Stormwater Pollutant Chemistry: Monitoring & BMP Effectiveness

Course ID: SWM-402

March 17 - 18, 2015, 8 A.M. to 5 P.M. (2 Days)
Hampton Inn and Suites, Main Conference Room
900 North Canal Road, Lansing, Michigan

Overview: This practical and highly acclaimed course provides a comprehensive overview of stormwater pollutant chemistry and its applications to stormwater monitoring and BMP effectiveness. Topics include an overview of stormwater contaminant sources and characteristics, transport and fate, BMP selection and performance, current research, and emerging treatment technologies. The topics provide essential information for understanding and managing stormwater pollutants for permit compliance.

Course Topics

General Stormwater Chemistry
- Stormwater Chemistry Principles
- Chemo/Pollutographs
- Stormwater Monitoring
- Grab versus Composite Sampling
- Event Mean Concentrations
- Pollutant Loads
- Whole Effluent Toxicity (WET)
- Managing First Flush
- Sediment Chemistry
- Common Pollutant Sources
- Atmospheric Deposition
- Contaminant Transport and Fate
- Metal Pollutant Properties
- Organic Pollutant Properties
- Partitioning Coefficients
- Complexation & Speciation
- Cation Exchange
- Redox Potential
- Acidity (pH)
- Alkalinity and Hardness
- Conductivity

Stormwater Pollutant Properties
- Thermal Pollution
- Solids (Turbidity, TS, TSS, TDS, and

Stormwater Pollutants (cont.)
- PAHs
- PCBs
- Phthalates
- Pesticides and Degradates
- Pathogens

Stormwater Treatment Processes
- Coagulation/Flocculation
- Precipitation
- Sedimentation
- Flotation
- Laminar Separation
- Vortex Separation
- Screening
- Filtration
- Sorption
- Temperature Reduction
- Acid/Base Neutralization
- Volatilization
- Disinfection
- Biodegradation
- Phytodegradation
- Soil Processes

BMP Effectiveness

SSC) • Nanoparticles • Acid/Base Generating Material • Metals (Al, Ag, As, Cd, Cr, Cu, Fe, Pb, Hg, Ni, Pb, Se, Sb, and Zn) • Salts and Other Minerals • Nutrients • Oxygen Demanding Pollutants • Oil and Grease • Antifreeze Glycols • Detergents, Soaps and Other Surfactants • Endocrine Disrupting Chemicals (EDCs) • Persistent Organic Pollutants	• BMP Selection Criteria • Performance Assessment • International BMP Database • Concentration Reduction • Load Reduction • Efficiency Ratio • Summation of Loads • Effluent Probability Method • Online vs. Offline Facilities • Treatment Trains • TAPE Approved BMPs • Zero Valent Iron Applications • Biochar Applications • Engineered Streambeds • Permeable Reactive Weirs

Intended Audience: Water quality professionals seeking an improved understanding of stormwater chemistry and its applications to stormwater monitoring and BMP effectiveness. Scientists, engineers, enforcement and field staff, program managers, and permit writers will benefit from attending.

Education Level: Introductory/refresher to intermediate. Current research and advanced topics are included to ensure all experience levels benefit from attending.

Course Materials: Course proceedings and reference material.

Credit: 15 PDHs and 1.5 CEUs for completing 15 hours of instruction.

Registration: $495 (save $100 per additional person when registering a group: $395 per guest). Register online or by calling us at (800) 385-0783.

Hotel Accommodations: Hampton Inn and Suites (workshop location). Click here for a map of nearby hotels.

Parking: Free on-site parking.

Course Webpage

About the Instructor: Erick McWayne has over twenty years of experience in water quality and environmental chemistry. He has conducted numerous water quality investigations and taught over 100 related courses. He currently provides consulting support to water quality projects and teaches courses in stormwater chemistry. groundwater chemistry, contaminant transport and fate, and hydrogeology.