From:	Colene Gaston
To:	Barnett, Mary; Clem, Sarah; Osborne, Caleb; Wentz, Tate
Cc:	Robert Morgan; Larry Lloyd; Alan Fortenberry; Ray Avery; haggard@uark.edu; John Pennington (john@beaverwatershedalliance.org); Randy Easley (randy.easley@carkw.com); Darcia Routh (Darcia.Routh@arkansas.gov); Ryan Benefield; ldriver@usgs.gov; bjustus@usgs.gov; selena.medrano@epa.gov; Malcolm, Jim
Subject:	Assessment Methodology Workgroup Meeting
Date:	Wednesday, February 22, 2017 8:34:44 PM
Attachments:	2017 02 22 BWD Draft Mark-up of ADEQ Draft Beaver Lake Assessment Methodology.pdf

Hello, Mary, Sarah, Caleb, and Tate,

First, I have been sick the past few days and will not be travelling to Little Rock tomorrow for the meeting of the Assessment Methodology workgroup. Dr. Bob Morgan will be taking my place at the table. I would, however, like to listen to the meeting by phone. Will you please let me know the call-in number?

Second, I very much appreciate all of the effort that went into preparing the numerous documents that Mary sent to the workgroup members yesterday and today, even if you were not able to complete the preliminary draft mark-up of the 2016 Assessment Methodology as anticipated. I suspect, however, that many of the workgroup members (myself included) will not have had an opportunity to adequately review the documents before tomorrow's meeting. Because of this, ADEQ should not assume that comments or the failure to comment necessarily represent the final position of the workgroup members.

Last, attached is my markup of ADEQ's draft markup of the Beaver Lake section that Mary sent out today. It includes questions and suggested language changes, which I noted by hand since the ADEQ mark-up was sent as a pdf (as an aside, workgroup members will be more easily and clearly able to respond to future ADEQ draft mark-ups if they are sent out as Word documents). Bob will be able to explain the rationale for the suggested changes. I didn't copy all of the workgroup members on this email; just those whom I thought might have a particular interest in the Beaver Lake criteria and assessment methodology.

Thanks again for the opportunity to participate in the Assessment Methodology workgroup. Have fun tomorrow! Colene

Colene Gaston
Staff Attorney
Beaver Water District
P.O. Box 400
Lowell, AR 72745
479.756.3651 phone
479.717.3824 fax
cgaston@bwdh2o.org

Should this be the period of record for all Reg. 2 water quality criteria that are annual averages?

The period of record for the 2018 305(b) Report is:

Metals and ammonia toxicity analysis: *April 1, 2014 to March 31, 2017*

Beaver Lake site specific nutrient criteria: January 1, 2012-December 31, 2016

All other analyses: *April 1, 2012 to March 31, 2017*

What does this mean?

Phase II Data Quality Considerations for Nutrients (Beaver Lake)

1. Temporal requirements

- Secchi Disk Transparency
  - Secchi disk transparency depths should be measured throughout the year or period of record. Beaver Lake Secchi disk readings will be assessed on a calendar year.
- Growing Season Chlorophyll a Geometric Mean
  - Chlorophyll a should be collected during the growing season. Growing season is defined as May – October per Reg. 2.509(B).

2. Minimum distribution and quantity requirements

A minimum of ten (10) monthly samples per calendar year

- Secchi Disk Transparency
  - ~~Twelve (12) evenly distributed discrete samples~~ are required ~~per year~~ to calculate an annual average.
- Growing Season Chlorophyll a Geometric Mean
  - ~~Five (5) evenly distributed discrete samples are required per growing season~~ to calculate a geometric mean.

A minimum of

3. Spatial requirements

monthly samples from May through October are required

- Secchi Disk Transparency and Growing Season Chlorophyll a Geometric Mean
  - All data shall be collected at the Hickory Creek site over the old thalweg, below the confluence of War Eagle Creek and the White River in Beaver Lake.
- Chlorophyll a ~~sample depth shall not exceed one (1) meter~~ samples shall be collected within the epilimnion.

ASSESSMENT METHODOLOGY FOR NUTRIENTS

To date, assessment methodologies for nutrients have only been developed for, and only apply to, wadeable streams and Beaver Lake. Methodologies were developed defining "wadeable" as fourth order streams and smaller using Strahler stream order (Strahler 1952). Site verification and best professional judgement was used to ensure safety at each location regarding actual wade-ability.

LISTING METHODOLOGY FOR BEAVER LAKE:

The upper portion of Beaver Lake will be listed as non-support of its domestic water supply designated use when there are three or more (≥3) exceedances of the chlorophyll *a* criteria within the five-year period of record. Samples collected ~~1.0 meter below the surface of the water~~within the epilimnion will be used to make lake and reservoir attainment decisions.

The upper portion of Beaver Lake will be listed as non-support of its domestic water supply designated use when there are three or more (≥3) exceedances of the secchi transparency criteria within the five-year period of record.

DELISTING METHODOLOGY FOR BEAVER LAKE:

The upper portion of Beaver Lake will be listed as supporting its domestic water supply designated use when there are no more than two (2) exceedances of the chlorophyll *a* criteria *and* no more than two (2) exceedances of the secchi transparency criteria within the five-year period of record. Samples collected ~~1.0 meter below the surface of the water will be used~~within the epilimnion to make lake and reservoir attainment decisions for chlorophyll *a*.