ENVIRONMENTAL LABORATORY ADVISORY BOARD (ELAB)
Face-to-Face Meeting/Teleconference: 866-299-3188/9195415544#
Webinar: http://epawebconferencing.acms.com/elab-jan17/
Hyatt Regency Houston/Galleria, Houston, TX
January 23, 2017; 1:30 – 5:00 p.m. CST

MEETING SUMMARY

The U.S. Environmental Protection Agency's (EPA) Environmental Laboratory Advisory Board (ELAB or Board) face-to-face meeting was held on January 23, 2017, as a session at the 2017 Forum on Environmental Accreditation in Houston, Texas. The agenda for this meeting is provided as Attachment A, a list of meeting participants is provided as Attachment B, and action items are included as Attachment C. The official certification of the minutes by the Chair or Vice-Chair is included as Attachment D.

OPENING REMARKS, ROLL CALL, MISSION STATEMENT AND OVERVIEW OF BOARD GOALS

Ms. Lara Phelps, Designated Federal Officer (DFO) for the Board, and Dr. Dallas Wait, Chair of ELAB, welcomed the members and guests to the meeting. The Board members who were present and the Board members and guests participating via teleconference introduced themselves.

Dr. Wait explained that the Board operates under the Federal Advisory Committee Act (FACA). ELAB's mission is to provide consensus advice, information and recommendations on issues related to enhancing EPA's measurement programs and facilitating the operation and expansion of a national environmental accreditation program. ELAB provides this advice, information and/or recommendations to the EPA Administrator, EPA Science Advisor and/or Forum on Environmental Measurements (FEM).

APPROVAL OF DECEMBER MINUTES

Dr. Wait asked whether any members had comments on the Board's December 2016 minutes; none were offered. Ms. Sharon Mertens moved to accept the minutes; Dr. Mahesh Pujari seconded the motion. The Board unanimously approved the December minutes.

UPDATES FROM THE DFO

Ms. Phelps reported that ELAB's website continues to be updated, and Agency responses to ELAB products now will accompany the appropriate Board letters and recommendations. These responses still are being populated but should be complete soon. The Office of the Inspector General (OIG) has completed its routine evaluation of EPA FACA committees and boards that mention science or research within their charters, including ELAB. The OIG provided recommendations regarding best practices, one of which was to ensure that EPA responses accompany the appropriate letters and recommendations of FACA committees. Ms. Phelps also explained that ELAB's biennial charter renewal will occur in July 2017.

ACTIVITIES SINCE AUGUST 2016

Since ELAB's prior face-to-face meeting in August 2016, the Board has received EPA's response regarding the methods harmonization recommendations and is drafting its own response letter to EPA. ELAB also continues to work with EPA regarding in-line and on-line monitoring, has developed a proposed set of minimum selected ion monitoring (SIM) criteria, is working on the issue of whole effluent toxicity (WET) testing, has begun to examine cyanide methodology, and is exploring the issue of gas chromatography/mass spectrometry (GC/MS) spectral libraries. The Board is working to provide its opinions and advice about the Drinking Water Certification Officer Training Course and advising EPA about a punctuation error in Method 6010D that results in unnecessary analyses and auditing issues. Finally, ELAB plans to determine whether it will review the Independent Laboratories Institute's document about adding technologies to Method 200.8.

CURRENT TASK GROUP UPDATES

The Board possesses broad expertise and works on a variety of topics identified by ELAB members, the Agency or the environmental laboratory community. The Board addresses these topics through temporary Task Groups. The Task Group leaders or their representatives provided a report of current topics/activities.

Methods Harmony

Dr. Wait explained that the Boardhad provided to the Agency recommendations regarding certain elements of similar methods that could be harmonized (e.g., points on the calibration curve). The recommendations did not ask for complete harmonization. ELAB received a response from the FEM on October 4, 2016, and it appears that EPA believes that ELAB had recommended complete harmonization of methods. The Board will draft a response letter to clarify the intent of its recommendations.

