



THE INSTITUTE REVIEW

Third Quarter 2013



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**Registration is Open for the 2014 Forum on
Laboratory Accreditation in Louisville**

By Jerry Parr, TNI

Registration is open for the 2014 Forum on Laboratory Accreditation to be held at the Hyatt Regency in Louisville, KY from January 27 – 30, 2014. The Forum will feature open public meetings of all TNI committees to allow quality professionals, chemists, analysts, microbiologists, engineers, and managers from federal and state agencies; commercial, municipal, state, and federal laboratories; and many others who are actively involved and interested in accreditation issues to review what has been done and participate in the efforts to establish a national environmental accreditation program.

The 2014 Louisville Forum will include:

- Meetings of all TNI committees;
- Discussion of the new consensus standards in development for detection and quantitation, instrument calibration, proficiency testing, and field activities;
- An Assessment Forum with topics on root cause analysis and corrective actions, QA/QC for microbiology and standards interpretation;
- A report from the Non-Governmental Accreditation Body Workgroup;
- A meeting of EPA's Environmental Laboratory Advisory Board (ELAB);
- A general session with updates about TNI programs; and
- A special workshop on the Department of Defense Quality Systems Manual.

The meeting will be held in downtown Louisville within walking distance to several attractions such as the Muhammad Ali Center and the Louisville Slugger Museum.

For more information, go to the 2014 conference website at <http://www.nelac-institute.org/meetings.php>.



Highlights from the Environmental Measurement Forum in San Antonio, Texas

By Carol Batterton, TNI

The Environmental Measurement Forum held in San Antonio, TX, on August 5-9, 2013 marked one of the most well attended meetings ever held by TNI. All TNI sessions were lively with active participation by all present. Highlights are summarized below.

The Laboratory Accreditation Systems Executive Committee (LAS EC) completed revisions to the Standard Operating Procedure (SOP) for Standards Interpretation Request (SIR) Management, designed to make the review and response to requests for interpretation of the NELAP Standard more efficient and timely. The LAS EC's next major push will be to finalize and approve the NELAP Evaluation SOP to recommend to the NELAP Accreditation Committee (AC) for its use with the upcoming round of evaluations.

The NELAP Accreditation Council announced that almost all ABs are now assessing against 2009 TNI Standard, either formally or informally, even though not all have been able to adopt the new Standard into regulations. Four of the fifteen evaluations for renewal of recognition of NELAP ABs are underway and phenomenal progress has occurred on the backlog of Standards Interpretation Requests.

The Consensus Standards Development Executive Committee (CSD EC) discussed revisions to SOP 2-100, "Procedures Governing Standards Development," which incorporated all recommendations of the Corrective Action Task Force. The Committee recommended that TNI develop a webinar for the Standards Development Process and will encourage early stakeholder participation in learning to use the new procedures, particularly from LAS EC and the AB representatives.

The CSD EC will propose that the TNI Board create a Whole Effluent Toxicity (WET) Expert Committee in the near future, due to interest levels identified during conference.

Selected reports from the Expert Committees include:

- The Microbiology Expert Committee (MEC) will propose revisions to the Small Laboratory Handbook in five areas to clarify the language. No changes are needed to accommodate crypto accreditations.
- The Radiation Expert Committee (REC) reviewed ten of thirteen sections of its draft Standard and expects to have a Working Draft Standard by Louisville.
- The Proficiency Testing Expert Committee (PT EC) began addressing the copious comments on its revision of the Standard, and noted that it will begin revising Volume 3 to accommodate ISO/IEC 17043 updates.
- The Laboratory Accreditation Body Expert Committee (LAB EC) presented updates on the generic application, with upcoming reviews of the Database Development Plan, as well as the planned Third Party Assessor page for the Resources section of the TNI website. The review and approval of a streamlined and color-coded NELAP Compliance Checklist for Evaluating ABs was discussed in detail.
- Chemistry Expert Committee (CEC) reviewed all comments on their draft Standard. None were resolved but all of those designated "persuasive" were assigned. The group also edited the MDL document.
- Quality Systems Expert Committee (QS EC) addressed many comments on the Small Lab Handbook. The committee will pick up review of the Quality Manual template and restart in a new direction.
- Field Activities Committee (FAC) reported that its Interim Standard was forwarded to CSD EC. The NEFAP brochure will be updated by the end of August and reprinted for use with outreach in September and October.



Highlights from the Environmental Measurement Forum in San Antonio, Texas cont.

NEFAP Executive Committee discussed the issue of mobile labs and how the fine line between field analyses and mobile lab analyses makes it difficult to determine which program mobile labs best fit into.

The Proficiency Testing Executive Committee (PTEC) elected Eric Smith Vice Chair. The microbiology subcommittee recommended not specifying strains of micro species and the full committee approved the recommendation. Reports from both PT Provider Accreditors (PTPA) were received and the two PTPA organizations are discussing the possibility of pooling the PT data to improve their operations. The PTEC discussed inconsistencies among ABs and recommended a change to PTs by method.

