



# ANNUAL REPORT 2021

## The NELAC Institute (TNI)

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## LIST OF ACRONYMS USED IN THIS REPORT

AB .....	Accreditation Body
AC .....	NELAP Accreditation Council
ANSI .....	American National Standards Institute
CSDP .....	Consensus Standards Development Program
CSDP EC .....	Consensus Standards Development Program Executive Committee
DS .....	Draft Standard
DW.....	Drinking Water
EC .....	Executive Committee
ELAP.....	Environmental Laboratory Accreditation Program
EMS .....	Environmental Measurement Symposium
EPA .....	Environmental Protection Agency
ET.....	Evaluation Team
EC .....	Evaluation Coordinator
FAC .....	Field Activities Expert Committee
FoPT.....	Field of Proficiency Testing
FSMO .....	Field Sampling and Measurement Organization
IEC .....	International Electrochemical Commission
ILAC .....	International Laboratory Accreditation Cooperation
ISO .....	International Standards Organization
LAB .....	Laboratory Accreditation Body Expert Committee
LASEC.....	Laboratory Accreditation System Executive Committee
LE .....	Lead Evaluator
NEFAP .....	National Environmental Field Activities Program
NEFAP EC.....	National Environmental Field Activities Program Executive Committee
NELAP .....	National Environmental Laboratory Accreditation Program
NEMC.....	National Environmental Monitoring Conference
NGAB .....	Non-Governmental Accreditation Body
NPW .....	Non-Potable Water
OGWDW .....	EPA Office of Ground Water and Drinking Water
PT.....	Proficiency Testing
PTP.....	Proficiency Testing Program
PTPEC.....	Proficiency Testing Program Executive Committee
PTPA .....	Proficiency Test Provider Accreditor
QMS.....	Quality Management System
QS .....	Quality System
RFP.....	Request For Proposal
SCM .....	Solid and Chemical Materials
SIR.....	Standard Interpretation Request
SOP .....	Standard Operating Procedure
SSAS.....	Stationary Source Audit Sample
TNI .....	The NELAC Institute*
WET .....	Whole Effluent Toxicity

*\*Note that in the context of TNI, the word NELAC is not an acronym; it is a contrived word reflecting our heritage.*

## OVERVIEW

The NELAC Institute (TNI) is pleased to present its annual report summarizing accomplishments for 2021 and plans for 2022.

The NELAC Institute (TNI) is a 501(c)(3) non-profit organization whose mission is to foster the generation of environmental data of known and documented quality through an open, inclusive, and transparent process that is responsive to the needs of the community. The organization is managed by a Board of Directors and is governed by organizational bylaws. TNI's vision is a true national accreditation program, whereby all entities involved in the generation of environmental measurement data within the United States are accredited to one uniform, rigorous, and robust program that has been implemented consistently nationwide and focuses on the technical competence of the entity pursuing accreditation. TNI believes such a program will improve the quality and reliability of environmental data used by federal and state agencies.

To support this mission, TNI operates the following programs and related efforts:

1. Administration
2. Consensus Standards Development Program (CSDP)
3. National Environmental Field Activities Program (NEFAP)
4. National Environmental Laboratory Accreditation Program (NELAP)
5. Proficiency Testing Program (PTP)
6. Task Forces and Other Activities

Appendix 1 contains a list of the TNI Board of Directors, committees, and all other groups. The following individuals are recognized for their service as committee chairs whose term ended in 2020:

- Aaren Alger, Competency Task Force
- Myron Getman, Asbestos
- Carl Kircher, Laboratory Accreditation Body
- Kasey Raley, Microbiology

Appendix 2 contains details relative to new method and analyte codes added in 2021.

## 1.0 ADMINISTRATION

### 1.1 Board of Directors

The TNI Board “supervises, controls and directs the business affairs of TNI” by reviewing monthly program reports, reviewing, and approving policies and Standard Operating Procedures (SOPs), reviewing financial performance, and taking on other related activities.

### 1.2 Advocacy Committee

The Advocacy Committee:

- Conducts outreach with other organizations (e.g., ACIL, AWWA, WEF), EPA program offices, state agencies, and others that have an interest in accreditation issues.
- Develops presentations and papers to promote national accreditation and to promote TNI.
- Provides outreach at national, regional and local meetings, and supports TNI’s meetings.
- Assists with publication of the member newsletter.
- Supports the newly formed Mentor Subcommittee.
- Assists with conference planning.

#### 2021 Accomplishments

##### 1.2.1 Outreach

The committee created a [State of Nation Accreditation](#) report and provided this to EPA and state agencies.

The committee expanded the “TNI Ambassador” efforts by recruiting additional ambassadors. The purpose of this effort is to have one individual in each state that is not a NELAP Accreditation Body (AB) to act as a conduit between TNI and that state. We currently have ambassadors for Arkansas, California, Georgia, Nevada, South Carolina, Washington, Wisconsin, and all of EPA Region 1.

TNI made presentations on the Mentoring Initiative at the following meetings:

- The Bay Area Clean Water Agencies (BACWA) on April 20
- California WEA Tri-Counties chapter meeting in May
- California ELAP 3-day conference from June 1-3
- Florida Society of Environmental Analysts conference in May

## 1.2.2 2021 Meetings

### 1.2.2.1 Forum on Environmental Accreditation – Virtual

- We had 373 attendees, a new record for our winter meeting.
- The Forum featured 12 TNI committee meetings, 50 presentations, and 26 networking sessions.

### 1.2.2.2 Environmental Measurement Symposium – Bellevue, WA

The 2021 Environmental Measurement Symposium was held in Bellevue, WA, from August 2-5, 2021, and virtually from August 2-12, 2021. For the sixteenth year, the Symposium consisted of a combined meeting of the National Environmental Monitoring Conference (NEMC) and the Forum on Environmental Accreditation.

The 37<sup>th</sup> meeting of NEMC had 182 technical presentations over 8 days.

- Twenty-eight technical breakout sessions with 141 oral and 28 poster presentations,
- Two keynote presentations,
- One general session with 4 presentations,
- One EPA session with 3 presentations, and
- Four vendor lunch presentations.