In-Line/On-Line Monitoring

Mr. Michael Flournoy explained that the Task Group has been partnering with EPA staff, including Dr. Joel Creswell (ORD), Ms. Denise Shaw (ORD), Mr. Lemuel Walker (OW), Ms. Janet Goodwin (OW), and Dr. Alan Lindquist (ORD/NRMRL). Several related discussions have occurred at other venues, and previous studies were presented at the 2016 National Water Quality Monitoring Conference in Florida regarding *Escherichia coli* and enterococci, arsenic, harmful algal blooms, and total nitrogen and phosphorous. These studies showed that in-line and on-line monitoring can be used to make real-time decisions and that these sensors must be field deployable, portable and affordable. The drawbacks presented in these studies are consistent with the Task Group's finding that there is little or no consistency with some or many laboratory quality control (QC) elements.

Achievable QC elements include system calibration, control charts, acceptance criteria for available QC elements, and corrective actions when out of specification. Regulations are mostly constrained to batches, and laboratories work in batches; monitors and sensors, however, collect data continuously and not in a batch-specific manner, making batch versus continuous or

instantaneous monitoring a challenging QC element. Also challenging are blanks, blank spikes and matrix spikes.

The original question to ELAB was whether in-line and on-line monitoring could be used for compliance. Although EPA has been using air quality monitoring sensors for some time (as long as the instruments are checked for accuracy regularly through that program's Relative Accuracy Test Audit), obstacles prevent the use of sensors for water quality compliance. Technology is evolving constantly, and the question is whether regulations can adjust to this changing technology. Because of this technological advancement, it is necessary to ask whether manufacturers can use current laboratory quality systems when designing new technology and whether this is cost-effective or efficient. Finally, how can manufacturers use validation for processes that are already defined in the method? The solution may need to include communication among manufacturers, laboratories and EPA.

The Task Group will continue to communicate with EPA to provide insight to new and previously posed questions. The Task Group also is reviewing and will respond to a new EPA formal request that includes lessons learned and more focused questions. The Task Group's goal is to develop a formal recommendation and complete this effort by April 2017.

Ms. Stacie Metzler (Hampton Roads Sanitation Department [HRSD]) volunteered to join this effort. She is working with the Virginia Department of Environmental Quality on use and verification of in-line and on-line monitoring for regulatory purposes. HRSD has volunteered to work with EPA on this issue, as the utility works with a variety of matrices in which it can perform testing. HRSD has in-line monitors for the processing of a variety of elements (e.g., dissolved oxygen). Although the utility does not have effluent data, HRSD would like to collaborate with EPA and see language incorporated into 40 CFR 136 that allows the use of this monitoring for regulatory purposes.

Mr. Ed Askew (Askew Scientific Consulting) commented that much of the on-line work initially was promoted by instrument companies that wanted on-line analysis for method-defined parameters. EPA was expected to provide guidelines 1.5 years ago. Laboratories cannot take shortcuts around QC procedures and still consider it a standard method. Mr. Askew provided an anecdotal story about a laboratory that had been cited because the on-line turbidity meters did not have method detection limits (MDLs) as required by the standard methods. Several elements of QC procedures must be addressed if an on-line method is going to be referenced to a consensus method.

In response to a question from Dr. Wait regarding the scope of the effort, Mr. Flournoy explained that the original scope was too broad, so the focus was narrowed and the Agency rewrote its request. The next steps will focus on product validation and the development of a validation protocol.

Dr. Brian Buckley is concerned that even if the methodologies work well, it is important to consider how the data may be used, although this may be out of the Board's purview.

SIM

Dr. Mike Delaney provided an overview of SIM GC/MS and explained that, during a previous ELAB face-to-face meeting, the Board received a public request to investigate the issues related to SIM GC/MS methods. As a result, ELAB informed EPA about several potential SIM issues surrounding technology and QC, and the Agency indicated an interest in pursuing this effort with ELAB. The established Task Group met several times and gathered information and reviews from SIM experts. Dr. Delaney sent the draft letter and suggested minimum criteria to the Board members on January 18, 2017, for their review. ELAB will discuss the letter and criteria during its February meeting. Dr. Delaney will email the Board members a few days prior to the meeting to determine the amount of discussion that may occur regarding the letter and criteria.

