

**Assessment Methodology Stakeholder Workgroup**  
**MEETING MINUTES**  
**12 January 2017, 1:00pm-4:00pm**  
**ADEQ Commission Room**

**Stakeholders present:** Teresa Turk (BRWA), Darcia Routh (ADH), Alice Andrews (Ozark Society), Vince Blubaugh (AEF), Jim Malcolm (AEF), Shawn Hodges (NPS), Colene Gaston (Beaver Water District), John Pennington (Beaver Watershed Alliance), Ellen Carpenter (APPP), Ryan Benefield (ANRC), Jamie Ewing (Arkansas Attorney General's Office), Matt McNair (ADPT), Justin Stroman (AGFC), Randy Easley (AWWMA – Drinking water), Mary Barnett (ADEQ), Caleb Osborne (ADEQ), Sarah Clem (ADEQ), Tate Wentz (ADEQ), Jim Wise (ADEQ), Selena Medrano (EPA, phone)

**1:13 – 1:27 Welcome and Introduction**

**SARAH CLEM:** Proposed to wait on presenting the redline strikeout to allow more time for a better product and suggested to keep the scheduled February meetings.

**TERESA TURK:** Suggested ADEQ submit redline strikeout by January 23, allowing three days for review before January 26 meeting.

**SARAH CLEM:** Clarified that she was proposing not to meet on January 26, but meet on February 9<sup>th</sup> and 23<sup>rd</sup> as scheduled.

**COLENE GASTON:** Supported a decision to wait on redline strikeout due to concerns that there would not be enough time to cover all topics in today's meeting.

**JUSTIN STROMAN:** Mentioned AFS meeting would conflict with a January 26 meeting date.

**TERESA TURK:** Consented to a date change but noted she would like to keep the current momentum and cover all topics before redline strikeout.

**DARCIA ROUTH:** Agreed and stated she also had a conflict for January 26 meeting.

**TERESA TURK:** Suggested January 24 or 25 as an option for next meeting.

**RYAN BENEFIELD:** Stated the soil and water conference in Jonesboro would conflict with January 26 meeting.

**SARAH CLEM:** Stated she will look into the Commission Room schedule for January 24.

**RYAN BENEFIELD:** Volunteered use of the ANRC Commission Room if needed.

**1:27 – 2:11 Discussion of 25<sup>th</sup> and 75<sup>th</sup> percentile of nitrogen and phosphorus data and continued discussion of 6.9 Nutrients Assessment**

**SARAH CLEM:** Presented charts with calculated 25<sup>th</sup> and 75<sup>th</sup> percentile nitrogen and phosphorus data. Explained charts are a response to Shawn Hodge's comment regarding evaluation of long term total nitrogen and total phosphorus.

**RANCY EASLEY:** Expressed appreciation for the charts but noted there is no significant change over time, and the relatively slight variation could be due to the resolution of analysis.

**COLENE GASTON:** Also expressed appreciation for the charts. She would have liked to see how the 75<sup>th</sup> percentile applies to only reference streams - instead of all streams.

**TATE WENTZ:** Responded that is a tedious process and quite an investment in time and energy. If needed, we will address.

**COLENE GASTON:** Commented that she assumed this was something ADEQ has already done.

**TATE WENTZ:** Responded the least disturbed evaluations are from 1986. We do small scale evaluations but not for all monitoring stations in the ecoregion.

**COLENE GASTON:** Asked if there is long term data available for each ecoregion.

**TATE WENTZ:** Replied we are slowly moving towards that and will be identifying impacted and least disturbed.

**SARAH CLEM:** Interjected that we are currently doing this in the Ouachita Mountains Ecoregion.

**COLENE GASTON:** Asked what is an appropriate baseline? Do we use 75<sup>th</sup> percentile of least impacted? ADEQ doesn't have (least impacted) information at this time?

**TATE WENTZ:** Responded that in theory, ERW should be considered least impacted; however, this could set us up for not being protective. So, as we move through the state we will develop least to most disturbed gradient for each ecoregion. But, this will take time.