The TNI portion of the symposium consisted of:

- Thirteen TNI Committee meetings
- An Assessment Forum
- A Mentor Session
- An update on TNI Activities session with 6 presentations.

The Conference also featured:

- A special half-day general session with a keynote speaker focused on the conference theme and updates from EPA program offices;
- An exhibit program showcasing the latest innovations in environmental monitoring;
- An innovative new technology showcase; and
- Two special keynote presentations on the conference theme.

### 1.2.3 Newsletter

TNI's newsletter, The Institute Review, was published in June and November 2021. Copies of the newsletter can be found on the TNI website [here](#).

### 1.2.4 Mentor Subcommittee

The Mentor Subcommittee worked out the details of their proposed mentoring plan. A draft web page including a questionnaire for labs seeking mentors and an expectations document were completed. The Subcommittee discussed the role of a mentor and the difference between mentors and consultants. They also discussed and refined the questionnaire for labs. Members agreed that the focus should be helping labs to implement a quality management system rather than becoming accredited.

## 2022 Objectives

The following are TNI Objectives for 2022:

- Create a plan for systematic outreach to data users to explain and promote the benefits of a quality management system.
- Revise the "Introduction to TNI" to create a webinar for new members.
- Monitor EPA/federal activities for opportunities to share TNI's activities and promote national accreditation.
- Look for opportunities to add TNI Ambassadors for non-NELAP states.
- Sustain:
  - oversight of the Mentoring Initiative,
  - organizing newsletter publication,
  - providing assistance to conference planning, and
  - support for Small Laboratory Advocate role.

## Future Meetings

The following meetings are planned for 2022:

- Forum on Environmental Accreditation; January 17-21, 2022 (San Antonio, TX)
- Environmental Measurement Symposium; August 1-5, 2022 (Crystal City, VA)

### 1.3 Information Technology Committee

The Information Technology Committee:

- Provides recommendations as to the design and content of the TNI website.
- Manages the TNI Laboratory Accreditation Management System.
- Maintains TNI databases such as technology codes, method codes, and analyte codes.

#### 2021 Accomplishments

- For policies and procedures, we discontinued using PowerDMS and returned to storing them in Dropbox. Consequently, William has returned to my old system for updating those documents on the website, and all the SOPs and Policies on the website (in the TNI menu, [Policies and Procedures](#)) have been updated to the latest versions. He also took the opportunity to add an Effective Date column to the document list so you can easily see when each policy or SOP was updated.
- A new page for [TNI's Mentor Initiative](#) went live, and along with it a new button on the home page - in blue.
- In January, the TNI Forum came and went, and if you participated, you got to experience our virtual format — a first for the Forum. This virtual format also served as a trial run for the next NEMC to connect attendees to WebEx sessions through our online Portal instead of using WebEx email invitations. The session recordings were available for attendees to watch through April 1, and then were replaced by PDF presentations [posted for the public](#). The presentations are organized in a new way such that the original program schedule is preserved, with links added to download PDFs of presentations.
- All NELAP ABs are now uploading Fields of Accreditation into LAMS. This has been a 14-year effort.
- To improve communication of these kinds of standards development activities, William created a mailing list subscription. The list works in the same manner as the existing notification lists for Standard Interpretation and FoPT Table updates. In this case, a signup form is on the [Standards home page](#) of the website.
- Finally, the long-awaited project to improve committee roster management became active on September 13. This project was conceived back in January 2020 at the TNI Forum and was targeted to be completed in just a few months. Circumstances outside our control intervened, and priorities were shifted to virtualizing NEMC and the TNI Forum.



**Table 1. Laboratory Accreditation Management System (LAMS) Summary for 2021**

Accreditation Bodies .....	14
Non-Governmental Accreditation Bodies .....	4
Active Laboratories .....	1229
Primary Fields of Accreditation .....	298011
Active Methods .....	4864
Methods added in 2021 .....	175*
Active Analytes .....	3489
Analytes added in 2021 .....	17*

\* See Appendix 2 for details.

## 2022 Objectives

- Continue to support the website and LAMS.
- Continue to support the Mentor initiative.
- Support the credential initiative.
- Expand LAMS into non-NELAP states.

## 1.4 Policy Committee

The Policy Committee:

- Serves as a resource for the development of policies.
- Reviews policies from all programs for conformity with respect to style and for consistency with one another and with the overall mission of TNI.
- Develops general policies for TNI.

## 2021 Accomplishments

- Developed and/or approved the following policies or SOPs:
  - Policy 2-100: Viewing TNI Standards Incorporated by Reference
  - SOP 1-100: Format Guidelines for Standard Operating Procedures (SOPs)
  - SOP 1-101: Committee Operations
  - SOP 1-102: Decision Making Rules for TNI Committees
  - SOP 1-104: Control of TNI Documents
  - SOP 1-109: Establishing, Maintaining and Validating Analyte and Method Codes
  - SOP 1-116: Development and Approval of TNI Policies and SOPs

- SOP 1-124: TNI Internal Audits
- SOP 2-100: Procedures Governing Standards Development
- SOP 3-103: NELAP Accreditation Standards Review and Acceptance
- SOP 3-114: Implementation Guidance: Preparation and Approval
- SOP 4-107: FoPT Table Management
- SOP 5-107: Addressing Conflicts of Interest in the NEFAP EC
- SOP 7-100: Evaluation of Non-Governmental Accreditation Bodies (NGAB) for Accrediting Environmental Laboratories under Recognition by The NELAC Institute (TNI)
- Managed the implementation of the TNI Internal Audit process.
- Reviewed charters for new committees.

### 2022 Objectives

- Review Internal Audit Checklists
- Continue to review SOPs and Policies
- Begin maintaining Glossary

## 1.5 Training Committee

The newly formed Training Committee develops and maintains a comprehensive training plan for TNI.