Mr. Brad Meadows mentioned the changes that he had suggested previously, including adjusting the discrepancy between Section E (i.e., number of scans) and the reference to eight spectra in Section G.

WET Testing

Dr. Wait explained that the Board was approached by The NELAC Institute's (TNI) WET Expert Committee in early 2016. The Expert Committee asked ELAB to critique a white paper concerning the quality assurance aspects of WET proficiency testing and possibly provide a letter of support for TNI's recommendation. Dr. Wait presented the draft letter to the Board via PowerPoint, allowing them time to read the letter.

Ms. Deb Waller thought that the letter was positive. She explained that her supervisor is concerned about programs that offer both state and national accreditation. She recommended that ELAB develop an outreach document to provide guidance that helps to increase consistency. Ms. Phelps agreed that the Board could provide guidance to EPA, noting to the Agency that it would be helpful to the laboratory community. The guidance will automatically be made public. She commented that contractual assistance is available to help develop such a document. Ms. Phelps also could send the guidance to her network. She recommended that, if the Board is serious about developing such a document, a remark to this effect should be added to ELAB's letter.

In response to a question from Dr. Richard Burrows (TestAmerica Laboratories, Inc.), Dr. Wait explained that the letter focuses on implementation technologies for laboratories.

Mr. Bob Wyeth (Independent Consultant) asked whether the WET Expert Committee had reviewed the letter. Ms. Phelps noted that the committee members could serve as *ad hoc* members of the Task Group if necessary. Dr. Wait explained that the Task Group had discussed the issue with the committee members, but they had not seen the letter.

Dr. Wait will add information to the WET testing letter to indicate that ELAB may provide guidance and outreach on this topic before he distributes the letter to the Board members; he also will consider allowing the WET Expert Committee members review ELAB's letter.

Cyanide Methodology

Ms. Waller provided the presentation for Dr. Delaney, who was present via teleconference. It is common knowledge that cyanide is poisonous and has a nonzero Maximum Contaminant Level Goal (MCLG) of 200 µg/L. ELAB is aware of issues related to testing drinking water for cyanide and has discussed concerns during several ELAB meetings, including the August 2016 face-to-face meeting. Because cyanide is not carcinogenic or bioaccumulative, EPA seems unlikely to lower the MCLG.

The regulation governing cyanide states that any detected contaminants must be included in the Consumer Confidence Report. Also, cyanide testing is problematic for a number of other reasons. For example, regulatory testing for drinking water is prescriptive, and laboratories must follow the method, including sample preservation. Low-level cyanide "hits" in treated drinking water, however, are likely to be false positives.

ELAB formed a Task Group on drinking water cyanide methodologies that is focusing on cyanide MCLG versus toxicology, occurrence versus minimum reporting levels, and method validation versus preservation. Ultimately, the Task Group plans to provide recommendations to EPA. The Task Group has begun to meet and carefully examine the various aspects of the issue and will update ELAB periodically. Ultimately, the group expects to provide the Board with clear and concise recommendations that it can approve and send to EPA to improve cyanide testing and clarify requirements.

Dr. Keri Hornbuckle asked why this is not addressed through the limit of detection or MDL processes. Dr. Delaney responded that several approved drinking water methods exist within the EPA regulations with a wide range of sensitivities. Dr. Hornbuckle thought that it might be a QC issue rather than a reporting problem. Dr. Delaney explained that the 40 CFR 136 wastewater procedures provide information about ways to address interferences, but drinking water testing is prescriptive, and after following the required preservation methods, the laboratory "gets what it gets." Federal regulations are not clear about what does and does not require reporting.
Ms. Waller added that the limit of quantification might take care of it, but this may be dependent on the instrument. It is a gray area. Mr. Meadows added that the laboratory's MDL process does not necessarily incorporate what Dr. Delaney had described. This is an opportunity for the Task Group to craft the next update.

