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United States Department of the Interior

U.S. GEOLOGICAL SURVEY

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Denver, Colorado 80225

NATIONAL WATER QUALITY LABORATORY TECHNICAL MEMORANDUM 1994.13

August 25, 1994

To: Assistant Chief Hydrologist for PC&TS
Regional Hydrologists
Chief, Office of Water Quality
Assistant Chief, Office of Water Quality
Deputy ACH for PC&TS for NAWQA
Area Hydrologists
District Chiefs
Regional Water-Quality Specialists
Assistant Regional Hydrologists for NAWQA
District Water-Quality Specialists
Chiefs, NAWQA Study-Units
Chief, Ocala Project Office
Chief, Yucca Mountain HIP
QA Manager, Yucca Mountain Project
Chief, Branch of Quality Assurance
Employees, National Water Quality Laboratory

From: Peter F. Rogerson, Chief
National Water Quality Laboratory
Branch of Analytical Services

Subject: National Water Quality Laboratory Reporting Level for the Oil and Grease in Bottom
Material Analysis

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Revision: None

PURPOSE

The approved method for Oil and Grease in Bottom Material Analysis is published in Techniques of Water-Resources Investigation of the United States Geological Survey, Chapter A3, "Methods for the Determination of Organic Substances in Water and Fluvial Sediments" by Wershaw and others (1987). The method number for the analysis is O-5108-83. This publication states that this method is suitable for dry samples containing at least 1,000 mg/Kg (milligrams per kilogram) of oil and grease. However, the reporting level in the National Water Quality Laboratory (NWQL) Services Catalog is listed as "1 mg/Kg." It is necessary to correct this situation for samples analyzed after

October 1, 1994, and conform to the method specifications for a reporting limit of 1,000 mg/Kg. The NWQL sincerely apologizes for any inconvenience caused by this error.

The reporting limit in the national database and Schedules, Parameters, and Network (SPN) Program will be changed to <1,000 mg/Kg, effective October 1, 1994.

Each District Office should review their data reported prior to October 1, 1994. All data reported as <1 mg/Kg should be changed to <1,000 mg/Kg. All data reported between (and including) 1 mg/Kg and 1,000 mg/Kg should be changed to <1,000 mg/Kg.

SCOPE

The NWQL recognizes that this reporting limit of 1,000 mg/Kg may be of limited utility to our district customers. We are considering two options for lowering this reporting limit.

First, NWQL could investigate increasing the sample size from 1 to 10 grams, which may lower the detection limit to 100 mg/Kg. This would result in a change in data quality and thus require a method prove-out and Open-File Report. Costs for that development and documentation efforts would be recovered through higher prices for the analysis.

Second, NWQL could offer a U.S. Environmental Protection Agency (USEPA) method which has a 50 mg/Kg reporting limit. However, this method uses Soxhlet extraction and is substantially more complex than our existing method and thus would be expected to be more expensive.

By this memo, NWQL is polling our district customers to determine what changes, if any, we should make to this method. If your district is interested in this analysis, please have your Water-Quality Specialist send EDOC to RBRENTON with the following information (providing a copy to your Regional Water-Quality Specialist).

1. Would you prefer no change in the oil and grease method for bottom material and no change in the reporting limit of 1,000 mg/Kg?
2. Would you prefer a modest development effort resulting in a USGS method with a lowered detection limit of about 100 mg/Kg?
3. Would you prefer a more complex and expensive USEPA method with a detection limit of 50 mg/Kg?
4. Please estimate the number of samples that your district may submit for oil and grease in bottom materials in a typical water year.

Supersedes: none

Key Words: oil and grease in bottom material

Distribution: See above plus the continua USGS.labnews & .waterquality

Impact on National Data Base: All data from NWQL for oil and grease in bottom material that was reported below 1,000 mg/Kg should be replaced by <1,000 mg/Kg.