**COLENE GASTON:** Asked if we are forced to look at all streams for now?

**TATE WENTZ:** Replied the idea is to focus on the most impacted.

**COLENE GASTON:** Asked since we are looking at all streams (not considering the pristine) is 75<sup>th</sup> percentile appropriate? What about 50<sup>th</sup>? Or 60<sup>th</sup>? Since we don't have numeric criteria, where should we start? Why automatically go all the way to the 75<sup>th</sup> percentile?

**SARAH CLEM:** Suggested the conversation was on a fine line between criteria and assessment. Since we do not have numeric criteria, we have to develop appropriate assessment methodology to evaluate the narrative criteria we do have. We have to do the best we can without numeric criteria. I think what you are saying is we need a numeric criteria.

**COLENE GASTON:** Replied "no that's not what I'm saying". I mean, we do need a numeric criteria, but if - in the absence of numeric criteria - we just consider the most impacted? Is it possible to produce a list of possible impacted streams to give to the public? Are the 75<sup>th</sup> percentile data for all streams? Your assessment methodology is only for wadeable streams, but you're already mixing data points - Did you mix non-wadeable and wadeable to come up with this 75<sup>th</sup> percentile?

**TATE WENTZ:** Responded we looked at all streams for this exercise, due to time constraints. We have defined wadeable streams as 4<sup>th</sup> order streams and less, and we would have to go back in time to designate each stream to do that.

**COLENE GASTON:** Asked how does that skew the data?

**TATE WENTZ:** Responded that including large rivers lowers the values. In the 2014 and 2016 cycle, the all stream data is actually lower than the wadeable streams.

**COLENE GASTON:** Commented that was counterintuitive to her; seems like the headwaters should be more pristine.

**TATE WENTZ:** Replied or the headwaters are more impacted by nutrients.

**RYAN BENEFIELD:** Commented that we need to look at the numbers. We need to understand that conceptually 75<sup>th</sup> and 25<sup>th</sup> percentile is a prioritization method. If we move to 25<sup>th</sup>, then we will need to look at streams at .03 for all flow conditions. These numbers are so low – compared to the work we did in Oklahoma – it doesn't make sense to say streams at .02 need more work, when we should be focusing on .07 – which is still really low. Keep in mind these numbers are really low and this should be about prioritization.

**COLENE GASTON:** Commented that she is not pushing for 25<sup>th</sup> percentile, but did we do a 50<sup>th</sup>? The Oklahoma data gives us some info on a similar ecoregion where there was an adverse impact. I'm curious what is the 50<sup>th</sup> percentile?

**RYAN BENEFIELD:** Clarified that in respect to the Oklahoma data, a statistically significant shift is not an adverse impact.

**SARAH CLEM:** Asked if Colene Gaston is stating she would like to see the 50<sup>th</sup> percentile data.

**COLENE GASTON:** Explained that she does not want to be unreasonable or unrealistic, but she is concerned about setting the initial threshold too narrow. I'm happy to listen to other arguments, but I would like to know what the 50<sup>th</sup> (or 60<sup>th</sup>) percentile looks like.

**SARAH CLEM:** Referred to the flow chart on page 48 and gave a hypothetical example of running through the flow chart with 50<sup>th</sup> percentile. We have to follow this to be consistent with the narrative. Having a larger pool at 50<sup>th</sup> percentile – based on data and my experience – the larger population doesn't change anything. What's the benefit?

**COLENE GASTON:** Replied that you don't miss streams that might be impaired.

**SARAH CLEM:** Asked if Colene Gaston is saying you want more streams going through this process?

**COLENE GASTON:** Responded "yes". Ideally, you take every stream through the process, but realistically you can't do that. Asked how can we test if we are missing streams by setting the initial threshold at 75 percentile?

**SELENA MEDRANO:** Commented that of all the streams that go through the flow chart process, some come out impaired, some not impaired. Opening up more is a lot of work with not much return. I'm not sure opening it up to include more would be beneficial.

**TERESA TURK:** Asked if you don't have the 2 72-hour diurnal data, do you go out and get the data?

**SARAH CLEM:** Replied it does happen. In reference to the flow chart: Hypothetically, if we only have one diurnal dataset, we can't just go out and get a second if we aren't in the appropriate season.

**TERESA TURK:** Asked if during the 5 year period of record, if you notice issues – if it appears a stream may be impaired, can you focus on that stream and ensure that you collect the data?