Mr. Scott Hoatson (Oregon Department of Environmental Quality) noted that this is essentially a "marketing" issue.

Mr. Carl Kircher (Florida Department of Health) asked which types of cyanide are relative to the Safe Drinking Water Act. Ms. Waller responded that the same interference problems occur no matter the cyanide type.

Drinking Water Certification Officer's Training Course

Ms. Mertens reported that, in December 2016, the NELAP Accreditation Council sent a letter to EPA's Office of Water regarding concerns about the Agency's Drinking Water Certification Officer's Training Course; council members attended the Board's December meeting to provide any necessary clarification. ELAB agreed to form a Task Group to review these and other

potential concerns and provide advice. If training is not as beneficial as possible, the laboratory community is significantly affected.

Ms. Mertens distilled the concerns in the letter: the annual course schedule does not facilitate timely training, the cost of travel is prohibitive, students who perform poorly on the course tests must wait 12 months to retest, the current closed-book testing approach may not be the best approach, and time constraints during the course may be unrealistic. The letter offers suggestions for improvement.

The Task Group is planning its first meeting and will examine this issue expeditiously.

Mr. Dan Hautman (EPA/OW) characterized the letter as constructive criticism and appreciates the input from ELAB and the laboratory community but wondered whether it would be redundant for the Board to provide advice. Ms. Mertens explained that ELAB represents multiple stakeholders; if the Board provides advice, the Agency will know that the Accreditation Council has the support of the laboratory community and other stakeholders. Ms. Phelps added that ELAB also may provide additional comments and ideas not included in the Accreditation Council's letter.

Mr. Kircher described training courses that he had attended in the 1990s that included a mock audit and laboratory report. He also described a *Cryptosporidium* course that could be used as a model that includes one trainer acting as an assessor and another acting as a laboratory representative so that the students can hear the question-and-answer session that accompanies an audit. He suggested a month-long training course with modules that students complete at their own pace, with a weekly online mandatory session for everyone. Mr. Hautman thought that the Drinking Water Certification Officer's Training Course is more complex and has more depth than the *Cryptosporidium* course. *Cryptosporidium* has one parameter and two to three methods; microbiology has several methods and parameters, and chemistry has approximately 90 parameters and 90 methods. This level of complexity must be recognized when training auditors for a specific method and parameter, versus training them on many different methods and parameters. Those attending the *Cryptosporidium* course already had completed the microbiology and/or chemistry training.

Ms. Waller thought that the most significant difference could be accomplished by using an open-book approach that simulates the real-world situation and does not reward rote memorization.

OPEN DISCUSSION/NEW ITEMS

Ms. Waller reported that ELAB currently is advising EPA about a punctuation error in Section 11.3 of Method 6010D that results in unnecessary analyses and auditing issues. Mr. Elan Rieser has drafted a letter regarding this issue, which the Board will discuss during its February meeting.

Dr. Wait explained that ELAB also had been considering the GC/MS spectral library issue introduced during the Board's August 2016 face-to-face meeting, but the members are unsure how ELAB can address the issue. Ms. Waller added that GC/MS spectral libraries must be updated to reflect technological changes. Mr. David Speis (Retired) commented that compounds identified in a library do not have all of the necessary qualitative and quantitative information,

but regulatory agencies treat them as if they have this necessary information and design remediation plans for a compound that many not be present. He thought that guidelines on the use of compounds identified in a library search should be developed that explain that the information is not adequate for decision-making purposes. This will help state agencies use their remediation funds more wisely. Mr. Flournoy agreed that information about how to use the data should be available.

Given that the methods provide clear requirements about making identifications, Ms. Mertens wondered why this is not adequate. These requirements should preclude the use of nonqualified/nonquantified data. Mr. Speis agreed that the requirements should preclude the use of these data, but sometimes these data still are used by some agencies. He suggested that ELAB, as an advisory group to EPA, which establishes methodologies for use in environmental monitoring, could develop guidelines that the Agency can distribute to the users of the methodologies to ensure that the information is used appropriately.