The Stationary Source Audit Sample (SSAS) Program updated its charter and is updating the Standard in areas of ordering audit samples and reporting results. The Committee plans to teleconference with user labs to hear those concerns and problems, and hopes to have a revised Standard for vote (either as working draft or voting draft version) by Louisville.

The Advocacy Committee sponsored a session on the Importance of Competency, and hopes to use elements of that forum in future webinars and newsletter articles. Other activities underway include multiple position papers in development, planning for the next newsletter (publication date estimated as November 1), and development of a handbook for good laboratory practice aimed at an audience of laboratories and laboratory workers (timeline TBD).

The Non-Governmental Accreditation Body (NGAB) Workgroup reported that they had reached agreements in principle about a recognition committee and framework for an Evaluation SOP.

The Policy Committee piloted a training course on the Committee Operations SOPs (1-101 and 2-101) to include developing guidance on conduct, and took feedback from the audience. The Guidance on Conduct has been approved by the Committee and will be presented to the Board at the next opportunity.

The Information Technology Committee noted that a ninth AB is putting Field of Accreditation data into LAMS, and hopes that the remaining six ABs will soon contribute their FoA data as well, making LAMS available at its full potential. The generic application is progressing, with a draft Database Development Plan ready for committee review and then for review by the LAB EC and LAS EC.

The Assessment Forum sponsored a presentation about using AB's interpretations of the ISO 17025 Standard to comply with the TNI ELSS. Barbara Escobar is transitioning into leadership of the Forum and moderated this conference's session.

The Conference Planning committee encouraged everyone to begin planning to attend the winter meeting in Louisville, KY, on January 27-30, 2014. The agenda will be similar to Denver, with a 2-hour ELAB session and reports from the TNI program executive committees on Monday morning, then half-day sessions Monday afternoon thru Thursday morning, ending at noon on Thursday. A half-day workshop on the Defense Department's Quality System Manual is planned for Thursday afternoon.

Also, make plans now to attend NEMC in Washington, DC, August 4-8, 2014, at the Hyatt on Capitol Hill. The January 2015 conference will be a 20th anniversary celebration at the Hyatt Crystal City Hotel, the same venue as the initial NELAC meeting in 1995. Later conferences will be on the southwest coast, then the deep southeast (Tampa or Savannah) and likely the northeast for the August 2017 timeframe.

Night in Old San Antonio

By Carol Batterton, TNI

On Wednesday night of the Environmental Measurement Forum, 250 attendees enjoyed a mini-Night in Old San Antonio (NIOSITA). This very special celebration was held in the historic, original downtown village of La Villita, along the banks of the renowned San Antonio River Walk.

Attendees experienced the flavor of San Antonio with a “traditional fiesta” including sampling of local food and beverages as well as mariachi music. Canopies of bright green, yellow, red, and blue covered food booths like the roadside vendor stands in Mexico. Food favorites of the evening included aguacates (fresh avocado halves filled with sour cream and spicy sauce) and Pollo Rancheros. The Jugo Frescas booth, a traditional fruit drink, was a big favorite for parched participants. Food booths also offered other tempting treats such as beef tacos and chalupas, queso flameado and tamales de pollo. Workers costumed in huipiles, Oaxacan dresses, sombreros, ponchos, and peasant attire enhanced the flavor of Mexico.

Proceeds from NIOSITA will benefit the historic preservation, education, and museum programs of the Conservation Society.





FREE WEBINAR

TNI's New Quality System for Radiochemical Testing

By Jerry Parr, TNI

The Radiochemistry Expert Committee has begun work on an update to the Radiochemistry Module of the TNI Standard (Volume 1, Module 6). The Committee has scheduled this webinar to provide information on planned changes and to receive feedback from stakeholders. Please provide response to information shared and comment on changes you would like to see made in the Standard.

WHEN:

Thursday, November 14, 2013

1:00pm EST

Register: <https://www.regonline.com/radio13>

AGENDA:

Background and general goals

- 1.1 Introduction
- 1.2 Scope
- 1.3 Terms and Definitions
 - 1.3.1 Additional Terms and Definitions
 - 1.3.2 Exclusions and Exceptions
- 1.4 Method Selection
- 1.5 Validation of Methods
- 1.6 Demonstration of Capability (DOC)
- 1.7 Technical Requirements
 - 1.7.1 Instrument Calibration
 - 1.7.2 Quality Control for Radiochemistry
 - 1.7.3 Data Acceptance / Rejection Criteria
 - 1.7.4 Sample Handling



Update on Standards Development Activity

By Ken Jackson, TNI

The TNI Environmental Sector Standard currently adopted by NELAP was published in 2009. In the intervening years, several factors have prompted the Expert Committees to further develop their modules and volumes of this Standard. In particular, the Proficiency Testing (PT) Committee embarked on a revision of its modules in the laboratory and accreditation body (AB) volumes after several ABs expressed their dissatisfaction with some aspects of the Standard, when it came time for its implementation. It then followed that the other two PT volumes (PT Provider and PT Provider Accreditor) would need updating to reflect the changes in the first two volumes.

