

December 2, 2002

To: Water Resources Discipline

From: Peter F. Rogerson, Senior Chemist  
Office of Water Quality

For: LeRoy Schroder, Chief  
Branch of Quality Systems

Subject: Approval of a Water Quality Analytical Method for the Determination of Geosmin and Methylisoborneol in Water

The Office of Water Quality (OWQ) has approved a new water-quality analytical method by the U.S. Geological Survey (USGS) Organic Geochemistry Research Group, Lawrence, Kansas for the determination of the taste and odor compounds geosmin and methylisoborneol in filtered water. The method uses solid-phase microextraction followed by gas chromatography/mass spectrometry. USGS method number O-2137-02. This water-quality analytical method approval follows the technical procedure specified in OWQ Tech Memo 98.05. The Open File Report (OFR) is entitled:

Methods of Analysis by the U.S. Geological Survey Organic Geochemistry Research Group - Determination of Geosmin and Methylisoborneol in Water Using Solid-Phase Microextraction and Gas Chromatography/Mass Spectrometry, by L. R. Zimmerman, A. C. Ziegler, and E. M. Thurman. U.S. Geological Survey OFR 02-337.

The 2 taste and odor compounds are determined the calibration range from 5 to 100 ng/L, with method detection limits for the two analytes of about 2 ng/L. Mean recoveries of the analytes in 3 different matrices and two concentrations were 93 percent for methylisoborneol with a relative standard deviation of 3 percent and 93 percent for geosmin with a relative standard deviation of 20 percent. The Organic Geochemistry Research Group, Lawrence, KS, refers to this method as Analysis Code GCG. The National Water Information System (NWIS) Parameter Codes and Method Codes for these analytes are:

Geosmin and Methylisoborneol by USGS Method Number O-2137-02

Parameter Code	Method Code	Analyte Name
62719	T	Geosmin, Water, Filtered, Recoverable, ug/L
62749	T	Methylisoborneol, Water, Filtered, Recoverable, ug/L

The fixed value for the analyzing agency (parameter code 00028) is: 82013 (District Research Water-Quality lab, Lawrence, KS.)

If you would like a copy of the report when published, please contact Betty Scribner ([scribner@usgs.gov](mailto:scribner@usgs.gov)) (785) 832-3564. If you have questions about the method approval process, please contact Pete Rogerson ([rogerson@usgs.gov](mailto:rogerson@usgs.gov)) (303) 236-1836.