### 2021 Accomplishments

- Updated Charter based on new Strategic Plan.
- Developed Workgroups:
  - Training Opportunities
  - Training Materials Review
  - Credentialing
- Assisted in update of TNI Training SOP.
- Marketing:
  - Developed social media plan
  - Implemented monthly training flyer
  - Posted TNI website training video

## 2021 Training Courses (Webinars)

- The 2021 EPA Method Update Rule
- Brown Bag 11: Contracts and Tenders & Service to Client Requirements and Implementation Ideas
- Understanding Data, Data Review, and Data Management for Chemical Testing
- Electronic Records Management
- Technical Writing for Environmental Method SOPs
- Environmental Laboratory Assessments - Basic Assessor Training (2 courses)
- Basic Statistics for Environmental Laboratories
- How to Properly and Scientifically Calibrate an Analytical System
- Whole Effluent Toxicity (WET) Testing – Data Interpretation Training
- Introduction to Proper and Scientific Integration Techniques for Chromatographic Systems

## 2022 Objectives

- Implement and expand Linked-In page.
- Work with Competency Task Force to develop Credentialing Program.
- Work with Competency Task Force to develop Digital Badge Program.
- Look for opportunities to collaborate with other training providers.
- Continue to develop RFPs for training courses such as:
  - Ethics and Data Integrity for Field Operations
  - Managing Your PT Program
  - Implementing Training Programs
  - Choosing the Right Analytical Protocol
  - Measurement Traceability
  - Building a Culture that Encourages Creativity, Ingenuity, Innovation, and Problem-Solving
  - Accommodations and Environmental Conditions
  - Managing Laboratory Support Equipment
  - Understanding Microbiology
  - Auditing Field Activities

## 2.0 CONSENSUS STANDARDS DEVELOPMENT PROGRAM

### 2.1 CSDP Executive Committee

The mission of this committee is to guide the Consensus Standards Development process in the development and maintenance of standards. The CSDP EC, through representation from expert committees for each Module/Volume of the TNI Standards, ensures necessary, relevant, and timely development and/or changes to the Standards.

It is the role of the CSDP EC to:

- Receive and respond to stakeholder requests for improvement and/or development of the Standards;
- Ensure that changes are made in a timely and implementable fashion by working with Stakeholders, other TNI executive committees, and the Accreditation Council;
- Ensure that conflicts do not exist within the various Volumes and Modules of the Standards; and,
- Ensure that Standards Development is done in conformance with TNI SOPs on committee operations, standards development, and ANSI requirements.

#### 2021 Accomplishments

- The TNI Glossary work group prepared a comparison document of all definitions presented in TNI documents and the current glossary as completed last year. Relevant ISO standards definitions were also included as appropriate. The work group also reviewed definitions from TNI ABs to ensure consistency with State rules and regulations.
- ANSI's Executive Standards Council, in correspondence dated 4/28/2021, lifted TNI's suspension. TNI is again permitted to submit Project Initiation Notifications (PINS) and/or Board of Standards Review form 8 (BSR-8) at the Notice of Intent (NOI) and draft standard (DS) steps, respectively, of our standards development process. TNI submitted a BSR-8 for EL V1M3 (asbestos testing) and EL V2 M1, General requirements for ABs. There were a number of internal NOI produced in 2021 which necessitated filing of PINS with ANSI. The ANSI requirement for an audit against our revised procedures will not be scheduled until we have a standard/module that has proceeded through each step in these revised procedures. Until such time when said audit is complete, TNI will not be able to submit a BSR-9 (i.e., seeking final ANSI approval of the Standard/Module).
- Revised training materials for Expert Committee members and Chairs was completed. A webinar-based presentation of the new training was presented on March 30, 2021. The

session was recorded for use by Committee Chairs and Committee members unable to attend the initial presentation and for future use by new committee members. Attendance by Committee members is mandatory and will be recorded by the Committee Chairs. While not required, associate members were also encouraged to participate in the training.

- Table 2 below summarizes the status of all standards development at the end of 2021.

**Table 2. Status of Standards Development — 12/31/2021**

<b>Vol/Mod</b>	<b>Subject</b>	<b>Status</b>
<b>ENVIRONMENTAL LABORATORY STANDARDS</b>		
<b>Requirements for Laboratories</b>		
V1M1	Proficiency Testing	Working on NOI to review and update standard as necessary.
V1M2	Quality Systems	Working to incorporate ISO 17025: 2017, Technical Manager/Expert and other changes. Draft Standard late 2022 or 2023.
V1M3	Asbestos	Second draft scheduled for publication in early 2022.
V1M4	Chemistry	Working on revisions to DOC, LOD/LOQ and calibration. Draft Standard late 2022 or 2023.
V1M5	Microbiology	Published a draft standard in August. Comments are being reviewed and a second draft will be published in early 2022.
V1M6	Radiochemistry	Developed 23 highly technical proposed changes with an objective to publish a draft standard in early 2022.
V1M7	Whole Effluent Toxicity	Continue review of draft revisions, to various sections of the module. New draft late 2022.
<b>Requirements for Accreditation Bodies</b>		
V2M1	Accreditation Body	Working on a revised draft for publication by August 2022.
V2M2	Proficiency Testing	Working on NOI to review and update standard as necessary.
V2M3	On-Site Assessment	This module will be deleted when the new Module 1 is finalized.
<b>Requirements for PT Providers</b>		
V3	PT Providers	Working on NOI to review and update standard as necessary.
<b>Requirements for PT Provider Accreditors</b>		
V4	PT Providers Accreditors	Working on NOI to review and update standard as necessary.

**Table 2. Status of Standards Development — 12/31/2021 cont.**

<b>FIELD SAMPLING AND MEASUREMENT ORGANIZATION (FSMO) REQUIREMENTS</b>		
V1	FSMO Requirements	Working on recommended changes with goal to publish draft in 2022.
V2	Accreditation Body Requirements	Working on recommended changes with goal to publish draft in 2022.
<b>STATIONARY SOURCE AUDIT SAMPLE (SSAS) REQUIREMENTS</b>		
V1M1	Sample Provider Requirements	Develop a revised draft standard for all three modules by
V1M2	Accreditation Body Requirements	See V1M1 above.
V1M3	General Requirements	See V1M1 above.

