

## **Can The Laboratory Meet My Monitoring DQO's? Methods for Assessment of Laboratory Capabilities and Data Quality Analysis**

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### **Biographical Sketch of Author**

Dennis McChesney is an environmental scientist, currently in the Division of Enforcement and Compliance Assistance, at U.S. EPA Region 2. Until recently, Dennis was a hydrologist in Region 2's Division of Environmental Science and Assessment, where he planned and implemented monitoring projects in New York, New Jersey, and Puerto Rico, and oversaw quality management for the water programs throughout the Region. His previous experience was in the drinking water/ groundwater programs where he focused on groundwater protection and remediation. Dennis previously served as co-chair of EPA's Groundwater Protection Technical Forum, and as a member of the Methods and Data Comparability Board where he chaired the Board's Outreach Workgroup. Dennis earned a B.S. in Biology from the University of San Francisco, an M.B.A. from Fairleigh Dickinson University, and M.S. in Environmental Sciences from Rutgers University, where he is currently a doctoral candidate.

### **Abstract**

The production of data which meets a user's direct needs, determined through development of a project's data quality objectives (DQO's), is essential to a monitoring project's success. Production of data which can be compared to other data, or meet other needs, is increasingly recognized as crucial to efficient, effective water quality evaluations. A cornerstone of the project implementation process is selection of a laboratory to analyze project samples. Private sector and government laboratories usually offer services for analytes of interest. However, the actual methods employed, laboratory instrument capabilities, and the analyst's training and experience at a particular laboratory can, and unfortunately does, often result in acquisition of data which fails to meet the project DQO's. Consequently, an evaluation of a laboratory's capabilities is a critical element in assessing whether to utilize their services. In this presentation, a process for selecting laboratories will be described where candidate laboratories provide potential clients with an Initial Demonstrations of Capability (IDC). The IDC is designed to provide information to show that the laboratory has the technical capability to meet the project DQO's under the conditions expected during the monitoring. The sample analysis data required in an IDC, determinations of the limits of data acceptability, assessment of IDC data, and ranking of multiple laboratories will be discussed. Finally, methods to employ in evaluation of project data will be presented, including format of the laboratories reports, and interpretation and integration of QC sample results to assess the overall quality of the monitoring data.