BROOKS RAND LABS
MEANINGFUL METALS DATA

Brooks Rand Labs Memorandum

Re: Blank Correction of Trace Metals Data

Dated: February 11, 2011

While blank-correction of data is generally discouraged by the EPA, this is not always true for the analyses of low-level metals. When the EPA promulgated EPA Methods 1631E (for total mercury) and 1630 (for methylmercury), those methods explicitly allowed for blank-correction of the data if at least three method blanks were prepared and analyzed with the samples. EPA Method 1630 actually calls for blank-corrected data (Section 12.4.1) and does not even offer the option of not blank-correcting. Based on conversations between our staff and staff at the EPA's Office of Water (Bill Telliard and Richard Redding, specifically), we believe that once other 1600-series low-level metals methods are fully promulgated (e.g., Draft EPA Methods 1638, 1640, etc.), the same blank-correction policy will be incorporated into those methods. At Brooks Rand Labs (BRL), we prepare and analyze four method blanks with every batch of samples and if the standard deviation of those blanks meets our strict acceptance criteria, then the mean of the method blank results is subtracted from the sample results automatically by our LIMS.

Blank correction of the data is the only way to report truly accurate analytical results for low-level trace metals. For example, method blanks for total mercury (Hg) by EPA Method 1631E can be anywhere from 0.03 – 0.35 ng/L, depending on the batch of reagents used for the preparation of the bromine monochloride (BrCl). Ambient water concentrations for total Hg can often be < 1 ng/L. Without blank correction, the reported data can be biased high by a significant amount!

Nearly all of the data produced by our laboratory is method blank corrected. All of our control charts and QC control limits are based only on blank-corrected data. For the very rare clients that require data to not be blank corrected for some reason (<1% of our total workload), we require higher SDG minimums and we impose additional fees.

BRL has been involved in many high-profile government projects where we are providing data over the past several years (including for many ORAP sites), and in every case where the issue of blank-correcting the data has come up, the decision has been made to continue to have BRL blank-correct our data.

The industry standard amongst labs performing low-level trace metals analyses is to method blank-correct the data. If the goal of the project is to achieve the most accurate data at low concentrations, method blank-correction is crucial. Otherwise, low-level data can be biased. At BRL, we are dedicated to providing our clients with the most accurate data possible, and to that end, we blank-correct all data. This is clearly explained to our clients up-front in our quotations, because we realize this is different from how standard-level metals data is treated, and we want our clients to understand how important it is when we are reporting samples results at very low levels.

If you have any further questions regarding BRL's blank-correction policy, please feel free to contact Michelle Briscoe, Vice President of Analytical Services, at 206-632-6206 (ext. 117) or via e-mail at michelle@brooksrand.com.