### 2022 Objectives

- Submit one of the revised Modules (including the entire Development Process) to ANSI to finalize TNI's re-accreditation.
- Ensure full compliance with all relevant TNI requirements for Expert Committee operations and standards development.

## 2.2 Asbestos Committee

The mission of this committee is to develop and maintain consensus standards for asbestos testing that support TNI programs and that address the following elements of an asbestos testing program:

- Roles and responsibilities of program participants;
- Method selection and validation;
- Technical requirements; and
- Quality assurance and data acceptance criteria.

### 2021 Accomplishments

- The Asbestos Expert committee completed development and approval of their Summary Document for the Draft Standard (DS) for EL V1M3. The Draft Standard materials were posted (12/22/2020) on the TNI website as well being provided to all required TNI personnel and Committees, and Non-TNI members who are interested in and/or potentially impacted by the changes in the Standard.

- The comment period for the DS expired on March 21, 2021. Two sets of comments were received and addressed by the committee consistent with SOP 2-100, Rev. 3.4.
- The Committee then prepared and published their Response to Comments document consistent with SOP 2-100. A number of editorial (and clarifying), as well as persuasive comments were received, and the Committee began work on preparing a second draft of their Standard for publication and comment.

### 2022 Objectives

- Respond to comments on Draft Standard and finalize Module 3.
- Seek American National Standard status from ANSI and pursue adoption of Module 3 in NELAP.

## 2.3 Chemistry Committee

The mission of this committee is to develop and maintain standards that improve and ensure the technical quality of environmental chemical testing data. It is important that a balance between impact on laboratories and improvement in technical quality be maintained during this process.

### 2021 Accomplishments

- The Chemistry Committee focused much of 2021 on resolution of a number of valid SIRs from the LASEC. The committee also discussed potential issues regarding modifications to Module 4. While the entire module will be examined as per SOP 2-100, at this point in time, the primary issues facing the committee relate to reconsideration of the language and/or clarification of the requirements for Initial and Continuing Demonstration of Capabilities for the laboratory and individual analysts, and detection limit and calibration language clarifications.

### 2022 Objectives

- Begin revisions to V1M4, including revisions to:
  - DOC
  - Calibration
  - LOD/LOQ
- Continue to contribute to resolution of the Technical Manager issue.
- Respond successfully to all SIRs.

## 2.4 Laboratory Accreditation Body Committee

As a means to improve the quality and consistency of environmental data throughout the United States and to foster the mutual recognition of laboratory accreditation by Accreditation Bodies, the mission of the Laboratory Accreditation Body (LAB) Expert Committee is to develop and support accreditation standards for environmental testing accreditation bodies by engaging experts in a consensus-based standards development process.

### 2021 Accomplishments

- Prepared initial draft of Compliance Checklist (Technical Review Checklist) used for NELAP evaluations.
- The Draft Standard V2M1 was posted for comment, along with a summary of changes and the response-to-comments file. See the Draft Standard V2M1 [here](#).
- The formal comment period on the V2M1 Draft Standard closed on March 30. A total of 91 comments were submitted from eight individuals, six of whom represented NELAP ABs and two others. LAB members reviewed these comments and revised the draft standard.

### 2022 Objectives

- Finish review of comments received on Revision 0.
- Publish Draft Standard EL Volume 2, Module 1, Revision 1.
  - Discuss and rule on any comments
  - Persuasive or Non-persuasive
- If controversies are identified, publish Revision 2 of Draft Standard and receive/review comments again.
- Committee vote for Final Standard.
- Respond to SIRs as needed, review draft Compliance Checklist.

## 2.5 Microbiology Committee

The mission of this committee is to maintain the Microbiology Standard (TNI Volume1, Module 5) based on input from stakeholder groups and the public; to provide technical assistance, support, and training on issues related to microbiology and the TNI standard; and to develop tools to facilitate the implementation of TNI Microbiology Standard.



### 2021 Accomplishments

- The Committee posted a new Draft Standard on the TNI website for comment on August 9, 2021.
- Work was started on the new implementation guidance for Equilibrium Testing (V1M5: 1.7.3.7.b.v.a).

### 2022 Objectives

- Complete Volume 1 Module 5 update.
- Develop “Understanding Microbiology” Webinar course.
- Continue to respond to Standard Interpretation Requests.
- Prepare implementation guidance regarding Incubator Equilibrium checks.
- Support Quality Management System’s efforts to finalize language for Technical Expert.

## 2.6 Proficiency Testing Committee

The mission of this committee is to develop and maintain consensus standards for proficiency testing (PT) that support TNI programs and that address the following elements of a proficiency testing program:

- Roles and responsibilities of program participants.
- Manufacturing, validation, and verification of PT samples.
- Accreditation and oversight of PT Providers.
- Management and evaluation of PT sample data by Accreditation Bodies (ABs), PT Providers (PTPs), PT Provider Accreditors (PTPAs), and the Proficiency Testing Program Executive Committee (PTPEC).
- Use of PT samples to support environmental laboratory accreditation.

### 2021 Accomplishments

- The Proficiency Testing Expert Committee continued to develop work plans focusing on needed changes to Module 1 including review of ISO 17011, 17025, 17034 and 17043 for consistency with the TNI standard.
- The committee also began reviewing EL V2M2, EL V3, and EL V4 for any needed updates or modifications to these standards. These latter standards will have to initiate the revision process or be reaffirmed through the ANSI process.

## 2022 Objectives

- Work with the PTPEC and potentially other Expert Committees to resolve issues of mutual interest.
- Respond successfully to all SIR.
- Initiate new standards development, seek stakeholder input.

## 2.7 Quality Systems Committee

The mission of this committee is to maintain environmental laboratory quality management systems standards (TNI Volume 1, Module 2) based on stakeholder input, to provide technical assistance on issues related to adopted standards, and to develop tools that facilitate the implementation of the standard.

