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SUBSTITUTION OF EXTRACTION SOLVENTS FOR METHYLENE CHLORIDE

JUN 9 1988

Mr. Fred Tidwell
U.S. Department of the Interior
Bureau of Reclamation
Safety Office, D-160
P.O. Box 25007
Denver, Colorado 80226

Dear Mr. Tidwell:

This letter is in response to Mr. William C. Klostermeyer's request of May 20, 1988, to replace methylene chloride in EPA Method 3510 with "...substitute chemicals, procedures, and methods to perform the requested laboratory work".

At the present time, the Agency does not have any other solvent system available for the extraction of semivolatile organic compounds with the powerful solvating properties of methylene chloride. Methylene chloride is sufficiently polar to extract polar organics from a wide variety of matrices as well as having the capability to extract relatively non-polar compounds from these matrices.

Research into alternative solvent systems to replace methylene chloride as a general solvent for semivolatile organics is being conducted by our research laboratory in Cincinnati. To date, no equivalent alternative solvent system has been developed to satisfactorily replace methylene chloride in removing hazardous substances from difficult matrices and converting them to an analyzable form.

For specific compounds, however, it is possible to substitute other extraction solvents for the methylene chloride. An example would be the use of toluene as an extraction solvent for polynuclear aromatic hydrocarbons. We would be happy to discuss, with you, potential solvents for specific situations.

The Agency will continue to strive to find a replacement

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solvent system for methylene chloride as the general extraction medium for semivolatile organic compounds. In the meantime, one must continue to use this solvent following all proper safety precautions in order to generate valid data. We will keep you informed as to progress in this area of alternative extraction media and method validation.

If we can be of any further assistance, please feel free to contact Barry Lesnik of my staff at FTS 382-4761.

Sincerely yours,

Original Document signed

David Friedman, Chief
Methods Section (WH-562B)