable discharge point, avoiding contamination of surroundings or watercourses. Consider local regulations for water disposal.
    - A submersible pump can be used to remove the last few inches of water and sludge.

Step 2: Physical Cleaning – Removing Sediment & Biofilm

1. **Ventilate (If a Confined Space):** Ensure the tank is well-ventilated before entry.
2. **Enter Safely (If Required):** Only if all confined space safety procedures (Page 3) are met.
3. **Remove Gross Debris:** Scoop out leaves, sludge, and any large debris using buckets and shovels/scoops.
4. **Scrub Interior Surfaces:**
    - Thoroughly scrub all internal surfaces (walls, floor, roof/underside of the lid) using stiff brushes, brooms, or high-pressure water jetting (if suitable for the tank material and conditions).
    - Pay special attention to corners, joints, and areas where biofilm is visible.
    - Work from the top down.
    - **Do NOT use detergents or soaps not approved for potable water systems.** Clean water is usually sufficient for scrubbing if followed by proper disinfection.

The Water Tank Disinfection Procedure (Part 2)

Disinfection is crucial to kill any remaining microorganisms.

Step 3: Rinsing After Cleaning

1. **Rinse Thoroughly:** After scrubbing, rinse all internal surfaces with clean water to remove loosened debris and cleaning residues.
2. **Drain Rinse Water:** Completely drain this rinse water from the tank.

Step 4: Disinfection – Choosing & Using Chemicals

The most common and effective chemical for water tank disinfection is chlorine, often in the form of sodium hypochlorite (liquid bleach) or calcium hypochlorite (bleaching powder).
Always use products certified safe for potable water applications.

- **Sodium Hypochlorite (Liquid Bleach):** Use unscented, regular household bleach (check label for concentration, typically 5-6% sodium hypochlorite).
- **Calcium Hypochlorite (Granular/Bleaching Powder):** Often preferred for larger tanks. Ensure it's fresh, as it degrades over time.

Dosage Example – 1000 litre water tank

- **Calculation:** For Calcium Hypochlorite (approx. 65-70% available chlorine): Roughly **75-85 grams of 65% bleaching powder per 1000 litres of water** to achieve 50 ppm. (Note: This is an estimate. Always verify with product instructions and local guidelines. 1 ppm≈1 mg/L).
    - **Example:** For a 1000-litre tank, to prepare a 50 ppm solution to spray onto surfaces, you might use a smaller quantity of water (e.g., 20 litres) and mix approximately 1.5–1.7 grams of bleaching powder.
- **Solution Preparation:** Dissolve the required amount of chlorine product in a clean plastic bucket with a small amount of water before adding to the tank or sprayer.

Application & Contact Time:

1. **Apply Disinfectant:** Thoroughly wet all internal surfaces of the tank with the chlorine solution using a sprayer, brushes, or by partially filling the tank and splashing the solution on the walls.
2. **Ensure Full Coverage:** All surfaces, including the underside of the lid/hatch, must be coated.
3. **Contact Time:** Allow the disinfectant solution to remain in contact with the tank surfaces for at least **30 minutes to 1 hour.** For highly contaminated tanks, longer contact times or higher concentrations might be needed (consult professionals).

Finishing Up: Final Rinse & Water Quality Assurance

The final steps are critical for safe water.

Step 5: Final Rinsing & Draining

1. **Drain Disinfectant Solution:** After the required contact time, completely drain the disinfectant solution from the tank.
2. **Thorough Final Rinse:** Rinse the tank thoroughly with clean, potable water at least two to three times, or until there is no chlorine odor detectable. Ensure all disinfectant residue is removed.
3. **Drain Rinse Water:** Completely drain all rinse water.

Step 6: Refilling the Tank

1. Close the drain valve.
2. Open the inlet valve and refill the tank with fresh, potable water.
3. Once full, close the inlet valve if it's not automatically controlled.

Step 7: Water Sampling & Quality Assurance (Highly Recommended)

1. **Wait (If Applicable):** Allow water to sit in the newly cleaned and refilled tank for a short period (e.g., a few hours) if practical.
2. **Test Water Quality:** Before putting the tank back into full service, it is best practice to test the water.
    - **Residual Chlorine:** Check for appropriate residual chlorine levels (if your water source is chlorinated). Excessive chlorine can be unpleasant.
    - **Bacteriological Tests:** Especially for critical applications (drinking water, food processing), collect a water sample from a tap supplied by the tank and send it to an accredited laboratory for testing (e.g., for Coliforms, E. coli).
3. **Record Keeping:** Maintain a log of all tank cleaning and disinfection activities, including dates, procedures followed, chemicals used, and any test results.

Your Quick Reference & Future Maintenance

You've successfully completed the **Water Tank Cleaning Process**!

Key Takeaways:

- Safety First: Always prioritize PPE and safe work practices, especially for confined spaces.
- Thoroughness Counts: Ensure complete physical cleaning before disinfection.
- Correct Disinfection: Use appropriate chemicals at the right concentration and contact time.
- Rinse Well: Remove all traces of detergents and disinfectants.
- Test for Assurance: Verify water quality after the process.

📋 Your Detailed Companion Guide:

👉For a comprehensive pre-operational check and a step-by-step procedural tick-sheet, download our **Water Tank Cleaning Checklist PDF here**!

When to Call the Professionals:

While this guide provides essential procedures, consider professional assistance if:

- The tank is very large or complex (e.g., industrial or municipal tanks).
- There's suspected structural damage or significant contamination.
- You are unable to meet all safety requirements (especially for confined space entry).
- Persistent water quality issues remain after cleaning.

Your partner in maintaining a safe and efficient water system.

Questions? Need Expert Assistance?
Contact us today for professional water tank cleaning services and consultations.

- **Website:** www.kitankcleaning.co.ke
- **Email:** kitankcleaning@gmail.com

Disclaimer: This document provides general guidelines. Always adhere to local regulations, manufacturer's instructions for equipment and chemicals, and specific site safety requirements.