## 2021 Accomplishments

- The Committee continued to review their Recommended Changes Summary table for a revised standard based on feedback received in writing and during the public webinar. Comments from the Virtual Conference have also been considered. The bigger topics of conversation were whether to include examples of support equipment (there were strong arguments for both sides), the need for clarification on electronic record requirements, how to present SOP requirements (should it be in paragraph form instead of a list that looks like required headers), new wording for identifying samples, internal audit frequency, accreditation claims, and whether a lab needs a formal Quality Manual.
- A workgroup was formed to start working on specific sections of the new Standard while the Committee continues to tackle the controversial topics: technical manager, SOP requirements, Quality Manual, etc.

## 2022 Objectives

- Complete Volume 1 Module 2 DRAFT Standard.
- Continue to respond to Standard Interpretation Requests.
- Continue working through controversial topics:
  - Internal Audits
  - Technical Manager/Technical Expert
  - Document/Record Retention
  - Quality Manual
- Define “Appropriate QC” in Section 7.7 (ISO/IEC 17025:2017).

## 2.8 Radiochemistry Committee

The mission of this committee is to maintain the Radiochemistry Standard (TNI Volume 1, Module 6) based on input from stakeholder groups and public; provide technical assistance, support, and training on issues related to radiochemistry and the TNI Standard; and develop tools that facilitate implementation of the TNI Standard.

### 2021 Accomplishments

- The Committee finished its work on Module 6 of the Standard. A vote was approved to move the Standard forward as a Draft Voting Standard.
- The Committee received the last vote needed to finalize the Draft Standard. It is now finalizing the Summary of Suggested Changes and Justification that will be posted with the Draft Standard.

### 2021 Objectives

- Continue to respond to Standard Interpretation Requests.
- Resolve reporting uncertainty with PT results.
- Explore options for FoPT tables for non-DW matrices.
- Complete Volume 1 Module 6 update.
- Support Quality Management System's efforts to finalize language for Technical Expert.

## 2.9 Stationary Source Audit Sample Committee

The mission of this committee is to develop and maintain consensus standards for the EPA's Stationary Source Audit Program (SSAP) that meet or exceed the requirements as described in 40 CFR 60.8 and 63.7.

### 2021 Accomplishments

- The Committee prepared a Change Summary Table for a Public Webinar to discuss possible changes to Modules 1, 2 and 3 on February 16, 2020.
- The Committee developed a letter to EPA to request that they reconsider their requirement for two providers. TNI received a response to the letter to the EPA to request that they reconsider their requirement for 2 providers. They do not intend to make a change.

## 2022 Objectives

- Complete Volume 1 Modules 1, 2, and 3 update.

### 2.10 Whole Effluent Toxicity (WET) Committee

The mission of this committee is to update and maintain the Whole Effluent Toxicity (WET) testing Standard (Volume 1, Module 7) based upon public comment, provide technical assistance on issues related to whole effluent toxicity, develop tools to aid implementation, and facilitate the implementation of the Standard.

## 2021 Accomplishments

- The WET Chair and Vice Chair presented the committee's proposed process for analyst demonstrations of competency to the NELAP AC at its January 4 meeting.
- The WET Chair and Vice Chair participated in a joint session with PTPEC and PTEC to address the WET committee's proposals to improve data comparability for WET PT samples. The outcome was that some items will be addressed from the PT program side, with changes to the FoPT table for WET and possibly some changes in V1M1, while other items will be incorporated into the revised WET module V1M7.
- The WET Committee continued its efforts to contribute to improvement of the WET Assessor Training that was conducted in fall of 2019 and is developing a Data Interpretation Training, planned for early fall of 2021. The teleconference meetings are largely devoted to revising the WET module, V1M7.
- The WET Data Interpretation Training was provided on October 27. Review of draft revisions to various sections of the V1M7 module of the TNI Standard continued, with some progress in drafting people to work on the remaining sections. The WET Data Interpretation training was successful and well-attended.
- Review of draft revisions to various sections of the V1M7 module of the TNI Standard continued, with some progress in drafting people to work on the remaining sections.

## 2022 Objectives

- Complete review and revision of updated language for each section of revised V1M7.
- Publish Draft Standard V1M7 for comment.
- Establish path to achieve data comparability for WET PT data, working with PTPEC and PTEC to add language to either the Standard or the WET FoPT tables (yet to be determined).

## 3.0 NEFAP REPORT

### 3.1 NEFAP Executive Committee

The mission of the NEFAP Executive Committee (EC) is to oversee a national program for the accreditation of field sampling and measurement organizations (FSMO).

#### 2021 Accomplishments

- The Committee established a Marketing Subcommittee and Training Subcommittee to help NEFAP implement its strategic plan.
- The Marketing Subcommittee prepared a questionnaire on social media and website opportunities. They evaluated where NEFAP is now accepted and where there may be other opportunities for NEFAP acceptance. The Subcommittee also completed FSMO and Data user testimonials on the benefits of NEFAP, started development of an Ambassador program for NEFAP, social media opportunities, distribution of the survey prepared with the Training Subcommittee, developed a list of opportunities where NEFAP information can be presented at conferences, developing a NEFAP podcast, development of a newsletter, and reviewing website keywords to assist with website positioning.
- The Training Committee issued a Request for Proposal (RFP) that went out April 5, 2021 for an internal audit class for FSMOs. The Subcommittee also began work on a free webcast to introduce people to NEFAP.
- The Committee also established performance metrics to gauge the success of the program.

**Table 3. NEFAP Performance Metrics**

<b>Performance Metric</b>	<b>Target</b>
Increase number of FSMO Applications	8
Increase in FSMO memberships within TNI	10% increase
Develop revenue generating training sessions	3
Develop multiple non-revenue-generating training clips or informational media to promote paid sessions.	2
Increase in number of people completing NEFAP/Field training courses in TNI	10
Increase in number of FSMO Standard purchases	11
Increase NEFAP-related revenue	\$1500
Increase in presentations given external to TNI	3
Increase in published promotions (articles/white papers)	1
Increase in social media presence	20
Increase in web traffic to NEFAP page	?
Increase in participation in EC meetings	75%
Increase in associate members (NEFAP EC & FAC)	6
Inquiries from stakeholders into program (NEFAP EC & FAC)	3

## 2022 Objectives

- Support standard revision process by providing comments and suggested changes to improve the TNI Field Activities Standards.
- NEFAP AB re-evaluation process.
- Continue to develop training courses and implement strategic plan as it relates to training.
- Aggressively market the Program utilizing the strategies outlined in the strategic plan.
  - Expand online presence.
  - Update and develop FSMO application tools.
  - Market program to state agencies – NEFAP Ambassador Program.
  - Open dialog with EPA on agency efforts related to field sampling quality.
- Generate more awareness of the program and drive growth and interest in participation.

