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¹Center for Earth and Environmental Science - Indiana University – Purdue University Indianapolis, 723 West Michigan Street, Room SL118, Indianapolis, IN 46202

Taste-and-Odor Occurrences Associated with Resident Cyanobacteria in a Central Indiana Drinking Water Supply Reservoir.

Algal metabolites are central to many source-water issues. Some of these compounds are toxic to aquatic organisms, cattle, and pets and sometimes to humans. When present in waters, cyanotoxins can pose serious risks for public health. On the other hand, algal metabolites such as taste-and-odor (T&O) compounds that affect source-water odor have no known effects on human health. Research in this area has drawn little attention despite the fact that aesthetics are the primary criteria to determine consumer confidence in the safety of a water supply. In addition, these compounds (MIB, geosmin) account for the majority of reported T&O, with substantial costs to water, food industries and fish farms each year.

Eagle Creek Reservoir, a eutrophic water body providing drinking water to the City of Indianapolis, IN has been experiencing T&O episodes since the early 2000's. Long term patterns show that T&O events have become more intense and more frequent these past five years. The presence of algal metabolites in the water reflect changes in the algal community structure but also provide chemical 'clues' of changes in the dynamics of a few key-species known to produce T&O. The monitoring and the understanding of these changes have significant management implications for local water companies that try to deal with elevated seasonal concentrations of MIB and geosmin that may occur in water supplies.