



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

JAN 21 1992

OFFICE OF WATER

MEMORANDUM

**SUBJECT:** Determining Industrial User Compliance Using Split Samples

**FROM:** Richard G. Kozlowski, Director *by Mary Jo*  
Enforcement Division

**TO:** Mary Jo M. Aiello, Acting Chief  
Bureau of Pretreatment and Residuals

This memo is a response to your letter of September 30, 1991, where you requested written clarification regarding the use of split samples for determining industrial user (IU) compliance under the Pretreatment Program. Specifically, you requested guidance on how to use the data from split samples for determining IU compliance in situations where split samples yield different analytical results. The fundamental question posed by your inquiry is whether all analytical results must be used when evaluating the compliance status of IUs and how to use those results for determining compliance. In situations where split samples exist and both samples were properly preserved and analyzed, POTWs should evaluate compliance with applicable Pretreatment Standards in the manner described below.

When evaluating the compliance status of an industrial user, the POTW must use all samples which were obtained through appropriate sampling techniques and analyzed in accordance with the procedures established in 40 CFR Part 136<sup>1</sup>. The Environmental Protection Agency (EPA) has consistently encouraged Publicly Owned Treatment Works (POTWs) to periodically split samples with industrial users as a method of verifying the quality of the monitoring data. When a POTW splits a sample with an IU, the POTW must use the results from each of the split samples.

A legitimate question arises, however, when a properly collected, preserved and analyzed split sample produces two different analytical results (e.g., one which indicates compliance and the other shows noncompliance, or where both indicate either compliance or noncompliance but the magnitudes are substantially different). In these instances, questions arise regarding the compliance status of the IU, and what should be done to reconcile the results.

<sup>1</sup> See Memorandum, "Application and Use of the Regulatory Definition of Significant Noncompliance for Industrial Users," U.S. EPA, September 9, 1991.

There is inherent variation in all analytical measurements, and no two measurements of the same analyte (even when drawn from the same sample) will produce identical results. When a split sample is analyzed using appropriate methods, there is no technical basis for choosing one sample result over the other for determining the compliance status of a facility. Since this is the case for all split samples which have been properly analyzed, the POTW should average the results from the split and use the resulting average number when determining the compliance status of an IU. Using the average of the two sample results avoids the untenable situation of demonstrating compliance and noncompliance from the same sample.

If the split sample produces widely divergent results or results which are different over a long period of time, then the cause of the discrepancy between the analytical results should be reconciled. When this happens, the POTW should investigate Quality Assurance and Quality Control (QA/QC) procedures at each laboratory involved. For example, the POTW could submit a spiked sample (i.e., a sample of known concentration) to the laboratories involved (preferably blind) to determine which laboratory may be in error.

In situations where one or both of the analytical results is determined to be invalid, there are compliance and enforcement consequences. If one of the analytical results is determined to be invalid, the average value for that sample is also invalid. In this situation, the value for this sample should be the value of the sample which was not determined to be invalid (e.g., if the IU's results are determined to be invalid, the POTW should use its sample for assessing compliance, and vice versa). If both samples are determined to be invalid, the averaged result from that sample should be discarded and not used for compliance assessment purposes. In either case, the POTW must recalculate the compliance status of the IU using all remaining valid sample results.

In summary, whenever split samples are taken and both are properly preserved and analyzed, the POTW should average the results from each sample and use the averaged value for determining compliance and appropriate enforcement responses. Where the sample results are widely divergent, the POTW should instigate QA/QC measures at each of the analytical laboratories to determine the cause of the discrepancy. If one or both of the samples are invalid, the POTW must recalculate the compliance status of the IU using all valid results.

If you have any further questions regarding these questions, please feel free to call me at (202) 260-8304. The staff person familiar with these issues is Lee Okster. Lee can be reached at (202) 260-8329.

cc: Cynthia Dougherty  
Regional Pretreatment Coordinators  
Approved State Pretreatment Coordinators  
Bill Telliard