**SARAH CLEM:** Asked if the question is regarding protocol?

**TERESA TURK:** Replied "yes".

**SHAWN HODGES:** Asked why there are roughly 800 more samples in the 2014 and 2016 nitrogen and phosphorus data for the Boston Mountains?

**TATE WENTZ:** Replied that some of these varied by sampling efforts and that we had moved through the Boston Mountains for a sampling project during those cycles.

**SARAH CLEM:** Asked Teresa Turk if she wanted clarification as to our protocol as streams move through flow chart? How do we prioritize? What changes that protocol?

**TERESA TURK:** Replied “yes”. But, it also hasn’t changed over time. I really appreciate you guys getting these charts together. I recommend that if these streams are looking like they aren’t going to meet criteria, ADEQ should gather the 2 72-hour diurnal datasets – so that you prioritize. I recommend you do everything you can to not put them in the insufficient category.

**SARAH CLEM:** Noted Teresa Turk’s recommendation had been captured and agreed to look at 50<sup>th</sup> percentile nitrogen and phosphorus data.

**COLENE GASTON:** Commented that she understood what Selena Medrano is saying. If we are setting the threshold at 75<sup>th</sup> percentile of least disturbed – or 25<sup>th</sup> percentile of all streams – and the assessment methodology allows a 10% exceedance: What percentile range does it get you if you take a criteria developed number and then allow 10% exceedance of that...? For example: If we set a standard at .03, and allow a 10% exceedance under the assessment methodology – what type of number does that translate to in terms of percentile?

**SARAH CLEM:** Asked Colene Gaston for clarification.

**COLENE GASTON:** Replied that she wants a way to translate a value (.03) at the 25th percentile.

**TATE WENTZ:** Responded that is not possible because the exceedance value will vary.

**SELENA MEDRANO:** Explained that exceedance is not based on the magnitude. There is no way to determine a maximum number.

**COLENE GASTON:** Replied ok, never mind on that.

**MARY BARNETT:** Suggested we can continue these discussions when we try to determine the numeric criteria, but for now we want to focus on the assessment methodology.

**ELLEN CARPENTER:** Asked what is the protocol for prioritizing Category 3? You have the assessment methodology, and then you have to run your numbers: There is limited time between the assessment methodology and the 303(d), so if there is no extra data for streams, then they are going to go into Category 3. So, how do you determine which of those streams are prioritized for the next round of sampling?

**SARAH CLEM:** Responded that a prioritization protocol, if developed, would take that into consideration.

**ELLEN CARPENTER:** Asked do we have adequate data to evaluate wadeable streams?

**SARAH CLEM:** Replied “yes”.

**ELLEN CARPENTER:** Asked if you have listed any Category 5 as a result?

**TATE WENTZ:** Replied “no”.

**DAVID PETERSON:** Commented that four of six ecoregions have high nutrient values and read a quote from EPA website revealing that Arkansas historically had a numeric standard in existence for algae. What happened to it?

**SARAH CLEM:** Replied “I don’t know”.

**DAVID PETERSON:** Commented that when you talk about assessment, criteria enters the story.

**CALEB OSBORNE:** Agreed they are related, but our purpose here is to discuss the assessment of criteria.

**DAVID PETERSON:** Replied that he understands, but if you are assessing excessive nutrients, you have to assess algal growth.

**SARAH CLEM:** Asked if David Peterson is suggesting numeric criteria for algae?

**DAVID PETERSON:** Replied that it's a dilemma. There is a precedent for numeric.

**SARAH CLEM:** Responded "I agree". I don't know how it got removed. We are working to develop numeric criteria.

**DAVID PETERSON:** Commented "great".

**TERESA TURK:** Commented that there are several places in the nitrogen phosphorus charts where there could be insufficient data. How many came up with category 3 – insufficient data – in these charts?

**TATE WENTZ:** Responded that it is high. We are working to reduce the percentage that go into category 3. With the ambient biological network, we are increasing sample size and with paired data we can start lowering that number. In some cases, probably greater than 50% went into category 3. It's a good point. We can focus on those on the edge.

**TERESA TURK:** Replied "excellent". The capability was not there with the lack of personnel previously, but you are looking into it. Is that fair?

