



MICROBIOLOGICAL ASPECTS

The potential health consequences of Microbial contamination are such that its control must always be of paramount importance and must never be compromised.

Securing the microbiological safety of Rand Water drinking water is based on the use of multiple barriers, from catchment to consumer, to prevent the contamination of drinking water or to reduce contamination to levels not injurious to health. Safety is increased if multiple barriers are in place, including protection of water resources, proper selection and operation of a series of treatment steps and management of distribution system to maintain and protect treated water quality.

In general terms, the greatest microbiological risk is associated with ingestion of water that is contaminated with human or animal (including bird) faeces. Faeces can be a source of pathogenic bacteria, viruses, and protozoa. Faecally derived pathogens are the principal concerns in setting health-based targets for microbial safety. Microbial water quality often varies rapidly and over a wide range. Short-term peaks in pathogen concentration may increase the disease risks considerably and may trigger outbreaks of waterborne disease. Furthermore, by the time microbial contamination is detected, many people may have been exposed. For these reasons, reliance cannot be placed solely on end product testing, even when frequent, to ensure the microbial safety of drinking water

Rand Water is directing its attention in water safety plans to consistently ensuring drinking water safety and thereby protecting the public health. Management of the microbial drinking water safety requires a system-wide assessment to determine the potential hazards (biological, chemical, physical, radiological agents that have the potential to cause harm) that can affect the system. Rand Water has control measures in place to reduce or eliminate the hazards, and operational monitoring is undertaken to ensure that barriers within the system are functioning efficiently. In addition to faecally borne pathogens, other microbial hazards are also monitored.

Some microorganisms will grow as biofilms on surfaces in contact with water. With few exceptions, such as *Legionella*, most of these organisms do not cause illness in healthy persons, but they can cause nuisance through generation of tastes and odour or discoloration of drinking water supplies. Microbial growth following drinking water treatment is often referred to as "regrowth". It is typically reflected on the measurement of increasing Heterotrophic Plate Counts (HPC) in water samples. Elevated HPC occur especially in stagnant parts of piped distribution systems, in domestic plumbing, in some bottled water and in some plumbed-in devices such as carbon filters and vending machines.

While water can be a very significant source of infectious organisms, many of the diseases that are waterborne may also be transmitted through other routes, including person-to-person contact, aerosols and food intake. Depending on circumstances and in the absence of waterborne outbreaks, these routes may be more important than waterborne transmission.

Rand Water purifies the water by means of a conventional purification process, resulting in water that is safe to drink. Your tap water will satisfy your daily requirements, and meets the SANS 0241 water quality specifications.

Visit www.reservoir.co.za for further information on water quality in your area.

