



Data Beyond Numbers: Using Laboratory QA/QC to Make Defensible Decisions While Keeping Projects on Time and on Budget

Laboratory analytical data is at the center of decision-making for environmental projects; however, the quality control measurements that make up an analytical report are often overlooked or not well understood. Laboratory QA/QC requirements are commonly perceived as a regulatory checkbox, yet they provide critical information for evaluating data usability, degree of uncertainty, and the overall defensibility of reported data.

This presentation will provide a concise overview of key laboratory QA/QC indicators and how they define the overall quality of analytical data. The discussion will focus on standard QA/QC metrics most relevant to practitioners, including method blanks, blank spikes, sample duplicates, and matrix spikes. It will also provide insight into additional indicators such as surrogate recoveries, elevated detection limits, and data qualifiers—all of which influence how data are reviewed and interpreted. The presentation will further address common laboratory errors or oversights where data may appear acceptable but may not be suitable for the intended project objectives.

Whether you are a novice or a seasoned practitioner, reviewing analytical data can be an intimidating task for many. This presentation will provide clear guidance for practitioners of all experience levels on how to efficiently review laboratory reports without spending countless hours. Attendees will learn how to identify gaps in laboratory QA/QC, improve data interpretation, reduce project risk, and make well-informed decisions that are both regulatory compliant and legally defensible.

Nihila Anthonypillai AGAT Laboratories

Nihila Anthonypillai is the Manager of Technical Services at AGAT Laboratories and brings nearly 30 years of experience in the environmental industry. Over the course of her career, she has worked in a wide range of capacities, steadily advancing through technical and leadership roles.

After graduating from York University with a Bachelor of Science degree, she began her career as a laboratory technician and progressed to the role of Senior Instrument Analyst. She joined AGAT Laboratories in 2005 as a Client Project Manager, where she managed a diverse portfolio of projects for top-tier clients, consistently delivering exceptional service and technical support.

In her current role, Nihila leads technical discussions with both internal teams and clients, providing customized solutions to complex problems. Her work has contributed to improved operational efficiency and enhanced client satisfaction.

Nihila is an active member of the Ontario Environmental Industry Association (ONEIA) and the Canadian Council of Independent Laboratories (CCIL). She also serves on the Ministry of the Environment, Conservation and Parks (MECP) Technical Advisory Committee and participates in several technical working groups. Through these roles, she helps drive regulatory improvements that align with evolving science and technological advancements, benefiting all stakeholder groups.