**SARAH CLEM:** Agreed. You bring a good revelation – which could be seen as the next step: the evolution of this.

**TERESA TURK:** Commented that if it's a funding or personnel problem, let the governor know!

## **2:11 – 2:25 Break**

## **2:25 – 4:13 Discussion of Assessment Methodology Sections**

**MARY BARNETT:** Commented that she would like to briefly touch on what Sarah mentioned about the redline strikeout. The redline strikeout was intended to be ADEQ's revisions to the group – a clarification of ADEQ's comments. It was not intended to be the final revision of everything put together.

**MARY BARNETT:** Commented that there has been good nutrient discussion and several comments on initial threshold. We have input to consider and look at more thoroughly. Now, to address one of the previous comments: *Assessment methodology for non-wadeable waters*. What are the group's thoughts on how we might use a different or similar methodology for non-wadeable waters?

**COLENE GASTON:** Responded this was our comment. Beaver Water District. The answer may be developing numeric nutrient criteria.

**MARY BARNETT:** Replied "we agree". EPA allowed for states to choose a waterbody class to start with, ADEQ is starting with wadeable streams. Lake types are on our radar. There has been a request for a definition of wadeable – we are looking into that.

**MARY BARNETT:** Read the next comment for discussion: (page 12) *The methodology for listing and de-listing should match. De-listing should be at least as stringent as listing.* We agree. We looked at language and see how some aspects weren't carried forward to the de-listing. Our intent is for them to match.

**TERESA TURK:** Asked if the definition for wadeable will be included in the redline strikeout?

**MARY BARNETT:** Replied "yes". Everywhere there is an ADEQ comment, we will show you the revisions we've worked through. We've put a lot of effort into this and want to make sure it's all the way flushed out before we give it to you. We've covered the topics. As far as changing the assessment of algae in ERW and karst – we hope to get to that.

**TERESA TURK:** Asked if we can move that to a higher priority on your list? We've seen some large algal blooms this year: Sooner than later is my request/recommendation.

**SARAH CLEM:** Asked Teresa Turk to clarify if she meant as a discussion topic.

**TERESA TURK:** Responded that she thought Mary Barnett said we are going to prioritize.

**SARAH CLEM:** Replied that we are going to internally prioritize discussion topics.

**COLENE GASTON:** Asked what is the definition of paired data? Does that mean biological, chemical and physical data all collected within the same calendar year? That doesn't make much sense. Page 13 of public policy comments – Dr. Burkholder

**TATE WENTZ:** Replied that water quality data is collected on a monthly cycle. Historically, the department was not looking at periphyton or biomass. As we have moved forward with the ERW, we implemented periphyton. We collect algae in the summer, fish in the summer, macroinvertebrates in the fall – so those collections are paired for that year. They are paired to avoid getting snippets of data. Does that make sense?

**TERESA TURK:** Replied "yes". In your internal discussions, which areas are you prioritizing? How do you make those decisions? That kind of transparency would be nice and help eliminate some of these questions.

**COLENE GASTON:** Asked if you can incorporate what Tate Wentz said in table 14? Maybe you could expand the footnotes in the chart to include more explanation.

**MARY BARNETT:** Responded that we will look into better defining paired data.

**MARY BARNETT:** Let's move into 5.1 Biological Integrity – page 5 of combined comments, page 6 of Assessment Methodology.

**SARAH CLEM:** Read Dr. Burkholder's comments aloud – extensive comments on Biological Integrity.

**SARAH CLEM:** Responded that we believe that she was missing a step in the process of assessing for Biological Integrity. Perhaps she wasn't looking at table 10 on page 30. Sarah Clem ran through a hypothetical assessment – pointing out that from Table 8 on page 28, you then must advance to Table 10 on page 30. We are going to clarify in the redline strikeout to ensure that someone doesn't make that mistake.

**RANDY EASLEY:** Asked if Table 8 is across all designated uses.

**SARAH CLEM:** Replied "no". This is aquatic life use only.

**RANDY EASLEY:** Responded "okay".

**SARAH CLEM:** Read aloud AEF comment (page 6, regarding 5.1 Biological Integrity) and responded that states always have the right to support more restrictive criteria.

**SARAH CLEM:** Read the question in the comment: Why is Arkansas' cut-off 75% and EPA's is 54%? Where is the documentation to support that? Sarah Clem responded that we don't have that documentation. We are unable to find that documentation. Fifty-four is a very low acceptable number.

