

Ian McBride

Bio:

Ian McBride is a Senior Chemist at the Water Quality Laboratory for the City of Kansas City Missouri, where he has worked for 4 years. He has Bachelor's degrees in Biochemistry and Political Science from William Jewell College. He knows that serving the public is a labor of love and is excited to discuss all the nitty, gritty considerations we must make in our roles.

Abstract: The Biochemical Oxygen Demand analysis, aka BOD analysis, is a measurement of dissolved oxygen used in wastewater samples during the incubation period which is 5 days. It is an index of the biodegradable organics and oxygen used to oxidize inorganic materials in water. A key aspect of this analysis is the use of a seed in effluent samples. This presentation will cover the pros and cons on using an internal versus commercially available seed.

John Morrione

Bio: John is an environmental chemist currently working for the City of Kansas City, MO at the KC Water Quality Laboratory. Since beginning his career, he has developed a passion for solving complex problems and helping to drive continuous improvement in fast-paced environments. He is a graduate of Truman State University where he studied chemistry and music. John has a broad range of experience in laboratory testing in both environmental and manufacturing laboratories.

Abstract: Total Phenolics and Total Cyanide analysis is required extensively throughout drinking water and wastewater monitoring programs throughout the United States. With increasing scarcity of testing throughout environmental contract laboratories, smaller laboratories and municipalities must find ways to bring certain analyses in-house to complete required testing and stay relevant. Continuous flow chemistry is an effective method to analyze drinking water and wastewater for Total Phenolics and Total Cyanide concentrations and is currently being used by the KC Water Quality Laboratory. This presentation will outline the steps taken to get a new instrument up-and-running and the issues and hiccups along the way.

Jacob Schwoerer

Bio: Jacob Schwoerer (Sh-where) is currently employed by the City of Jefferson as Wastewater Treatment Plant Manager and has over 10 years of experience in Wastewater, both in the private and public sector. He received his Bachelor of Science degree from the University of Wisconsin-Stevens Point in Water Resources with minors in both Soil Science and Wetland Science. In addition, he received his Master of Science degree from the University of Missouri in Natural Resource Management. He holds a Class "A" Wastewater Operators license and is a past Chair of the MWEA Laboratory Practices Committee. In his free time, Jacob enjoys spending time with his wife and two daughters, being involved in outdoor recreation, and working in his ever-expanding garden.

Abstract: The EPA defines Total Suspended Solids (TSS) as the dry weight of all solid particles that are suspended in a known volume of water. These particles can be inorganic (like sand, silt, and clay) or organic (like algae and decomposing matter). High TSS is associated with increased water turbidity which reduces water clarity, hinders light penetration, and can disrupt aquatic plant growth. Furthermore, the decomposition of organic matter within TSS consumes oxygen, further threatening aquatic life. TSS has always been among the most quintessential parameters for evaluating wastewater quality and are crucial for ensuring environmental compliance. The most widely accepted method for measuring TSS is with SM2540D. Thus, it is essential to understand this procedure, calculations, and quality assurance/quality control of this method.

Lucas Grothoff

Bio: Lucas Grothoff is the Laboratory & Pretreatment Supervisor for the Jefferson City Wastewater Treatment Facility. They have worked for the Jefferson City Wastewater Treatment Plant for 5 years in the lab. Lucas graduated from Lincoln University in Jefferson City with a bachelor's degree in agriculture-Natural Resource Management and a minor in GIS.

Abstract: This presentation will focus on general laboratory safety along with some of the main precautions to take in a laboratory setting. The topics covered in this presentation will include dealing with chemicals, PPE, hygiene, and the importance of having a safety program.

Sam Smith:

Bio: In April 2026, Sam Smith rejoined the Water Protection Program within the Missouri Department of Natural Resources as the Minor Domestic Permits Unit Chief. They first started

with the department four years ago in Clean Water Compliance and Enforcement, which introduced them to state government and regulating water pollution. After a little over two years, Sam took a position in the department's Division of Energy as a research analyst working on grant and loan programs and solar and nuclear initiatives in the state. Sam Smith was very excited to be back in the water world as their undergraduate studies at Northern Illinois University were related to Water Science. They are passionate about protecting environmental quality and helping others understand the impact they have on Missouri's waterways. They currently live in Columbia with their cat, Misty.