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by *Dr. William S. (Bill) Hitchcock*
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The Selection of an Environmental Laboratory: What to Do and What Not to Do

Successful laboratory programs depend heavily on the shared understanding of the end data user's needs. The person responsible for selecting the laboratory must understand the data user's needs and communicate those needs to the laboratory. Laboratory selection cannot be made until the data quality objectives have been established.

The end data user's needs determine the data quality objectives (DQOs). The DQOs are used to select the level of required performance (LORPs). The LORPs include methods, detection limits, and quality control limits. Not all laboratories can meet the levels that you may require, or even perform the analytical methods you may require.

Determination of the qualifications of a laboratory is obtained through a recent audit performed by a qualified chemist who has a clear understanding of your DQOs. The audit(s) should be augmented with performance evaluation samples, which are samples of known concentration that are sent to the laboratory for analysis and reporting. Their analysis provides a check of both the laboratory's equipment capabilities and its quality control program. The reporting process is also reviewed during this test to see if the laboratory does indeed deliver all the required data in a usable format, and in a timely manner.

The two most common causes for failure of an analytical program are failure to clearly define DQOs and failure to clearly communicate them to the laboratory. Expectations, such as LORPs deliverables, schedules, and special quality control needs, must be clearly communicated with the laboratory. Using a data form that can serve as a checklist is highly recommended. Once you have identified two or three labs that can and will do what you need, then price can be considered. The saying "You get what you pay for" generally applies at this point in an evaluation. If a laboratory has substantially lower rates, the auditing chemist might discover that is due to a cost-cutting practice that would

render the data results unsuitable for your use. However, under some circumstances it is possible to lower prices by leveraging other projects. ■

Biographical Sketch

DR. WILLIAM S. (BILL) HITCHCOCK has 30 years of experience in environmental chemistry, serving CONOCO and DuPont Environmental in the 1980s and 90s. He presently serves as President of W. S. Hitchcock, Inc., which provides consulting on chemistry, environmental chemistry, data validation/review, and sampling. With more than 20 years' experience, he has managed the quality of chemical data. He also serves as Principal Chemist of Environmental Litigation Associates, is a Primary Lecturer for the Institute of Environmental Technology (<http://www.ela-iet.com/>), and provides litigation support and expert testimony in chemistry and environmental chemistry to industry and the legal community.

