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FAX TRANSMITTAL SHEET

DATE: **April 01, 2013**

TO: **Laboratory Director and QA Manager**

FROM: **Steven D. Baker, Office Chief**
Laboratory Licensure and Certification

Subject: **Information Update #115**

Pages: **5 (including cover)**

NOTE: **If any of the pages are missing, please call (480) 284-6869 or (602) 364-0720.**

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Health and Wellness for all Arizonans

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Information Update

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Update #115

1. **With the publication of Methods Update Rule in the Federal Register on May 18, 2012, several new methods were approved. One of them was the Dissolved Oxygen by Luminescence based sensor by HACH 10360, Revision 1.2, October 2011; the slightly revised version (HACH corrected some errors after ADHS brought them to EPA's attention, in sections 9.2.1; 9.3.1; 9.4.3) can be accessed at the following site:**

   http://www.azdhs.gov/lab/documents/license/environmental-lab/facilities/ww-hach-method-10360.pdf

   Several labs commented that the QC requirements were unclear from the method; so we decided to summarize the calibration and quality control requirements for DO analysis. All the QC listed below must be implemented in the fixed licensed labs by July 01, 2013 and it will be a couple of years before calibration verification and precision accuracy sample will be enforced for field on-site DO testing.

   Synopsis: Water saturated air is prepared and the LDO is placed in the saturated air portion and the reading is saved into the instrument. The LDO meter will display the barometric pressure for the calculation. To confirm the instrument calibration was done properly, that it was at equilibrium, the air saturated water is prepared and its' theoretical value is compared to the actual reading of the probe in air saturated water. If the reading is within 95-105% then the calibration is assumed to be done correctly.

   Prepare water saturated air as per section 7.1

   - **Add approximately 1 inch of reagent water to a clean BOD bottle and stopper.**
   - **Shake vigorously for ~ 10 seconds**
   - **Allow for the BOD bottle and its contents to equilibrate to room temperature. Room temperature should be approximately 20 ± 3° C.**
   - **The stopper may now be removed from the BOD bottle and the LBOD probe inserted into for calibration purposes (the value is input into the probe).**

Prepare air-saturated water as per section 7.2

- **Add approximately 1500 mL of organic-free water or BOD dilution water to a 2-L beaker or PET bottle.**
- **Allow the water to equilibrate to room temperature. Room temperature should be approximately 20 ± 3° C.**
- **With a steady gentle stream of filtered air (˜ 10 – 40 mL per minute), aerate the water for a minimum of 30 minutes. Alternatively, vigorously shake the reagent water or BOD dilution water for several minutes.**
- **At the completion of aeration, let water re-equilibrate to room temperature (20 ± 3° C) for 30 minutes**
- **Note the barometric pressure of the laboratory during preparation.**
- **The barometric temperature reading is used in the calculation and determination of the theoretical DO concentration for the prepared air-saturated water.**
- **Transfer the aerated water to a BOD bottle until overflowing and stopper**
- **Calculate the theoretical dissolved oxygen concentration using a dissolved oxygen table**

  http://water.usgs.gov/software/DOTABLES/
- **Take the reading with probe in air saturated water (CCV); should be within 5% of theoretical calculated value**

Quality Control requirements:

- **Water saturated air is used to initially calibrate the instrument.**
- **An analytical batch is a set of samples processed during a contiguous 8-hour period, not to exceed 20 samples.**
- **An initial demonstration of laboratory capability (air saturated water): Prepare and measure four samples of the IPR standard (Section 7.2) and recoveries should be within 5%. Precision should be within 2.1%.**
- **Analyze air saturated water per batch (CCV) and both initial and on-going DO values should be within 5%.**
- **Laboratory performance is compared to the established performance criteria to determine if the results of analyses meet the performance characteristics of the method. Ongoing precision and accuracy data is documented. See Tables 4 and 5 for historical limits.**

2. **The following methods were Director Approved:**

- **EPA method 334.0, "Determination of Residual Chlorine in Drinking Water Using an On-line Chlorine Analyzer", August 2009, EPA 815-B-09-013.**

- **SM 2540E, Volatile Suspended Solids in Wastewater, Standard Methods for the Examination of water and wastewater (20th Edition, 1998).**

3. **DMR-QA Study 33:**

The deadline for participants to acknowledge receipt o y and submit Permittee Address Verification Form to DMA-QA State coordinators has been postponed from March 25, 2013 to April 05, 2013.

4. **http://www.epa.gov/epahome/hotline.htm**

This is kind of a neat website; it has hotline numbers for EPA for anything you can think of that EPA is connected with.

5. **EPA 300.1- sparging of sample to remove chlorine dioxide:**

Section 4.6 of the method specifies the following:
Any residual chlorine dioxide present in the sample will result in the formation of additional chlorite prior to analysis. If any concentr on of chlorine dioxide is suspected in the sample, the sample must be purged with an inert gas (helium, argon or nitrogen) for approximately five minutes or until no chlorine dioxide remains. This sparging must be conducted prior to ethylenediamine preservation and at time of sample collection.

IC chlorite sample sparging.pdf

EPA's procedural document on how to sparge the samples can be found in the above link.

6. **Electronic signatures on Chain of Custody documents:**

The EPA is working on drafting a new records policy that should address the allowance of electronic signatures on the COC documents. Currently it is not allowed.

7. **Glyphosate by EPA Method 547:**

Holding times for Glyphosate samples are confusing with different verbiage being used in the method, EPA Cert Manual and Standard Methods. EPA's response for this was the holding time is 14 days unless a study is performed to confirm the frozen holding times.

8. **Typo in EPA Method 302:**

We received a clarification from EPA on the contradictions on the frequency of LFSSM CCC in the method-

a. **Tables 5 and 6 and section 3.11 require the above QC in the beginning of the run.**

b. Sections 7.5 and 9.3.3 require them after CCC at the end of the run.

It was clarified that it was required at the beginning of the run, but it wouldn't hurt to run again at end to confirm nothing had changed during the batch, but it's most critical early.

9. Please contact Prabha Acharya @ (480) 284-6869/(602) 364-0720 or acharyp@azdhs.gov for any technical or method related questions. The earlier Information Updates can be accessed @ http://www.azdhs.gov/lab/license/tech/infoup.htm