In September 2010, TNI began work on a cooperative agreement with the USEPA that included the task of developing new standards for calibration, detection and quantitation. This led to the formation of the Environmental Measurement Methods Expert Committee, which was later renamed the Chemistry Expert Committee (CEC). The first Standard under development by this committee is the calibration section of the chemistry module in the laboratory volume. The Quality Systems Committee made changes to the 2009 laboratory standard, that were mostly clarification, and became the 2012 Standard that was placed on hold rather than being immediately offered to NELAP for adoption. Finally, two new Expert Committees (Microbiology and Radiochemistry) have started work on modifications of their respective modules in the laboratory volume.

Rather than adopt all the above standards modifications “piecemeal”, it has been decided to set a target date for the next version of the TNI Standard that will incorporate all the changes together. At the request of the TNI Board of Directors, the Consensus Standards Development Executive Committee (CSDEC) has set this target date to be 2015 for the next version of the Environmental Sector Standard that will be offered to the NELAP ABs for implementation. The following revised volumes and modules are anticipated:

Volume 1, Management and Technical Requirements for Laboratories Performing Environmental Analysis:

- Module 1, Proficiency Testing
- Module 2, Quality Systems General Requirements (the already approved 2012 version)
- Module 4, Chemical Testing (Calibration section)
- Module 5, Biological Testing
- Module 6, Radiochemical Testing

Volume 2, General Requirements for Accreditation Bodies Accrediting Environmental Laboratories:

- Module 2, Proficiency Testing

Volume 3, General Requirements for Environmental Proficiency Test Providers

Volume 4, General Requirements for an Accreditor of Environmental Proficiency Test Providers

Currently, it is expected the following will remain unchanged in the 2015 version of the Standard: Modules 3 and 7 of Volume 1 (Asbestos Testing and Toxicity Testing); the detection and quantitation aspects of Module 4 of Volume 1 (Chemistry Testing); and Modules 1 and 3 of Volume 2 (General Requirements and On-Site Assessment).

The following summarizes the status of Standard development towards the 2015 target:

The PT Committee has completed its work on Volume 1 Module 1 and Volume 2 Module 2, and is currently working on Volumes 3 and 4. It is the Committee’s aim to have these in Working Draft Standard form in time for the 2014 Summer meeting in Washington DC. The Chemistry Committee has almost finished considering comments received from voters on its Calibration Voting Draft Standard. The recently formed Microbiology and Radiochemistry Expert Committees are in the early stages of modifying their modules, and they would welcome

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Conduct Most Becoming

By Alfredo Sotomayor Wisconsin DNR

At its September meeting, the TNI Board of Directors unanimously endorsed guidance written by the Policy Committee. The “Guide for the Conduct of Participants in TNI Committees”, adapted from a similar document authored by the National Fire Protection Association (NFPA), describes principles of recommended behavior to promote fulfilling TNI’s mission in a respectful and inclusive manner.



The guide’s purpose is to:

- Establish general principles that become the basis of all conduct.
- Complement existing policies and SOPs on committee operations, ethical conduct, and dispute resolution.
- Serve as guidance, suggestion without mandating.

The guide offers general guidelines applicable to all participants and provides additional guidelines for participants in TNI Forums and Symposiums, committee members, committee chairs, and TNI Staff.

The guide is currently posted on the TNI Website here <http://www.nelac-institute.org/cms/posts/1383621256.php>. At the upcoming semi-annual meeting in Louisville, there will be presentation discussing the guide. The presentation will be recorded for future viewing.

Contact [Alfredo Sotomayor](#), Chair, Policy Committee, if you have questions about the guide.



Benefits of Accreditation of Field Sampling and Measurement Organizations (FSMO)

By Kim Watson, Stone Environmental

At the San Antonio meeting this summer, TNI organized a special session on the Importance of Competency, that featured presentations from different stakeholder groups. This article is the first in a series that summarizes the viewpoints of these different groups. Future articles will focus on how accreditation benefits government, laboratories, data users, and the public.

What are the Benefits of Accreditation to FSMOs?

The key benefits to TNI National Environmental Field Activities Program (NEFAP) accreditation or quality system accreditations and/or certifications, in general, are that they allow an organization to promote to their client consumer confidence in the reliability of data produced, consumer trust, data integrity, data traceability, and data reliability. Within the organization, management can work with staff to promote ongoing self-evaluation and continuous improvement, provide an effective system for accountability, and it can enhance its reputation. When an organization has a quality system with standard operating procedures, then benefits such as standardization of a product equals consistency in the product it produces. Professional and consistent products provide for client retention, which helps an organization stay solvent. It is difficult to measure how accreditation guarantees reliability, but it is an indicator that an organization has invested in quality systems which can be expensive to develop.

In the 1980's, environmental organizations had issues associated with data reliability, data fraud, lack of trust of services, laboratory fraud, inconsistent practices, lack of traceability, business fraud, and no formal ethics or data integrity training. In the 1990's, environmental organizations were required to develop quality assurance systems within their organization using such quality standards as USEPA FIFRA Good Laboratory Practice (GLP) Standards 40 CFR Part 160, 1989, Contract Laboratory Program 1987, and NELAP/ISO 17025 Quality System for Environmental Laboratories.