## 3.2 Field Activities Expert Committee (FAC)

The mission of the TNI Field Activities Committee (FAC) is to develop standards for accrediting bodies and field sampling and measurement organizations. The FAC will engage experts to develop consensus-based standards with the goal of improving the consistency of field methods and the quality of environmental data.

### 2021 Accomplishments

- The Committee worked on its Summary of Changes document and held a Public Webinar for February 4, 2021. The webinar focused on what is being added to the 2017 ISO/IEC Standard (e.g., 2014 TNI FSMO Standard language, sampling documentation, sampling plans, and definitions) instead of focusing on what has changed from the 2014 TNI Standard.
- The Chairs began work on a revised Volume 1 Standard with the new ISO 17025:2017 language.
- The Committee also started work on Volume 2 (AB portion) of the Standard.

### 2022 Objectives

- Complete revisions to Volume 1 and Volume 2.
- Respond to SIRs as necessary.

## 4.0 NELAP REPORT

The NELAP Accreditation Council (AC) has final authority for implementation of the program for the accreditation of environmental laboratories within the National Environmental Laboratory Accreditation Program. The NELAP AC facilitates a national program through mutual recognition.

### 4.1 NELAP Accreditation Council

#### 2021 Accomplishments

- The 3-year evaluation of Accreditation Bodies was completed for New York, New Hampshire, and Oklahoma.
- Council members reviewed a proposed concept for analyst demonstrations of competency in WET labs. As this proposal will be a substantial change for some ABs, Council acceptance of the concept prior to publication in the Draft Standard was considered essential. The WET representatives were able to clarify some confusion about the distinctions between laboratory DOCs and analyst DOCs (laboratory DOCs are generally well defined in the method manuals) and also about differentiating successful completion of training from the actual analyst DOC. There were no objections to the proposed paradigm that consists of a new analyst participating in two standard reference toxicant tests and performing all tasks that the analyst has been trained to perform, and a recommended matrix of tests and organisms that can substitute for other tests/organisms (chronic tests include all tasks of an acute test and certain species are so similar that the tasks are essentially identical).
- The Council reviewed the V2M1 Draft Standard.
- Due to the COVID-19 pandemic emergency most ABs implemented work-from-home operations with staff coming into the office only for document retrieval and signatures. Most ABs also implemented remote assessments after a period of “suspension” of assessments early on, and in-person site visits have often been shortened with more off-site document reviews.
- The implementation status for the 2016 TNI ELS Standard is shown below. Most rulemakings were delayed by the pandemic emergency.



**Table 4. Implementation Status for 2016 TNI ELS Standard**

State	Process for Implementing the New Standard	Anticipated Implementation Date
FL	FL adopted the TNI 2016 Standards by regulation on September 26, 2018. Laboratories were granted a grace	Fully implemented on April 1, 2019
IL	Full implementation on January 31, 2020.	January 31, 2020
KS	Rulemaking underway, but slowly. Is allowing labs to upgrade now and is assessing to 2016 Standard, even though	2022?
LA	Regulation updates delayed by pandemic, tropical storms	Unknown
MN	Adopts by statute and is updating its databases now. Is encouraging labs to implement 2016 Standard now, with database updates ready and checklist going into electronic data system now.	January 2021
NH	Regulation finalized on November 23, 2021.	March 1, 2022
NJ	Incorporated into regulation by reference.	January 31, 2020
NY	Adopts by reference. Unable to obtain permission to complete rulemaking to update other aspects on separate timeline. Implemented PT modules of 2016 Standard immediately, but not able to use the updated 2016 checklist	PT changes implemented; other modules await rulemaking to revise NYS certification manual. Unknown date for completion.
OK	Proposed rule published 12/1/2021 to adopt 2016 TNI EL	January 1, 2021
OR	Implemented 2016 Standard effective January 1, 2021.	January 31, 2020
PA	Incorporated into regulation by reference. All labs are required to have the 2016 Standard implemented by July	January 31, 2020
TX	Incorporated into regulation by reference. Implementation	January 31, 2020
UT	Rulemaking complete. 2016 Standard implemented.	June 11, 2021
VA	Regulation signed. Awaits publication. Implementation will	Unknown

## 2022 Objectives

- Sustain governance role for the program and promoting consistency in AB operations.
- Review and comment on V2M1 Draft Standard Version 1.
- Review and comment on other revised modules of the TNI ELS Standard (Volume 1) as the Expert Committees publish Draft Standards.

## 4.2 Laboratory Accreditation Systems Executive Committee (LASEC)

The mission of this committee is to manage TNI's efforts in supporting a national program for the accreditation of environmental laboratories by supporting the NELAP Accreditation Bodies (ABs) and non-governmental ABs (NGABs) recognized to accredit to the TNI Environmental Laboratory Sector (ELS) Standard, enabling stakeholders such as laboratories, proficiency testing providers and data users to effectively participate in the development of, adoption and implementation of, and compliance with the TNI standards.

## 2021 Accomplishments

- LASEC members are prepared to present both the Mentor Session and Assessment Forum sessions at the winter meeting.
- Members are reviewing the recently posted V2M1 Draft Standard in order to provide both individual comments, possible committee comments, and a recommendation to the NELAP AC about its suitability, per the Standards Review for Suitability SOP 3-106.
- The Mentor Session at the summer conference in Bellevue consisted of four presentations addressing MDLs and PT processes. The Assessment Forum dealt with emerging contaminants – PFAS, microplastics, COVID-19 in wastewater, and a general talk about assessing methods for emerging contaminants.

