



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 11 2017

OFFICE OF WATER

Dr. Edward Askew
Askew Scientific Consulting, LLC
2952 155th Street
Muscatine, Iowa 52761

Dear Dr. Askew:

Thank you for your letter of April 19, 2017, requesting the Environmental Protection Agency Office of Water develop a clarification document for the use of Significant Figures and Rounding of Results as they apply to regulatory compliance monitoring.

We appreciate you raising this important issue to our attention. Based on your conversation with Adrian Hanley of my staff on June 21, 2017, we agree that if permitting authorities do not use the appropriate number of significant figures and employ improper rounding techniques, this could lead to an inappropriate assessment of compliance monitoring results. We also agree that your verbally presented position on significant figures and rounding of compliance results is a scientifically valid and reasonable approach for assessing compliance monitoring data.

Permitting authorities, primacy states, or concerned citizens may contact the EPA with questions or concerns about how rounding should be applied to analytical results and used for regulatory compliance. When individual or unique queries are received, the EPA responds with a recommendation for the specific issue. Please be advised that the EPA's response is only a recommendation. Ultimately, the Safe Drinking Water Act (SDWA) primacy agencies (most often states) for drinking water and Clean Water Act (CWA) permit writing authorities for waste water, have the responsibility to implement their programs and they retain the right to establish more stringent reporting requirements for significant figures and the rounding of analytical results. These entities have the final authority on how rounding should be implemented and our understanding is that many of the states have their own rounding procedures.

The Office of Water continues to recognize WSG 21 as an accurate approach when reporting drinking water compliance data. The regulatory limits established as Maximum Contaminant Levels (MCL) are expressed with the applicable number of significant digits permitted by the accuracy and precision of the specified analytical procedure. Drinking water health advisories, ambient water quality criteria and technology-based effluent limits are similarly expressed with the applicable number of significant digits. In addition, for both SDWA and CWA compliance measurements, the EPA allows primacy agencies and permit writing authorities the flexibility to

adopt the approach identified in "Standard Methods for the Examination of Water and Wastewater", 1050 B, 22nd Ed.

Again, thank you for your letter and for bringing this important issue to our attention. If you have further questions, please contact Adrian Hanley of my staff at hanley.adrian@epa.gov or (202) 564-1564.

Sincerely,



Michael H. Shapiro
Acting Assistant Administrator