The fundamental elements in a QA system are consistent from one program to another, with minor additions and/or more stringent requirements depending on the program. The same key elements are required no matter what quality program an organization is using. The following elements are written into every Quality Assurance Project Plan (QAPP) according to QA/R-5 2001:

- RESOURCES: Personnel, Facilities & Equipment;
- RULES: Guidelines and Procedures/Methods;
- CHARACTERIZATION: Quality Test System and Validation;
- DOCUMENTATION: Raw Data, Reporting, and Archives;
- QUALITY ASSURANCE: Audit/Inspection; and
- TRAINING: Advice and Ethics — consistent, thoughtful, and equitable behavior on the part of management. This is probably the single most important influence on establishing an ethical working environment.

Today, an FSMO can become accredited in accordance with TNI-NEFAP Standard. The current TNI FSMO Standard outlines the minimum requirements for FSMOs and is based on the ISO/IEC 17025:2005 structure, but includes additional requirements that specifically address challenges and circumstances unique to organizations that perform field activities.

Strengths of accreditation lie in the strength of the assessors and quality of the assessments that is why Accreditation Bodies (ABs) must also demonstrate competence and be accredited by an accreditation organization as outlined in ISO 17011. Quality Assessors must have experience, training, understand technically sound science, have a strong understanding of analytical systems and software, and have a strong understanding of management systems.



Benefits of Accreditation of Field Sampling and Measurement Organizations (FSMO) cont.

For an FSMO organization, however, the heaviest burden to overcome is cost and maintenance of a proven quality assurance system. Therefore, a true benefit for accreditation for an organization will be the support provided by the regulatory environment such as the directive written by US EPA in December 2012. The US EPA issued Agency Policy Directive Number FEM-0212-02, "Policy To Assure The Competency Of Organizations Generating Environmental Measurement Data Under Agency-Funded Assistance Agreements Or Interagency Agreements", which again promotes the need for technical competence when generating data for the agency. Data generation is from organizations performing field sampling, field measurements, and laboratory analysis. The policy identifies accreditation as one of the mechanisms to achieve this demonstration of competence.



Wastewater Laboratory Certification is Coming to Kentucky!

By Zonetta English, Louisville Jefferson Co. MSD

Effective, September 5, 2013, Kentucky has enacted a law that requires a certification program for the purpose of evaluating laboratories that conduct Kentucky Pollutant Discharge Elimination System (KPDES) compliance sample testing.

Legislation passed by the Kentucky General Assembly in 2011 enacted KRS 224:10-670 authorizing the Department of Environmental Protection to promulgate an administrative regulation establishing a wastewater laboratory certification program and the standards for certifying laboratories.

The purpose of the certification is to determine if a laboratory has the technical expertise, facilities, and equipment to adequately perform the required laboratory analytical procedures for wastewater analysis. The certification program provides: application procedure, certification fee structure, and the appropriate methods and references for evaluating laboratory competence. It is estimated the program will impact over 300 laboratories that perform wastewater testing services for facilities within the Commonwealth of Kentucky.

In June, an amendment to the administrative regulation (401 KAR 5:320) changed the effective dates of the regulation to January 1, 2014 for general wastewater laboratories and the effective date of January 1, 2015 for “field-only” wastewater laboratories. Based on the 30-day comment period back in April, the certification process for “field-only” wastewater laboratories was simplified. General wastewater and “field-only” laboratories must have an application and interim certification within one year of their perspective program effective dates.

During the joint meeting of TNI/NEMC held in August, Mr. Patrick Garrity and Mr. Frank Hall of the Kentucky Division of Water (DOW) presented a poster session outlining the Kentucky Program. The Wastewater Laboratory Certification program incorporates some aspects of the NELAC Standard.

The latest version of the Wastewater Laboratory Certification Manual (published June 2013) can be found on the following website: <http://water.ky.gov>. The manual includes general laboratory requirements. Those general requirements include: Personnel, Training Records, Quality Assurance Plan, Field Sampling and Analysis, Proficiency Testing (PT) frequency, Reporting Requirements /Record Keeping, and Requirements for Maintaining Certification. Also, the manual outlines the critical elements for Chemistry, Microbiology and Whole Effluent Toxicity.

The Kentucky DEP is encouraging large municipals and commercial laboratories to apply for laboratory certification asap. On January 1, 2015, compliance data will not be accepted from laboratories that have not received interim certification. “We urge all laboratories seeking certification to have their application submitted by October, 2014. The State must have time to process the application. An accepted application must be in place by January 1,” stated Frank Hall, Laboratory Certification Coordinator.

Interim certification is based on a paperwork review by the DOW and will be issued for initial certification for the method-analyte pairs identified in the laboratory’s application.

Questions about Certification should be emailed to: dowlabcertification@ky.gov.

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NELAP Update

By Lynn Bradley, TNI

The NELAP cycle of peer evaluation and renewal of recognition is winding to a close for the 15 state Accreditation Bodies (ABs), just in time for the next cycle to begin. Several ABs have needed temporary extensions of their certificates of recognition due to unavoidable delays (not the AB's fault in any case,) but all ABs are expected to complete their evaluations before the next cycle gets underway.