**VINCE BLUBAUGH:** Asked what is the technical basis for changing that number – in light of the EPA national protocol. And, were there specific studies? Why is Arkansas choosing to be more stringent?

**SELENA MEDRANO:** Replied that two of the metrics used in the 1989 document are ratios of functional groups – which are extremely variable. Without those metrics, the support percentage will go up.

**JIM MALCOLM:** Asked if that means the methodology is not as precise? We can set a higher bar because it's not as precise?

**SELENA MEDRANO:** Replied "right". Because you're taking out variables that drag it down.

**JIM MALCOLM:** Commented that the resulting numbers are comparable, but the methodology is apples to oranges? Show us why they are not the same number. If a proportion makes it less precise – we would like to see that and the explanation for us.

**MARY BARNETT:** Asked Selena Medrano to please explain to us one more time.

**SELENA MEDRANO:** Responded that the 1989 document has two functional group metrics which are calculated as a ratio. These two metrics increase the overall variability and are not really applicable to Arkansas. They were taken out. Once variability is taken out, it is going to increase the comparability estimate that is going to be impaired, because of the more precise metric.

**JIM MALCOLM:** Responded we believe you, we just may not understand. Sounds like you are saying Arkansas and EPA aren't so different. We would like to see something that shows the comparison of Arkansas' and EPA's methodologies.

**VINCE BLUGAUGH:** Agreed that providing some comparison would be fine.

**MARY BARNETT:** Stated that we can work toward trying to get that to the group.

**COLENE GASTON:** Asked Selena Medrano what are you taking out when you take out the variability?

**SELENA MEDRANO:** Responded that they took out the overall metric. In the 1989 document there were 12 metrics – Arkansas took out two of the 12: the two variable metrics. When you take something out that is less precise, you get a more precise end result.

**COLENE GASTON:** Replied that was helpful. Thanks.

**JIM MALCOLM:** Commented that maybe we just need an example using some data.

**MARY BARNETT:** Replied that we can work that up and provide it to the group.

**MARY BARNETT:** Read aloud the comment by John Murdock (regarding 5.1 Biological Integrity): "Where is the data"? Mary Barnett responded that we are trying to have a more user friendly web interface for data. At this point, we can provide data with a request.

**MARY BARNETT:** Asked if there are any more questions regarding 5.1 Biological Integrity. After inquiring about a break for the group, it was decided to continue on to 6.6 Bacteria.

**SARAH CLEM:** Stated that Mary Barnett is handing out an EPA guidance summary fact sheet on bacteria. Asked if we can put this on the website?

**TATE WENTZ:** Replied “no”.

**SARAH CLEM:** Commented that the criteria in Reg 2 that we are currently assessing against comes from the 1986 document. The proposed criteria a 126 geometric mean.

**MARY BARNETT:** Commented that the 6.6 Bacteria comments are on page 10 in the complied comments and page 41 in the Assessment Methodology. Comments are in regards to the percentage exceedance rather than revision of a standard. Mary Barnett referenced the first comment – made by National Parks Service – which requests an extension of primary contact season for the Buffalo River. The response by Mary Barnett: The current water quality standards define primary contact season as May to October. For this period, we have to assess that. But, this is a good topic for review during Standards revision.

**JIM MALCOLM:** Affirms that he is in complete agreement with an extension of primary contact season.

**MARY BARNETT:** Referenced the next comment which proposes different criteria are needed for ESW, ERW and lakes. The comment also suggests the same assessment should be applied to tributaries. The response by Mary Barnett: We would appreciate comments on that topic in the standards review.

**TERESA TURK:** Requests that we make a note of these review topics when compiling the final notes and recommendations.

**MARY BARNETT:** Noted that the request had been captured in the minutes and once we start the Regulation 2 stakeholder process, we will provide a list out of the Assessment Methodology workgroup.

**DARCIA ROUTH:** Commented that moving forward with environmental health and improving the swim beach program: If there are no changes in the standard, ADH will have two different programs running – and will be happy to assist in that as well.

**MARY BARNETT:** Read aloud the comment from Beaver Water District – regarding the 25% exceedance for bacteria. Why this departure from 10% found in EPA documents? Mary Barnett responded that the EPA guidance handed out to the group speaks to that.

