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QC REVIEW OF PERMIT DATA

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

NOV 1 1990

Mr. Michael C. Stroh
Trace Organics Supervisor
PDC Laboratories, Inc
P.O.Box 9071
Peoria, Il 61614

Dear Mr. Stroh:

Here are my answers to the QC questions you raised in your October 19, 1990 letter to me.

You indicated concerns raised recently with your data raised during permit reviews. In the Environmental Protection Agency, the responsibility for performing such reviews is a Regional one not a Headquarters one. While I will offer my technical observations on the matter shortly, I urge you to contact Region V (Ms Valerie Jones, Quality Assurance Officer) for Official guidance. I appreciate that PDC intends to comply with EPA's intent with regard to QC issues, while offering competitive, legally and scientifically defensible analytical services to your clients.

Matrix spike recovery intends to furnish two important pieces of information in the analytical process. First, it will assist you in ascertaining and correcting for co-extracted artifacts which attenuate the analytical procedure's quantitation -- analytical bias compensation. Secondly, it will assist you in determining if the particular analytical scheme is applicable to the specific set of conditions presented by particular samples to your laboratory. As you will see, my subsequent answers to your questions are consequences of these two uses of matrix spike recovery data.

Your choice of, "performing a matrix spike on every waste's TCLP extract" is within the scope of the June 29, 1990 TCLP rule. As you are aware the similarity of samples is more than simply being a TCLP leacheate, and more than being just a solid, liquid,

or sludge type waste, and probably quite process specific. Over time your historical data might be marshalled to demonstrate that various waste types really are identical with respect to matrix spike recovery of a given analytical method. You have made the most prudent choice for now.

The proper reporting of non-detected analities is of concern. The limit of detection will vary depending on the analytical matrix as well as the cumulative effects of reagents, technique, procedure, and materials. The matrix spike provides a means of adjusting the level of detection, a compensation for analytical bias. When it is applied, it may as you indicate, "force the waste generator to either certify for that compound, or manage the waste as hazardous." When faced with this situatation, you can, it seems to me elect anomg several alternatives:

* Repeat the analysis
* Change the process, analyst, equipment handling, cleaning, reagents, instrumental calibration schedule
* Choose a different analytical scheme

The point being that one is much better off with a positive, identified, measured, constituent than a non detect. If I confused you when we talked, I hope it is clear now. Actually, the way that you were operating is quite acceptable. But it would be incorrect to substitute the QC check standard for the matrix spike.

Because the QC check standard provides different information than the matrix spike, it is not possible to substitute one for the other. The QC check standard, reports the degree of control that exists in performing the analytical process within the laboratory. On the other hand, the matrix spike reports the adequacy of the methodology in estimating the true value in a given set of samples. In those instances when the matrix spike associated with a particular batch is below that expected in the method, you need to correct the sample result or alter the process or select a different method. If the QC check sample shows the method to be in control, it seems to me, that you may need to use a different method (assuring yourself that it too is in control) -- hopefully one that has a better recovery.

I hope that my comments have been helpful. They are intended to be technical information only. Please seek approval from Region

V. Also feel free to call me with any further questions you may have (201-382-4761).

Sincerely yours,

Original Document signed

Charles Plost
Senior Chemist
Technical Assessment Branch