For this next cycle, the NELAP Accreditation Council (AC) will utilize evaluation teams composed of a contract evaluator (ideally, a single individual who will lead each team) and a state AB evaluator. EPA regional offices choosing to continue participating with NELAP will contribute federal evaluator to the teams working in those regions. The Request for Proposal for this Third Party Evaluator was released by TNI in early October, with proposals due by November 4, and the contract issued by mid-December.

ABs are evaluated against Volume II of the 2009 TNI Environmental Laboratory Sector Standard (ELSS) regardless of the AB's status in implementing Volume I of the ELSS. While a few ABs are still officially using the 2003 NELAC standard and assessing labs to that standard, every NELAP AB will accept a lab's compliance with the 2009 ELSS, as shown in the following table.

AB	Standard in Effect Now	Status/Progress
CA	2003 NELAC	Plans to shift to 2009 TNI standard once evaluation is completed
FL	2003 NELAC	Allows either standard. Expects to use statewide "streamlining" of regulations as vehicle to implement 2009 TNI. Uses 2009 TNI ELSS for PT
IL	2003 NELAC	Officially requires 2003 NELAC but accepts 2009 TNI. Is in early stages of rulemaking to transition to TNI ELSS
KS	2003 NELAC	Regulation still requires 2003 NELAC but accepts 2009 TNI except where 2003 NELAC is more stringent. Uses 2009 TNI ELSS for PT
LA DEQ	2009 TNI	Transitioned to 2009 TNI effective June 10, 2013
LA DHH	2009 TNI	Transitioned to 2009 TNI in December 2012
MN	2003 NELAC	Accepts either standard
NH	2003 NELAC	Plan to update the rules to the 2009 TNI Standards was put off in favor of other rule changes deemed more important. If not 2014, the worst case scenario is 2016 when current accreditation rules expire and have to be readopted
NJ	Assessing to 2009 standard; each non-conformance has a citation for both the TNI and NELAC Standards.	No progress to adopt the TNI Standards by reference. Change of regulations has been shifted to a 2014 activity Senior Management
NY	2003 NELAC	No plans to transition until PT (V2M2) revisions are adopted. Assessment citations reference deficiencies for both the 2009 and 2003. If a rare citation is only applicable in 2009 - and not to 2003 - it would be cited as a 'comment' - not a true deficiency
OR	2009 TNI	Transition effective in 2011
PA	2009 TNI	Began assessing labs to new standard in 2011
TX	2009 TNI	Transition effective July 2011
UT	2009 TNI	Completed transition in October 2011
VA	2003 NELAC	Regulations to adopt the 2009 standard were signed by the governor in July 2013 and the required 60-day comment period begins August 26, 2013



NELAP Update cont.

All backlogged Standards Interpretation Requests (SIRs) have been reviewed by the Laboratory Accreditation Systems Executive Committee's (LAS EC's) SIR Subcommittee. Some responses were modified and returned to the AC for voting, others are being returned to the appropriate expert committee for reconsideration of the response and a sizable number of SIRs in the backlog were found to be something other than an actual request for interpretation of the standard. This latter group, designated as the "No SIRs," were closed out and the submitters notified. Some were requests for help in complying with the standard, some were method questions and several were about topics that are often client requests but are not addressed by the standard. A number of these No SIRs have been identified as deserving clarification, so that LAS EC is beginning to write the early entries into a new "Frequently Asked Questions" document that will be available for discussion at conference in Louisville.

The Laboratory Accreditation Body Expert Committee's (LAB EC's) effort to build a "Contract NELAP Assessors" listing now appears under the "Technical and Professional Resources" button on the TNI home page. The goal is to identify those individuals and organizations available to work as third party or contract assessors for NELAP ABs. Invitations are being sent to those individual members that LAB has been able to identify as possibly interested, but there's no need to wait for an invitation – all TNI individual and organizational members are eligible to be listed if they offer assessor services!



Update on Non-Governmental Accreditation Body (NGAB) Working Group

By Carol Batterton, TNI

At the San Antonio meeting in August, the NGAB working group reported on their progress to date. Activities have included reviewing the existing NEFAP and NELAP Evaluation SOPs and comparing them side-by-side, outlining main steps in the NGAB Evaluation process, and drafting sections of the NGAB Evaluation SOP. The group has reached agreement in principle in several areas. Significant points include:

- TNI will recognize NGABs and allow them to accredit labs to the TNI Environmental Laboratory Standard.
- NGABs will undergo a review as rigorous as that given to NELAP and NEFAP ABs.
- The review process will combine evaluation details from both NELAP and NEFAP evaluation SOPs.
- A Recognition Committee established by TNI Board will make the final recognition decision.

The Working Group has begun drafting an Evaluation SOP using elements of both the NEFAP and NELAP Evaluation SOPs. The complete draft SOP will be posted on the TNI website prior to the Louisville winter meeting and presented for discussion and comment at the meeting.