**SARAH CLEM:** Posed the question in the comment: So, how come we’ve moved away from 10%? Twenty-five has been in place for quite a while. We’ve handled it differently according to the Assessment Methodology. I’m not saying “we’ve always done it that way, and it’s okay”. The document is based specifically on swim beaches. No exceedance rate listed specifically for bacteria. We applied it to rivers and streams – even though it is for swim beaches. There is no absolute answer “why”. There is a 126 geometric mean in the 1986 criteria as well - 410 for all other waters in our regulation comes from this 1986 document. We don’t know the rationale for this exceedance rate: Possibly variability in the analytical method itself?

**COLENE GASTON:** Asked if the method has changed since 1986.

**SARAH CLEM:** Answered that it was just the filtration method.



**RANDY EASLEY:** Responded that bacteria monitoring – filtration method – has approximately 20% variability now – which is pretty good. Quantitative analysis has a particular variability to it – it is better than it was in 1986, but there is still variability.

**MARY BARNETT:** Commented that we still use the membrane filtration method, and other places are still using it as well. Maybe that variability in the method was built into the exceedance rate...potentially?

**SARAH CLEM:** Discussed the previous assessment methodology and explained that historically there were options of full, partial, or non-attainment. At some point there was a lawsuit which resulted in “partial” becoming “non”. Maybe that’s how we came up with 25% exceedance?

**DAVID PETERSON:** Commented that bacteria counts are highly correlated with storm flow, yes? Twenty-five percent exceedance may exclude storm flows from criteria? The high bacteria counts don’t have much impact. I’m not advocating, just pointing out the facts.

**SARAH CLEM:** Asked who is out in the water during storms? Crazy kayakers! Some are in this room!

**JOHN PENNINGTON:** Stated that during storms, those waters would not meet standards. It’s natural.

**SARAH CLEM:** Commented that’s what we’ve been able to come up with for rationale (for the 25% exceedance).

**TERESA TURK:** Suggested that we get closer to the EPA 10% - and be consistent. Is there a good justification for why we can’t move it to 10%? I would argue for more protective and recreational use – for those crazy kayakers – I suggest changing the standard.

**RYAN BENEFIELD:** Commented that we can’t change the Assessment Methodology, because the standard is in Reg 2, so Reg 2 would have to change.

**SARAH CLEM:** Answered “correct”. We would have to change the regulation to clarify how we do it. Read Reg 2.507. We need at least eight samples to carry out the assessment. Geometric mean can be calculated with five samples, but you’re right Ryan Benefield, it is very specific in the regulation.

**COLENE GASTON:** Noted that the regulation is for *E.coli*, not fecal.

**SARAH CLEM:** Replied “that’s right”. When we go out, we use only *E.coli* because it’s a better indicator.

**SHAWN HODGES:** Asked if the 25 geometric mean is for the assessment as well.

**JIM WISE:** Responded that the few times we’ve done geometric means, if it breaks once – it’s listed. But, we very seldom get enough samples.

**SHAWN HODGES:** Noted that NPS collects six sites every month – five samples at each of the six sites – each month, and we calculate the geometric mean.

**DARCIA ROUTH:** Stated that the Corps of Engineers does that as well.

**SARAH CLEM:** Responded that the Corps of Engineers collects at a limited number of locations.

**SHAWN HODGES:** Commented that yes, collecting that many samples is very intensive.

**COLENE GASTON:** Commented that the standard itself – and how it is written in terms of Regulation 2 standards – only a few of them include the Assessment Methodology and the standards.

**SARAH CLEM:** Agreed with Colene Gaston.

**COLENE GASTON:** Asked if it just applies to 25 *E.coli*? What about fecal? How many samples do you have to have? No less than eight samples? Sometimes that's more than once a month!

**SELENA MEDRANO:** Replied that you need eight samples in one season. For example: Say you have one year with eight samples, the next year with two samples and the year after that with only one sample. You're going to go back to the last year that has the complete set of samples – and that is the year you're going to assess. You will just look at that one season of that year. If multiple years have eight samples each, then you will look at each of those years individually.