## Standard Interpretation Requests

As shown in the table below, the committee processed 14 Standard Interpretation Requests in 2014.

**Table 5. Standard Interpretation Requests Finalized in 2021**

<b>SIR#</b>	<b>Section</b>	<b>Topic</b>	<b>Date</b>
392	V1M2-5.5.8	What equipment must be identified	1/10/22
378	V1M2-5.5.13	Calibration frequency for reference thermometers	1/10/22
401	V1M2-5.5.13	Use of other microliter syringes	12/15/21
416	V1M2-5.6.4	Documenting traceability of reference materials, standards, and reagents	1/10/22
339	V1M4-1.6.1	On-going DOC	1/19/21
334	V1M4-1.6.3	Demonstration of Capability	1/19/21
336	V1M4-1.6.3	Marginal Exceedance Limits	1/19/21
373	V1M4-1.7.1	Negative values of relative percent error	12/15/21
387	V1M4-1.7.1	Second source verification of surrogates and/or internal	12/15/21
389	V1M4-1.7.1	Other possible approaches for DOCs	6/3/21
396	V1M4-1.7.1	Other possible approaches for DOCs	6/3/21
398	V1M4-1.7.1	Number of calibration points required	1/10/22
399	V1M5-1.7.3	Reporting Uncertainty required	12/15/21
406	V1M5-1.7.3	Media performance testing	12/15/21
399	V1M6-1.7.3	Reporting Uncertainty	12/15/21

## 2022 Objectives

- Sustain SIR progress.
  - Supplement SIRs with Implementation Guidance for non-SIR questions
- Review Voting Draft Standards as they are developed.
- Continue to provide Mentor Sessions and Assessment Forums at TNI conferences.
- Assume Role as Recognition Body for NGAB status (parallel to NEFAP and PTPEC recognitions).
- Develop Draft Policies and SOPs for NELAP as requested.

## 5.0 PROFICIENCY TESTING PROGRAM REPORT

The purpose of the Proficiency Testing Program Executive Committee (PTPEC) is to establish and maintain certain elements of a national PT Program to support TNI's Accreditation Programs and other TNI activities. Those elements include:

- Fields of Proficiency Testing (FoPT) tables, consisting of analytes, concentrations, matrices, and acceptance limits, that are appropriate for the scope of environmental monitoring performed in the United States.
- A listing of PT Provider Accreditors (PTPAs) that are TNI recognized.
- A list of organizations that are accredited by TNI recognized PTPAs as competent to provide PT samples to laboratories.

### 2021 Accomplishments

- The committee considered developing FoPT tables for polyfluoroalkyl substances (PFAS) and air and emissions,
- The committee added a footnote to the FoPT table for PCBs indication that a misidentification of an Aroclor would count as a failure.
- The PTPEC, PT Expert Committee, and WET Expert Committee had a joint meeting to understand the issues and discuss possible solutions to improve data comparability for WET PT Samples. The solution would require updates in Module 7. The changes needed include standardizing number of replicates per test, number of organisms per replicate, and reducing the age range of test organisms. Many of the changes center around information the labs must document.
- The Committee Perform initiated feasibility studies to explore
  - Radiochemistry Uncertainty to PT Evaluations
  - Technology-based PTs
  - Addition of preparation methods to FoPT tables
  - Air and Emissions FoPT Table
- FoPT tables for SCM, NPW, and DW were reviewed and approved for an implementation date of October 1, 2021.

### 2022 Objectives

- Address WET EC requests to standardize WET PT program.
- Proficiency Testing Provider Accreditor (PTPA) evaluations.

- Develop resolution for reporting uncertainty with Radiochemistry PT results.
- Gather and complete information on PT Program metrics.
- Continue working to be inclusive of non-TNI ABs.
- Address issue of method codes in LAMS for TPH/Oil and Grease/HEM
- Perform feasibility studies to explore adding the following to the TNI PT Program.
  - Perfluoroalkyl substances in drinking water
  - Radiochemistry Uncertainty to PT evaluations
  - Technology based PTs
  - Adding preparation methods to the FoPT tables.
  - Development of PT Program metrics
  - Air and Emissions FoPT tables

## 6.0 TASK FORCES AND OTHER ACTIVITIES

### 6.1 Competency Task Force

#### 2021 Accomplishments

- Identified Knowledge, Skills, and Abilities (KSAs) for assessor training to align with V2M1 Draft Standard (DS) Revision 0. Set this aside when comments on DS indicated significant dissatisfaction among NELAP ABs with the proposed updates; will resume when DS revisions are final.
- Envisioned and proposed updated qualifications and experience requirements for former Technical Manager role, now to be “Technical Expert” with operational but not supervisory authority and direct access to QAM. Discussions with Expert Committees and NELAP Accreditation Council led to further revision of the concept, which continues to evolve.
- Identified Knowledge, Skills and Abilities (KSAs) for QA Managers and began work on a credentialing program for such individuals.

#### 2022 Objectives

- Engage Credentialing Subcommittee and Expert Committees to create proposed structure for credentialing of defined roles such as Technical Expert, QA Manager, Assessor, etc.
- Transfer Technical Expert concept to Quality Systems for final clarification and definition of role.
- Prepare KSAs for Technical Expert and additional roles in ways that enable course and exam creation for credentialing of individuals for those positions (voluntary use of credentials).

### 6.2 Consumables Task Force

#### 2021 Accomplishments

- Developed a comprehensive list of contents necessary for product and service certificates.
- Completed a decision tree for categorization of critical supplies.

