

Health Organisation (WHO) launched Guidelines for Drinking Water Quality (GDWQ). These outline a fundamental change in approach, away from water quality monitoring, towards water safety assurance, through Water Safety Plans (WSPs). This factsheet outlines the rationale and methods for these methods.

Introduction

Box 1. OXFAM GB - Water Quality Monitoring of Hand Dug Wells in Angola

In 1999, more than 200,000 people in Angola were displaced due to civil war. Many were resettled in Internally Displaced Person (IDP) camps. Due to overcrowded conditions and poor access to water and sanitation, many existing hand dug wells became highly contaminated.

Using field-testing kits, Oxfam GB verified water quality by testing for E.coli (a family of bacteria associated with faecal pollution). In wells where the result was more than an established limit (e.g. 0 Colony Forming Units in a 100ml sample), the wells were disinfected with chlorine, to kill bacteria present in the water. The required chlorine concentrations for effective disinfection were determined by monitoring parameters such as pH or turbidity.

Source: Oxfam GB, 2001

Need for innovation

Based on scientific studies, WHO Guidelines showed that traditional water quality monitoring often produces results which are:

- too little because so few samples are taken compared to the amount of water produced; and
- too late because by the time the results are available, the water has been supplied and may have been consumed. (Medema et al. 2003; Payment 1998)

The third edition of the WHO GDWQ proposes an alternative approach that does not rely solely on water quality monitoring:

comprehensive risk assessment and risk management approach (WHO, 2004 pp 48).

The approach broadens the significance of water quality monitoring by placing it as a component of a "Framework for Drinking-Water Safety".

This framework has a number of components:

1. setting up **health based water quality targets**;
2. **system assessments**;
3. **operational monitoring** of control measures;
4. developing **management procedures** documenting assessment and monitoring; and
5. providing

Box 2. Water Safety Plans in piped supplies in Kampala and Jinja, Uganda

The Quality Control Department (QCD) of the Ugandan National Water and Sewerage Corporation (NW&SC) has historically monitored water quality by analysing samples from the water treatment plant outlet and taps at the end-points of the piped networks.

In 2002, NW&SC piloted the Water Safety Plan approach. During the initial system assessment it was noted that of the 700km of pipeline in Kampala, only 10% was being monitored and that even where poor water quality was found, it was difficult to identify the exact point of contamination.

Based on the **system assessment**, NW&SC prioritised “control points” at greatest risk throughout the system. These included points of contamination such as service reservoirs and valve boxes. Weekly field **monitoring** of the network was established at each control point using sanitary inspection tools and physico-chemical proxy indicators. These were **verified** using microbiological parameters once per month.

The benefits of the WSP approach for NW&SC included:

- 1. 10% cost reduction in microbiological testing
- 2. Location of specific point of contamination
- 3. Quicker identification of pipe bursts
- 4. Greater reliance “on site” field verification.

Adapted from: WHO, 2004 (200)

Conclusions