**COLENE GASTON:** Asked if the 25% is a yearly assessment then?

**SELENA MEDRANO:** Replied that due to the seasonality of bacteria – that is how it is applied.

**COLENE GASTON:** Asked what happens if there are greater than two exceedances in eight samples? Would it be listed?

**MARY BARNETT:** Responded that bacteria is not collected as an ambient parameter and sometimes it is a special study route. We structure bacteria sampling runs to shoot for the eight samples during primary contact season.

**JIM WISE:** Commented that it has a short holding time, and the inspectors can't do it. It has to be special surveys. Planning does bacteria analysis.

**SARAH CLEM:** Commented that we are working in the Ouachita's now. Bacteria sampling is a massive effort – the samples have to be plated in the hotel rooms.

**TERESA TURK:** Agreed that it is challenging and expensive – but important. There seems to be confusion around the table. I recommend clarification with some examples like Selena Medrano used. I recommend that ADEQ provide examples to better show how these methodologies are done.

**SARAH CLEM:** Asked Teresa Turk if she wanted this by the next meeting?

**TERESA TURK:** Replied "yes". That would be great.

**COLENE GASTON:** Commented that these clarifications would be helpful in the Assessment Methodology itself. Introduction provisions that explain the 10%, etc. I've heard if we didn't have all the samples for the five year period that we just throw out the data. Maybe point out that we still look at the data this way if we don't have all the data: Maybe a blanket statement up front or within each parameter. Where does the 25% apply?

**SARAH CLEM:** Noted that these clarifications will be included in the redline strikeout. We want to go parameter by parameter. We want to describe exactly how we are using the 25% for this season, etc.

**RYAN BENEFIELD:** Asked if it was five years or three years on bacteria?

**SARAH CLEM:** Replied that the period of record that is reviewed is only for the data that is represented.

**RYAN BENEFIELD:** Asked what if year two is impaired, but year three is not? You have no data for years four and five. How do you handle it if the most previous year is not impaired, but the earlier year was?

**SARAH CLEM:** Responded that it would be based on the magnitude of exceedance. It would be a best professional judgement call. We would probably not list it. Jim?

**JIM WISE:** Replied that that sounds right.

**RANDY EASLEY:** Commented that he would like to make a suggestion. I recommend you think about an appendix about how you assess.

**SARAH CLEM:** Responded that there is merit to that suggestion: And also merit to describing it parameter by parameter.

**RANDY EASLEY:** Stated that if something comes up along that way that needs adjustment, you could fix the appendix - as opposed to fixing the whole document.

**SARAH CLEM:** Responded in agreement – especially with best professional judgement decisions.

**COLENE GASTON:** Commented that Regulation 2 lines up with the Assessment Methodology and both say 25%, with no option for best professional judgement? Bacteria criteria need to be revised to be more current, then we don't want to waste a lot of time on the current assessment.

**SARAH CLEM:** Agreed that it is ripe for internal review.

**COLENE GASTON:** Commented that the criteria itself may and probably should change. But, I still want to know why 25%. We want to be conservative. Maybe 25% is okay, but I don't know that we have a good feel for WHY 25% is in the criteria and the Assessment Methodology.

**SARAH CLEM:** Responded that these are all good points. We are limited by the criteria itself. We are capturing these points to push forward into triennial review.

**DARCIA ROUTH:** Agreed not to stall on this point – we should address in triennial review. It is our understanding that the 2012 recreational water quality extended beyond just designated swim beaches, but was a body contact standard by the ADH.

**SARAH CLEM:** Asked if we should take a break.

**JIM WISE:** Commented on the frequency and duration section of the bacteria handout. Both criteria have to exceed – this severely restricts what we can do. ADEQ can't get out there and do five samples in a 30 day period.

**DARCIA ROUTH:** Noted that this is a good case for a new method must be at least as stringent.

**MARY BARNETT:** Affirmed that this was a good point for triennial review. Feel like this is a good end point for discussions today. I feel like we've touched on all the comments. Are there any we missed?

**VINCE BLUBAUGH:** Replied that we missed the AEF comment on industrial agriculture water supply.

**MARY BARNETT:** Replied "Oh yes".

**COLENE GASTON:** Commented that she would like to add discussion on specific criteria for greater than 10% turbidity and discussion of all flows, storm flows, base flows, etc.