CALL FOR ABSTRACTS

The Next Generation of Environmental Measurements and Monitoring

The 30th Annual National Environmental Monitoring Conference (NEMC)

August 4-8 2014

By Lara Phelps, USEPA

Organized jointly by the U.S. Environmental Protection Agency (EPA) and The NELAC Institute (TNI), the 2014 Environmental Measurement Symposium, a combined meeting of the National Environmental Monitoring Conference (NEMC) and the Forum on Laboratory Accreditation, is the largest conference focused on environmental measurements in North America. The conference brings together scientists and managers from federal and state agencies, the regulated community, academia, and laboratory and engineering support communities. NEMC features presentations, posters, training, exhibits, and networking opportunities.

Do not miss the opportunity to network with other industry leaders at NEMC 2014. Make an impact by sharing your work at the most highly regarded technical conference in the environmental monitoring industry and be prepared to discuss policy and technical issues that affect all environmental media (i.e., water, air, soil, and wastes), across all environmental programs with other attendees.

To ensure the NEMC portion of the Symposium is cutting edge and meets the educational needs and interests of each attendee, the NEMC Steering Committee is inviting abstracts for oral or poster presentations in these specific topic areas:

- Academic Research Topics in Environmental Measurement and Monitoring
- Advances in Sample Preparation and Clean-up
- Air Methods & Monitoring
- Analysis of Metallic Species and Organometallics
- Benefits and Challenges of Large Volume Injection
- Best Laboratory Practices for Reference Materials
- Citizen Science
- Collaborative Efforts to Improve Environmental Monitoring
- Current Topics in Microbiology
- Data Management
- Data Standards for Sensors
- Field Measurements, Sensors, and In-Situ Monitoring
- Forensic Chemistry
- Future Monitoring Needs
- High Performance Liquid Chromatography in Environmental Monitoring
- Laboratory Accreditation
- Legal Defensibility of Data
- LIMS Implementation Issues
- Modeling, Mapping, and Geospatial Tools
- Operational and Advocacy Issues Impacting the Environmental Laboratory Industry
- Topics in Drinking Water
- Topics in Shale Gas Exploration and Production
- Volatiles Productivity Forum

Please provide your abstract by February 10, 2014. Abstracts received after the deadline are not guaranteed to be reviewed due to the number of available time slots and the high number of quality and timely submissions received.

More information and submission instructions are on the NEMC website at www.nemc.us.



Environmental Accreditation and Data Flow in the Era of Modern Informatics

By Jack Krueger, Informatics Consultant

In this rapidly emerging world of social media and electronic information delivery, this is a good time to look at how laboratory accreditation and electronic data delivery can benefit through informatics. Modern laboratory information management system implementation and laboratory interoperability through electronic test orders and results are not new buzz words in the environmental laboratory. Almost every federal, state and local agency has taken the plunge to promote electronic data exchange in some manner and undertaken modern informatics strategies to do so.

One does not have to look far to see evidence of the rapid evolution of informatics that supports environmental laboratory electronic data delivery.

1. Numerous summaries exist that discuss the basics and issues that complicate “Environmental Electronic Data Management” and the complexities of informatics in the “Brave New World of Consolidated and Shared IT Services: A Guide for Laboratories”.
2. Multiple LIMS vendors have implemented significant advances to support automation of electronic data test orders and results. Many have configurable systems that do away with the need for expensive and time consuming code customization.
3. ASTM is balloting a very informative “nut to bolts” “Standard Guide for Laboratory Informatics”
4. Efforts continue to develop networks to promote electronic data delivery. EPA supports multiple electronic data formats, electronic data messages, and networks.
5. National efforts continue to promote interoperability between multiple laboratories, including the DHS Integrated Consortium of Laboratory Networks (ICLN).

And yet, with so much activity, there remain many barriers to successful electronic data exchange. Chief barriers include the multiple data message formats, vocabularies, and secure data transport that complicate efficient environmental laboratory participation. These multiple requirements add cost to reporting and increase through-put time (some labs report that the time to prepare electronic reports exceeds the time for analysis!)

There is indeed an important connection to be made between informatics and accrediting laboratories. The present is a good opportunity to ignite a unified approach to explore how informatics can improve reporting of environmental measurements and the accreditation process. There are certainly many concepts to explore:

- Address the impacts of electronic data exchange and delivery in relation to certification and accreditation.
- Address automated mechanisms to utilize electronic data in the process of certification and accreditation. (Performing verification and validation of analytical sequence data, documenting training, policies, root cause records, sample tracking, audit trails, and electronic document management systems, etc.)
- Assist in standardizing the vocabulary, data messaging, and transport of electronic data deliverables to assure interoperability between certified/accredited laboratories.
- Address systems to include quality control data within electronic data deliverables to assure validated data meets program measurement quality objectives.
- Address configuration templates of Laboratory Information Management Systems (LIMS) and tools to automate electronic data collection and delivery. For laboratories and accrediting bodies, there are many advantages to being able to automate the delivery of certification requirements directly from the LIMS to the certifying agency.