Mr. Charles Neslund (Eurofins Lancaster Laboratories Environmental) stated that the specific issue that was introduced during the August face-to-face meeting was related to the reference spectra associated with GC/MS spectral libraries. It relates to the care with which an analyst creates a reference spectra within the GC/MS library for targeted analyte analysis; it is not for broad spectrum library search data. The proposal was to remove the spectra from reference libraries, such as the National Institute of Standards and Technology (NIST), and make them the standard for targeted, analytical GC/MS work. The problem with standardization is that these spectra are generated under different conditions. Ideally, analysts run an individual standard for each reference within the targeted analytical method; this is a different issue than unknown searching.

Dr. Burrows noted that, in a perfect world, the laboratory would run each analysis individually. In the real world, however, it is important that the NIST spectra be used. It would be helpful for ELAB to recommend to EPA that the language in Method 8000D be clarified.

Although he was unable to provide comments during the meeting, Mr. Meadows submitted comments via email following the meeting. He disagreed with the suggestion that an additional warning be placed on the methods for Tentatively Identified Compounds. He has worked with Tentatively Identified Compounds for many years and has never represented them as anything other than what they are. The current disclaimer is enough, and the data user must be trusted to act responsibly.

In response to a comment by Mr. Kircher, Ms. Phelps explained that the Office of Management and Budget's Circular A-119 (*Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*) does not require federal agencies to replace programs that already were established prior to the publication of Circular A-119. The Agency's drinking water program already had standards in place at the time of publication, and has acknowledged that the TNI standards are acceptable for use.

Dr. Burrows commented that the revised Method Update Rule (MUR) includes improvements but also some examples of disharmonization. He encouraged the Board members to review it before it is made final. Ms. Phelps noted that the Agency considered all comments in revising the

MUR, which may not be made final until the current Executive Order regarding *Federal Register* notices is lifted. ELAB can provide any comments during the next MUR cycle.

The Board discussed the possibility of meeting once annually in the summer instead of twice per year. Ms. Phelps recognized that it is a burden for the members' organizations to support their travel to the meetings. The members agreed that the benefits of meeting in person twice per year outweigh the travel burden. Ms. Phelps reminded the participants that ELAB holds its regular monthly teleconference the third Wednesday of each month from 1:00 to 3:00 p.m. Eastern Time; the call-in number and passcode have remained unchanged for more than 15 years. Interested parties always are welcome to attend these monthly meetings in addition to the face-to-face meetings.

REVIEW ACTION ITEMS/CLOSING REMARKS/ADJOURNMENT

Ms. Kristen LeBaron (The Scientific Consulting Group, Inc.) reviewed the action items identified during the meeting, which can be found in Attachment C.

Citing no additional comments or issues, Dr. Wait asked for a motion to adjourn. Ms. Mertens made the motion, which Ms. Patty Carvajal seconded. The meeting was adjourned at 4:15 p.m.

Attachment A

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AGENDA

1:30 – 5:00 p.m.	Opening Remarks, Roll Call, Mission Statement and Overview of Board Goals
	Discussion/Approval of December 2016 Minutes
	Updates From the Designated Federal Officer
	Activities Since August 2016
	Current Task Group Updates
	Open Discussion/New Items
	Review Action Items/Closing Remarks/Adjournment

