

WATER QUALITY DATA COLLECTION: THE WATER QUALITY STANDARDS PERSPECTIVE

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ABSTRACT

Water quality standards provide the foundation for water resource protection and management. Routine water monitoring programs provide an assessment of water quality conditions at a location over time, comparison to other sites and in some instances compliance with a state's water quality standards. These programs are designed to satisfy the general water quality assessment required by Clean Water Act - Section 305(b). States are also expected to evaluate compliance with water quality standards and identify waters that do not meet a state's water quality standards on its 303(d) list. To have effective water resource management, water quality data must be viewed from the perspective of a state's water quality criteria and associated implementation policies. This means that data collection must consider factors that are folded into a state's water quality criteria such as flow, seasonal variations, and co-occurring chemical parameters. An example being some criteria are dependent on other water quality characteristics including hardness, pH, and temperature. It may be necessary to consider the exposure period for criteria in a monitoring program design as well as available analytical methods and detection levels used in laboratory analysis. Challenges of interpreting new data types such as continuous and long term recordings in the light of existing water quality criteria are also discussed.

KEYWORDS

water quality standards, data collection, water quality criteria, monitoring program design