Interpretation of Organic Data

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Introduction and Preface

I have in other books[1] tried to present in considerable detail the requirements for acceptable analysis of environmental samples. I have divided these requirements into the categories of analytically valid and legally defensible, and spent about equal time writing on each. The term "evaluation" has been used to mean analytical worth of data and "validation" to describe the legal compliance side. However in practice what I have noticed in the environmental industry is that some persons who review data tend to spend a lot more time on the legal acceptability rather than the analytical utility of results. There are many reasons for this. It's easier to know and apply the dictates of "thou shall" and "thou shall not". Validation of results for these dictates tend to be more of a book keeping exercise and I may have been as guilty as any other in drawing attention to this essential component of data acceptablity.

The Environmental Protection Agency (EPA) is currently in the process of debating and adopting the Performance Based Measurement System (PBMS) as a paradigm for environmental analysis. In PBMS good science is stressed. This places an extra burden on persons reviewing data as they have to be able to recognize what is good science and what is not. My attempt in this book is to describe what is good science and what is not within the context of organic analysis under PBMS.

I have characterized this business as frequently frustrating but never boring. Every person I have ever met in this business has taught me something. The something may be positive or it may be negative, and in some cases it is accompanied by tense situations, but still my fund of knowledge grows. As always my thanks go out to my editor, Erik Roy at Genium, the owners of Analytical Services, Inc., Robert G. Owens, Jr, G. Wyn Jones, and Billy Paul Dyer, and all the colleagues, peers, and data reviewers with whom I interact in the environmental industry. I am not going to try to list them all, as someone might be slighted that they got overlooked. But if I have ever met you, and this includes all those who I have ever disagreed with, thanks.

R.-K. Smith 31 December, 1999

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[1] Smith, R.-K., 1999. *Lectures on Wastewater Analysis and Interpretation*, Genium Publishing, Schenectady, NY; R.-K. Smith, 1999. *Handbook of Environmental Analysis, Fourth Edition*, Genium Publishing, Schenectady, NY; R.-K. Smith, 1995. *Water and Wastewater Laboratory Techniques*, Water Environment Federation, Alexandria, VA; W. Berger, H. McCarty, and R.-K. Smith, 1996. *Environmental Laboratory Data Evaluation*, Genium Publishing, Schenectady, NY.