

Quality Assurance: The Key To Successful Environmental Programs

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Comprehensive Quality Assurance Programs for environmental measurement activities ensure successful project completion and program integration. Quality Assurance Programs no longer comprise solely of quality control (QC) tools typically associated with the laboratory but have expanded to address the quality of activities from field sample collection to data analysis. Projects must be designed to not only achieve project specific objectives but must produce data that is comparable between projects, various programs, agencies and disciplines.

There are two main reasons why programs must be more comprehensive. Resource managers are moving towards using "watershed-based" approach which requires oversight of many resources and their interaction. Historically, resources were managed independently and not with respect to any movement of this resource to other geographical areas. Also, there are several Agencies assessing the health or status of the environment on a national level. For instance, the Environmental Protection Agency has initiated the Environmental Monitoring and Assessment Program (EMAP). EMAP has to deal with comparability issues within each of their components, e.g., the Near Coastal component, and between components, e.g., between the Near Coastal and Desert components. The U.S.G.S. also has a national program, the National Water Quality Assessment Program (NAWQA), addressing the quality of the streams and groundwater. Although this Program has a single overall goal, the Program will be utilizing monitoring data from resident agencies. All of these programs, national or regional, face the same data comparability issue.

The second major reason is that is causing data comparability problems is technology is rapidly advancing. Combining data that was measured with different capabilities causes problems due to the differences in methods, detection limits and instrumentation. These have changed considerable during the past few years but especially over the past couple of decades.

Documentation with a minimum key elements are integral to evaluating data and determining if and how data is comparable. There are several existing tools and some initiatives underway to accomplish these goals. Several examples from the Chesapeake Bay Program as well as other U.S. Environmental Protection Agency initiatives will be presented to illustrate these concepts.