Attachment B

PARTICIPANTS LIST

Board Members

Attendance (Y/N)	Name	Affiliation
Y	Dr. A. Dallas Wait (Chair)	Gradient Representing: Consumer Products Industry
N	Dr. Henry Leibovitz (Vice-Chair)	Rhode Island State Health Laboratories Representing: Association of Public Health Laboratories
Y	Ms. Lara Phelps (DFO)	U.S. Environmental Protection Agency Representing: EPA
Y	Dr. Kim Anderson	Oregon State University Representing: Academia—Oregon State University
N	Ms. Ann Bailey	EcoChem, Inc. Representing: EcoChem, Inc.
Y (via teleconference)	Dr. Brian Buckley	Rutgers Environmental and Occupational Health Sciences Institute Representing: Academia and Laboratory—Rutgers
Y	Ms. Patricia (Patty) Carvajal	San Antonio River Authority Representing: Watershed/Restoration
Y (via teleconference)	Dr. Michael (Mike) Delaney	Massachusetts Water Resources Authority (MWRA) Representing: MWRA
Y (via teleconference)	Mr. Michael Flournoy	Eurofins Environment Testing USA Representing: American Council of Independent Laboratories
Y	Dr. Keri Hornbuckle	The University of Iowa Representing: Academia—The University of Iowa
Y	Dr. Deyuan (Kitty) Kong	Chevron Energy Technology Company Representing: Chevron
N	Mr. Jeff Loewe	NiSource, Inc. Representing: Industry—NiSource, Inc.
Y (via teleconference)	Mr. Brad Meadows	BSK Associates Representing: Commercial Laboratory—BSK Associates
Y	Ms. Sharon Mertens	Milwaukee Metropolitan Sewerage District Representing: The NELAC Institute
Y (via teleconference)	Dr. Mahesh Pujari	City of Los Angeles Representing: National Association of Clean Water Agencies
Y (via teleconference)	Mr. Elan Rieser	Con Edison Representing: Utility Water Act Group
Y	Ms. Debra Waller	New Jersey Department of Environmental Protection (NJDEP) Representing: State Government—NJDEP

PARTICIPANTS LIST (CONT)

Contractors and Guests

Attendance (Y/N)	Name	Affiliation
Y	Ms. Kristen LeBaron (Contractor)	The Scientific Consulting Group, Inc. (SCG)
Y	Mr. Ed Askew (Guest)	Askew Scientific Consulting
Y	Dr. Richard Burrows (Guest)	TestAmerica Laboratories, Inc.
Y	Mr. Dan Hautman (Guest)	EPA
Y	Mr. Scott Hoatson (Guest)	Oregon Department of Environmental Quality
Y	Mr. Carl Kircher (Guest)	Florida Department of Health
Y	Ms. Stacie Metzler (Guest)	Hampton Roads Sanitation Department
Y	Mr. Charles Neslund (Guest)	Eurofins Lancaster Laboratories Environmental
Y	Mr. Dave Speis (Guest)	Retired
Y	Mr. Bob Wyeth (Guest)	Independent Consultant

Attachment C

ACTION ITEMS

1. Ms. LeBaron will finalize the December meeting minutes and send them to Ms. Phelps via email.

2. Mr. Flournoy will include Ms. Metzler in future In-Line and On-Line Monitoring Task Group meetings and correspondence.

3. The Board will review and vote on the SIM letter and criteria and discuss them during ELAB's February meeting; Dr. Delaney will email the Board members a few days prior to the meeting to determine the amount of discussion that may occur regarding the letter and criteria.

4. Dr. Wait will add information to the WET testing letter to indicate that ELAB may provide guidance and outreach on this topic before he distributes the letter to the Board members; he also will consider allowing the WET Expert Committee members review ELAB's letter.

5. During its February meeting, the Board will discuss the letter clarifying the punctuation error in Section 11.3 of Method 6010D.

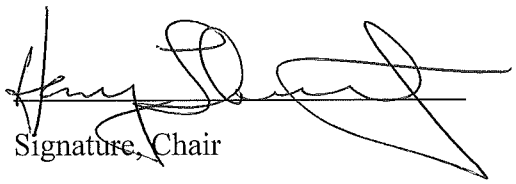
6. The Board will consider whether it will take action on either of the items related to GC/MS spectral libraries suggested during the face-to-face meeting.

7. *Outstanding action item from November 2016:* The Board will determine whether it will form a Task Group to review the Independent Laboratories Institute's document regarding the addition of microwave and interference-resolving technologies to Method 200.8.

8. *Outstanding action item from December 2016:* Dr. Wait will distribute the methods harmonization response letter to ELAB.

Attachment D

I hereby certify that this is the final version of minutes for the Environmental Laboratory Advisory Board Meeting held on January 23, 2017.



Signature, Chair

Dr. Henry Leibovitz

Print Name, Chair