**MARY BARNETT:** Replied "Ok, turbidity".

**MARY BARNETT:** Commented to please email me if there is something we missed. (barnett@adeq.state.ar.us) Additional comment for discussion: Appropriateness of using secondary drinking water minerals criteria for industrial.

**TERESA TURK:** Commented that she would like a discussion of using geology as well as ecoregion.

**SHAWN HODGES:** Commented that he would like to add ammonia toxicity.

**MARY BARNETT:** Proposed cancelling the second January meeting and giving ADEQ and the workgroup more time. Discussion of remaining issues could continue in another January meeting, and then a review of the ADEQ redline strikeout at the first February meeting (February 9).

**COLENE GASTON:** Commented that when she suggested we wait, she thought the redline strikeout would include the group suggestions – but, the redline strikeout is ADEQ comments?

**MARY BARNETT:** Replied “yes”.

**COLENE GASTON:** Stated that she thinks it would be good to have both. A redline strikeout of the original ADEQ clarifications and a redline strikeout of the workgroup suggestions.

**MARY BARNETT:** Suggested that we should keep them separate for now so the group can have discussion of the ADEQ redline strikeout.

**SARAH CLEM:** Commented that it is our intent to have a public comment period as well. But, we want to get your input before we go out to public comment.

**RYAN BENEFIELD:** Stated that he had requested the original redline strikeout: And until we see those, we don’t know if we have any discussions on ADEQ strikeouts. Maybe we can see both if there is time.

**COLENE GASTON:** Asked if it would be possible to have your clarifications by the next meeting? We could cover the remaining topics and go through your redline strikeout clarifications?

**MARY BARNETT:** Replied that we don’t feel that we are ready to present the clarifications at this time.

**CALEB OSBORNE:** Asked what is the most value to this group? A document that is entirely ADEQ redline strikeout clarification? If that is what is most valuable, then we need to postpone. Have a meeting on February 9 to go over the redline? Or have a meeting the last week in January?

**TERESA TURK:** Asked what if we change the January 24 option to February 2? That gives another week for redline strikeout and then the following week we can finalize on February 9. Is that doable? I am suggesting that ADEQ provide the redline the week of January 30 – then meet again the next week (Feb 9). Or: Give the redlines early the week of January 30, have a meeting on January 30 to knockout the outstanding parameters, and then finalize everything the next week (Feb 9).

**SARAH CLEM:** Asked what do you mean finalize?

**TERESA TURK:** Replied that she meant to finalize the stakeholder process with a list of our recommendations, considerations. Is that too accelerated? I really don’t want this process to go past February 9.

**JOHN PENNINGTON:** Stated that he thinks that’s a little too optimistic.

**VINCE BLUBAUGH:** Agreed that ADEQ has a lot to do.

**SARAH CLEM:** Suggested that maybe we can attempt to complete on February 9, with the option to continue if needed.

**TERESA TURK:** Commented that you have another review process after this one.

**SARAH CLEM:** Responded that next is the public comment period, then we give to the EPA, they review, then we can start assessments, then there is the triennial review.

**MARY BARNETT:** Proposed having the next meeting on January 26...

**RYAN BENEFIELD:** Suggested getting rid of the meeting on the 26<sup>th</sup>, keeping the February 9<sup>th</sup> and 23<sup>th</sup> meetings as scheduled. I would rather you guys take more time to get us a good product. Keep February 9<sup>th</sup> and 23<sup>rd</sup>.

**SELENA MEDARNO:** Agreed.

**CALEB OSBORNE:** Commented that even a few more days to deliver a more beneficial document will help.

**TERESA TURK:** Asked if you can incorporate all of our recommendations into the strikeout, since we are extending the time.

**SARAH CLEM:** Replied “yes”.

**MARY BARNETT:** Commented that the last four or five topics wouldn’t be in the redline strikeout.

**ELLEN CARPTENTER:** Commented that she would like to add one more topic: Rounding up – creating a higher threshold in exceedances.

**MARY BARNETT:** Responded ok, confidence in the assessments. We have looked into replacing rounding up.

**SARAH CLEM:** Commented that we could try to provide an explanation of the comparison. We will try to use email to convey as much information to you guys. We will see you on the 9<sup>th</sup> and the 23<sup>rd</sup> of February.