

Session 19.

Water Quality Testing

Technical presentation and dialogue

Summary

Access to safe drinking water is central to the recovery and/or development of any community. The increased use of water for agricultural irrigation can also accelerate economic growth and improve livelihoods. USAID supports a range of activities in the Water, Sanitation and Hygiene (WASH) and agricultural sectors, many of which entail the establishment of new water access points or the rehabilitation of existing structures or systems. In these scenarios USAID must assure that water supplies meet certain quality criteria for domestic and agricultural purposes. As such, water quality testing is a key aspect of any water provision effort.

Specific water quality testing requirements will vary by activity, but generally must account for:

- a) a baseline, or initial water quality assessment to determine if water is safe; and
- b) a periodic testing or monitoring regime to determine if water source becomes contaminated.

The initial test will ideally provide information on the chemical, biological and physical qualities of the proposed water source (e.g., well, natural spring, stream, etc.). Extensive analyses are not always feasible, however, so USAID has also established minimum testing criteria focusing on the contaminants typically of greatest concern: inorganic Arsenic (As) and fecal coliform. Monitoring requirements, including frequency of testing, are established so that water quality can be assured as project activities progress.

Initial water quality testing and monitoring requirements are typically contained in a Water Quality Assurance Plan (WQAP); many IEEs will require preparation of a WQAP in response to proposed water provision efforts (domestic or agricultural). The WQAP will also specify a Response Protocol that details the steps to be taken in the event that water quality test results exceed certain thresholds (e.g., if As or coliform levels are higher than allowed).

Water quality testing often presents a practical challenge for project staff. In addition to the logistical demand of initial testing and monitoring across many, potentially dispersed systems or water access points, certain tests may require refrigeration, incubation and laboratory analysis. There are a number of field-oriented tools and resources available to meet some of the most common water quality testing requirements. However, projects are encouraged to explore multiple options based on their specific water quality testing needs (e.g., bigger investment in field equipment, use of contract labs, etc.).

Objectives

Review water quality testing requirements and procedures for USAID-supported water provision activities.

Key Resources

- Sample Water Quality Assurance Plan (WQAP) (in this section of the Sourcebook)