Environmental Accreditation and Data Flow in the Era of Modern Informatics cont.

- Cloud Storage of electronic data.
- Automated data review and validation of electronic data.
- Importantly, engaging the many partners that contribute to TNI activities.
- A survey of environmental laboratory informatics capabilities to measure their maturity level in this area. CDC has developed a self-assessment tool as part of the Laboratory Efficiency Initiative.

Standardizing electronic data output benefits all and TNI has a role through its unique relationship to data generators and data consumers and diverse partners. What can be done to bring forward the discussion of electronic data informatics to the TNI body? Currently a charter is in development stage to bring this discussion to before the TNI.

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1. <http://www.aphl.org/aphlprograms/environmental-health/Documents/EDMWhitePaperFinal.pdf>
 2. http://www.aphl.org/AboutAPHL/publications/Documents/COM_2011_ITConsolidatedandSharedServices.pdf
 3. This guide and standard is issued under the fixed designation E1578 under the jurisdiction of ASTM Committee E13 on Molecular Spectroscopy and Separation Science and is the direct responsibility of Subcommittee E13.15 on Analytical Data. Covering all stages of the entire Laboratory Informatics landscape in the life cycle of Laboratory Informatics.
 4. http://www.aphl.org/MRC/Documents/LEI_%202013Jun_Self-Assessment-Tool-Poster.pdf



**Updated Department of Defense (DoD)
Environmental Data Quality Workgroup (EDQW)
Laboratory Control Sample (LCS) Study**

By the Environmental Data Quality Workgroup (EDQW)

In 1999, an LCS study was conducted by the DoD EDQW due to concerns over the quality of single lab performance control limits present in SW-846 methods. The purpose was to evaluate how well a select number of laboratories (approximately 20) familiar with DoD work performed a LCS in a routine, day-to-day fashion. The data set was limited, only the last 20 LCS control limit values were collected per laboratory (representing 454 analyte-matrix-method combinations and 9 SW-846 methods). The results of the study were published in 2004, and the control limits were incorporated as requirements into the DoD Quality Systems Manual (QSM) for Environmental Laboratories.

In 2009, the DoD implemented the DoD Environmental Laboratory Accreditation Program (DoD ELAP), which accredits laboratories performing work for the DoD. Currently, approximately 100 laboratories are DoD ELAP accredited. In 2012, with the resulting influx of a large number of laboratories into the program, as well as the revision of the DoD QSM to include laboratories that maintain qualification in accordance with the Department of Energy (DOE) Consolidated Audit Program (DOECAP), the EDQW determined there would be benefit to update the LCS study. The hope was to expand the number of laboratories participating in the study and to include more methods common to both DoD and DOE.

In all, 52 laboratories provided their LCS data representing 1,258 analyte-matrix-method combinations and 23 methods. Robust laboratory data management systems allowed the efficient electronic transfer of data resulting in an astounding 6 million LCS results used to calculate the final control limits. The control limits were calculated in the same manner as the initial study using the sample mean recovery ± 3 sample standard deviations. In July, 2013, the EDQW published the updated 2013 DoD LCS study.

Overall, the LCS control limit results were quite comparable to the initial study despite the passage of more than ten years. Not surprisingly, poor performing analytes are still with us. However, the results show that an overwhelming number of analytes can be recovered and analyzed with a high degree of confidence. This study can be used to evaluate method or laboratory performance, but it should be noted that because the study calculated limits from data pooled from multiple laboratories, the study limits should be wider than a single laboratory's in-house LCS limits. It should also be noted that for any given analyte, it may be possible to achieve better performance through method modifications.

<http://www.denix.osd.mil/edqw/upload/Final-LCS-Study-July-2013.pdf>



A Day in the Life of the San Antonio River Authority's Quality Control and Data Management Supervisor: Patty Carvajal

By Stephanie Drier, MN DOH

As you walk along the River Walk in San Antonio, it is difficult not to notice the beauty of the scenic river way alongside the excessive heat. This last August, I had the pleasure of meeting Patty Carvajal at the TNI Forum on Laboratory Accreditation/ National Environmental Monitoring Conference (NEMC). I caught up with her after the meeting to get an idea of the daily activities of someone who helps maintain the beauty of San Antonio's waterways.



The initial emphasis of the San Antonio River Authority (SARA) was on waterway navigation and barge canals to carry commercial goods between San Antonio and the Texas coast. When the barge canal was found to be impractical, the emphasis changed to flood control. SARA has grown and shifted focus over the last 75 years in order to provide river way recreation, restore habitat and improve water quality. For SARA's history, mission and initiatives, please visit their website at: www.sara-tx.org.

What time did you get to work?

I normally work from 8 a.m. to 5 p.m. each weekday, though I usually arrive around 7:30. The Environmental Sciences Department is divided into different areas of expertise and working with the different areas can change my work hours. The quality control and data management group will often assist the watershed monitoring group by collecting storm water samples and assisting with instream flows monitoring. The watershed monitoring group performs work at all times of the day and night. In working with the watershed monitoring crew, the quality control and data management staff is exposed to sample collection activities and are able to gain a better understanding of sample collection techniques and issues that may be encountered with sample collections.

