

"Accurate News" is a publication of Accurate, Inc. Environmental and Laboratory Services

## LINK IN THE CHAIN...

### Eliminate the Weak Link in the Chain of Custody

The Chain of Custody, which accompanies the sample from the sampling site to the lab, is an essential legal document which tracks the sample through each contact person in the chain of responsibility. And, it is this form which records the identity of the sample and any information about its testing requirements. No testing can begin properly unless the Chain of Custody is completed.

Though it is so obviously crucial to laboratory procedure, the Chain of Custody is an often neglected report. Remember, each testing event is unique requiring separate documentation. And, most of the information on the Chain of Custody form can be provided only by the client, so he or she must be certain to record all necessary facts when relinquishing a sample to a lab. In the matter of a legal question, the written records of the analysis would have to endure the scrutiny of court. So, thorough written records certainly would benefit the client and laboratory in defending against any challenges. Both the client and laboratory must take responsibility to accurately  
(see Chain, cont. on back)



### Oklahoma Clean Focuses on Diazinon

Oklahoma Clean, a group formed by OSU Coop. Extension agents, municipalities and related state agencies, is devoted to the exchange of information on urban pesticide education programs.

Currently, diazinon is the focus of Oklahoma Clean, though they recognize that this pesticide is not the only culprit in toxicity failures at municipal water departments. The group has available several brochures on alternative pest management techniques and more educational materials and library displays will be available in the next few months. If you would like more information on Oklahoma Clean, please contact Cathy Koelsch, Oklahoma County OSU Cooperative Extension, 930 N. Portland, OKC, OK 73107 or call (405) 278-1125.

By Todd Umruh, Marketing Manager

## VISION OF PRECISION...

### Accuracy and Precision; Is There a Difference?

The terms, "accuracy" and "precision," are often considered synonymous by those who haven't suffered through a course in analytical chemistry or statistics. However, they each have an important and unique definition. In simple terms, accuracy is how close an analytical result is to the "target" or true value. In many cases this value is itself in some doubt but has been accepted by many analysts as a reference standard.

Precision is a measure of how reproducible a number is. When considering precision the analyst is not concerned with whether or not the result is "correct," only whether the result can be achieved again in further analysis. So how do these two concepts affect you as a recipient of lab data? Do you want a lab to be accurate or precise? Both are equally important. You want the lab to be able to give you that result time after time.

There are several ways to check for a lab's ability to do this. Looking at a lab's results on performance studies such as the EPA, WP or WS is one check of  
(see Precision cont. on back)

**Chain cont.**

record the origin, and analysis of each sample. This record begins with the Chain of Custody.

By Todd Unruh, Marketing Manager

**Precision cont.**

accuracy. Another is to submit a check sample that has known values confirmed by a number of other labs. Precision is a little more difficult to ascertain. Look for numbers close to 100% on the lab's duplicate results. Also, check to see that the lab is following consistently its own QA/QC manual and standard operating procedures.

Although it is more costly and slower, a check sample may be submitted repeatedly over time and the results compared for precision.

By George Drye, Lab Manager

# What You Can See in the QA/QC

QA/QC reports indicate a laboratory's ability to produce both precise and accurate data. There are two main parts to the report: Duplicate Recovery and Spike Recovery. Together they can help reveal if the data is or is not reliable.

Duplicate Recovery measures precision. Randomly selected samples are reanalyzed in an attempt to duplicate the original result. Then, Percent Duplicate Recovery is a comparison between the original sample and the duplicate. Of course, recovery values near 100% are desirable. But, numbers below 90% and above 100% are not uncommon in solid QA/QC.

Spike Recovery measures accuracy. The sample, or sometimes deionized water, is spiked with a known amount of a test parameter such as lead. The spiked sample is then analyzed for lead and the result compared to the known spike amount.

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Again, a number that is close to 100 % is the most desirable. The spike is a measure of how accurate the result is to a known value.

So, when reviewing your next report, look at the QA/QC information. It will reveal the level of accuracy and precision in the data.

By Derek Kelly, QA/QC Coordinator



**Across**

1. The "D" in TDS
3. Type of acid for preserving samples for metal analysis
5. Fecal Coliform testing method
7. Used to sterilize materials by heat and pressure
9. NaCl is a \_\_\_\_\_.
11. Standard handbook for Chemistry
13. Opposite of 8 down
15. Solvent for phenols extraction
17. Protective eye wear
19. Test to determine relative oxygen requirements of water
21. The "K" in TKN

**Down**

2. Container type for oil and grease samples
4. Fecal Coliform holding time
6. TKN is a measure of \_\_\_\_\_ Nitrogen
8. A solution with a pH of 12 is a \_\_\_\_\_ solution
10. Preservative for CN<sup>-</sup> samples
12. Test for Organic Carbon
14. Temp. at which samples should be stored (°C)
16. Instrument for weighing samples
18. To heat a liquid and condense its vapors
20. Instrument for anion/cation analysis (abbr.)
22. Test related to BOD
24. Superfund Amendments Reauthorization Act(abbr.)

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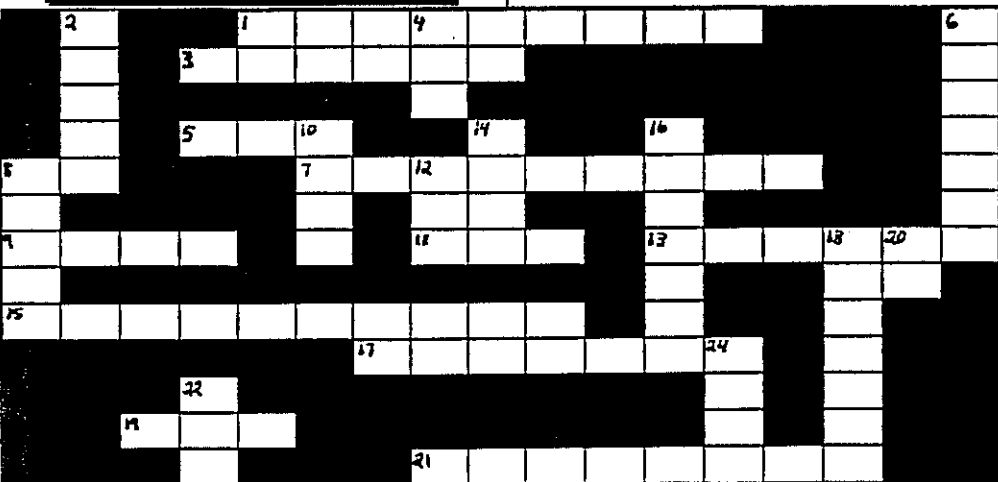
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OKC.....405 236-5333

Tulsa.....918 587-5300

Enid.....405 237-5353

Wichita.....316 683-1123



Crossword by Mindi Crosswhite, Asst. Lab Mgr. & Kristen Howald, Wetchem Asst. Mgr.