

Drinking Water Treatment Process

The water that comes out of the taps at your home, school and work starts off as rain.

This rainwater either flows into rivers and streams or filters through the earth to form 'groundwater'.

We then collect this water at one river source called Irati river situated 15 kms from the point of treatment. It then flows to our water treatment works where it goes through various treatment processes before we send it to you.

As we take water from the river, the quality of it can be different, so the treatment process it goes through is tailored to make sure we give you the best-quality water possible.

Before arriving at your tap, water is treated at the Kiawambeu Water Treatment Plant to remove sediment, bacteria, and other impurities.

Before any chemical is dosed in water, the raw water undergoes basic tests to ascertain the amount required on daily bases as follow:

- pH: acid/alkali concentration in the water
- Turbidity: intensity of impurities
- Jar test: to determine the amount of Alum required.

Once it arrives at the plant, the water is pre chlorinated to kill bacteria that can thrive at the sedimentation basins and then rapidly mixed with aluminum sulfate (alum), a coagulant that helps the impurities stick together to form bigger particles called floc. The impurities are negatively charged while Alum is positively charged thus the impurities are attracted to the alum through a process known as coagulation./flocculation

Flocculation

After rapid mixing, the water flows into flocculation basins, where the flow of water is slowed and the floc has time to grow bigger.

Sedimentation

Next, the water flows into sedimentation basins, where the heavy floc particles sink to the bottom and are removed.

Filtration

Now the water travels through large filters made of sand and gravel. Filtration removes any remaining microscopic particles and microorganisms.

Disinfection

Finally, the water is disinfected to protect it against bacteria using Calcium Hypochlorite in a storage tank with a storage capacity of 2,000 m³.

Process control tests.

Before releasing the water to our esteemed customers and along the distribution network, the water is tested to confirm if it has met the required drinking water guidelines.

- pH
- Residual Chlorine for effective disinfection
- Turbidity
- Colour
- Bacteriological analysis.

Distribution

The clean water is then distributed through pipes that deliver it to more than 10,000 homes and businesses in Murang'a town and its environs.

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