How do you spend your typical work day?

My typical day begins with checking non-conformance entries to see if there is anything that needs to be addressed. Currently, I am trying to finish up the 4 quality assurance project plans that I have in various stages of development. I make sure that my staff has what they need to complete their assignments and answer any questions that co-workers have regarding quality assurance issues. I also spend a significant amount of time on the Upper San Antonio River Watershed Protection Plan Revision project. I am the project manager and make sure that the project is on schedule and within budget.

Currently, I manage three quality control and data management staff members that provide support and quality initiatives for the Environmental Sciences Department Laboratory and Watershed Monitoring groups. The laboratory has 12 people that perform microbiology, general water chemistry and metals analyses for drinking water, wastewater and surface water monitoring.

How long has the SARA Laboratory been accredited?

The SARA laboratory has been accredited since 2008, when Texas Commission on Environmental Quality (TCEQ) became a TNI Accrediting Body (AB). I became the quality assurance (QA) officer in 2007, when the laboratory was in the process of implementing the 2003 NELAC Standard into our quality system. This process was difficult at first. We had to document our existing processes and adjust some of them in order to meet the requirements of the standard.

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A Day in the Life of the San Antonio River Authority's Quality Control and Data Management Supervisor: Patty Carvajal cont.

What is the best part of your career?

I love my job! In March of next year, I will celebrate 15 years of service at SARA! I initially applied for my position while working part-time at UPS, and was excited to start my environmental career. While working full time at SARA, I have completed my Bachelor of Science in Natural Science with an Environmental Science emphasis and my Master's in Public Administration. The Public Administration degree prepared me for making management decisions and provided me with a different perspective.

Do you have an office? And can you jam out to music while you work? If so, what music?

No, I work in a cubical. My iPod is on at all times and I keep the volume low enough not to disturb the neighbors. I love music and will listen to any type of music!

Do you travel for your job?

I have travelled to attend training seminars and the Forum on Laboratory Accreditation meetings in Denver, Boston and Washington, D.C. I am looking forward to attending the meeting in Louisville, Kentucky in January. I have also traveled with the Texas State Soil and Water Conservation Board to present information to land owners and the general public to assist them in understanding the water quality issues and help improve the water quality within the San Antonio River Basin.

How many people and/or projects do you supervise?

I supervise three people in the quality control and data management section (QC & DM). The QC & DM provides administrative support, data review, quality assurance project plan (QAPP) development, and report writing. The QC & DM is always working on different plans at different stages of development. The group strives to document the quality of the data to meet the QAPP and the lab accreditation requirements. The water quality data is then added to the SARA Water Quality Database. This data is accessible from the SARA website (<http://gis.sara-tx.org/website/wqmapviewer/>).

What is one of your favorite aspects of your career?

I really enjoy digging into the data and evaluating how the data might help identify where the potential problems are and the potential causes of water quality issues. I enjoy reviewing the analytical results and looking for trends. Overall, I love trying to figure out what the data is telling us!

What role does technology play in your job?

I was involved in the internal development of an electronic nonconformance reporting system, used by SARA laboratory and field staff. This is an internal web application developed in 2007 that allows staff to report issues regarding the samples and projects. This allows the QA staff to easily organize and evaluate samples and projects to determine if the organization needs to resample, reanalyze or qualify data.

This system is an immense help to the laboratory process and staff, because it is a paperless system that aids in root cause analysis, it allows for electronic review and signature. The main benefit I have seen overtime and with the enhancement of the system, is that it allows the lab staff to comfortably track all aspects of their jobs and they feel less like they are 'messing up or making a mistake'.

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A Day in the Life of the San Antonio River Authority's Quality Control and Data Management Supervisor: Patty Carvajal cont.

What do you do for fun at work or outside of work? Does SARA host any events?

I love gardening and I especially love growing butterfly plants and tropical milkweed. My house is located in the monarch butterfly migration pathway and at times there will be monarchs all over the plants in my garden. I currently have 5 dogs living with me (3 Dachshunds, 1 German Sheppard, 1 puppy boxer mix). Jack, Snuggles, Dot, Kitty, and Dopey, are their names, respectively. Dot, who is the smallest dog of them all, thinks she is queen of the household! I also like to ride my road bicycle through the Mission Reach portion of the San Antonio River. The bike ride is about 23 miles in length, which I usually bike early in the morning when it is cooler.



How did you get involved with TNI? And when did you first get involved?

It was a full immersion experience, because I became the laboratory's QA officer in early 2007, experienced a TNI mock assessment, and then attended my first meeting in Denver all within the span of 30 days. I will soon begin working with the TNI Quality Systems committee. I also joined the Environmental Protection Agency's (EPA) Environmental Laboratory Advisory Board (ELAB) in October 2012. I am enjoying this experience and currently represent watershed restorations on the EPA's Environmental Laboratory Advisory Board (ELAB).



Anything else we TNI Member Spotlight readers should know about you?

The Boston meeting was my favorite meeting location; I had never been to that part of the country before and loved the experience and tour of the area!