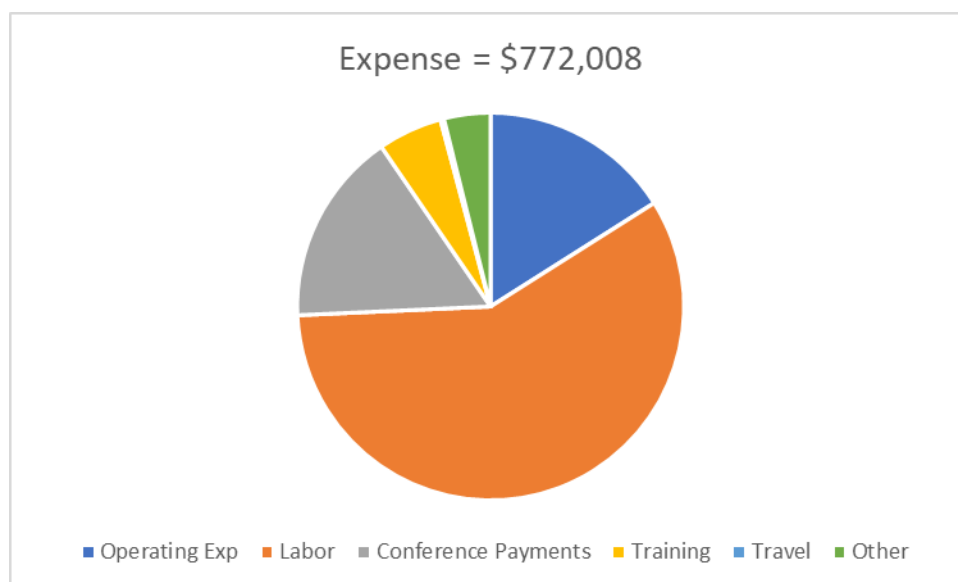
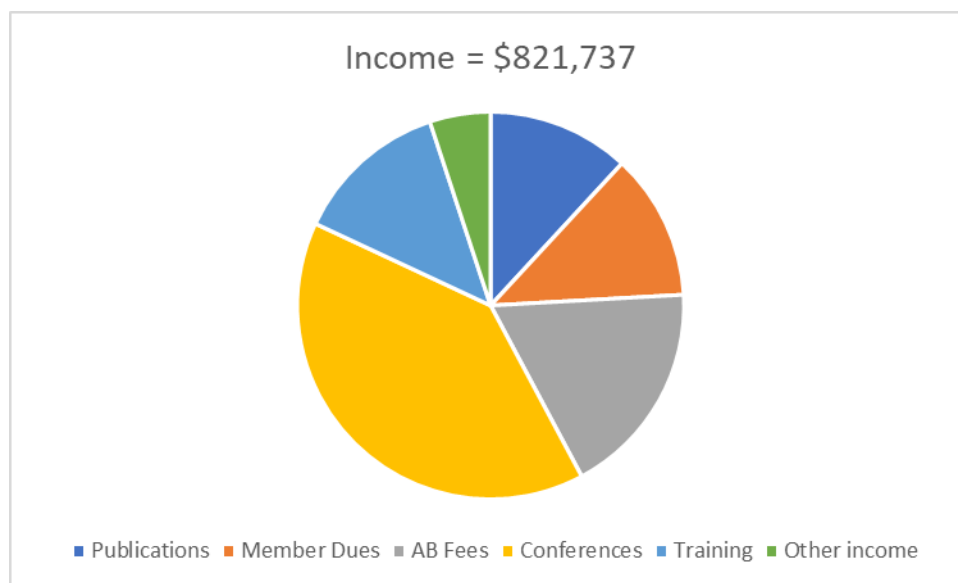
#### 2022 Objectives

- Combine the list and decision tree into a guidance document.
- Test the guidance with selected stakeholder groups.

### 6.3 Membership Report

- Active Members, January 1, 2021..... 1055
- Active Members, December 31, 2021 .... 1175
- Number of Committee Applications ..... 42

### 6.4 Statement of Activities



## Appendix 1. TNI Committee Rosters – 2021

### TNI Board of Directors

Jordan	Adelson	US Navy NAVSEA Programs Field Office
Aaren	Alger	Alger Consulting & Technology
Steve	Arms	Florida DOH (retired)
Kristin	Brown	Utah DOH
Justin	Brown	Environmental Monitoring and Technologies
David	Caldwell	Oklahoma DEQ
Stacie	Crandall	Hampton Roads Sanitation District
Jack	Farrell	Analytical Excellence, Inc.
Maria	Friedman	California State Water Resources Control Board
Myron	Gunsalus	Kansas DHE
Jessica	Jensen	KC Water
Paul	Junio	Northern Lake Service, Inc.
Sharon	Mertens	Milwaukee Metropolitan Sewerage District
Judy	Morgan	Pace Analytical
Patsy	Root	IDEXX Laboratories
Debbie	Rosano	Dept of Energy
Nick	Slawson	A2LA
Alfredo	Sotomayor	Milwaukee Metropolitan Sewerage District
David	Speis	Retired
Lem	Walker	USEPA OW OST

### Advocacy Committee

**Steve Arms**, Chair; **Lynn Bradley**, Program Administrator

Steve	Arms	Florida DOH (retired)
Teresa	Coins	Arkansas Analytical, Inc.
Robin	Cook	City of Daytona Beach EML
Stacie	Crandall	Hampton Roads Sanitation District
Zonetta	English	Louisville Jefferson Co., MSD
William	Lipps	Shimadzu
Sharon	Mertens	Milwaukee Metropolitan Sewerage District
Marlene	Moore	Advanced Systems, Inc.
Trinity	O'Neal	City of Austin Water Utility
Janice	Willey	NAVSEA LQAO
Josh	Wyeth	Phenova



## Appendix 1. TNI Committee Rosters – 2021 cont.

### Asbestos Committee

**Myron Getman**, Chair; **Bob Wyeth**, Program Administrator

Michael	Carpinona	NJDEP
Zonetta	English	Louisville Jefferson Co., MSD
Myron	Getman	NY State DOH
Glen	Green	Xcel Energy
Dixie	Marlin	Marlin Quality Management, LLC
Michelle	McGowan	EMSL Analytical Inc.
Dan	Shelby	EMLab P&K

### Chemistry Committee

**Valerie Slaven**, Chair; **Bob Wyeth**, Program Administrator

Jay	Armstrong	Virginia Dept. of General Services
Paula	Blaze	New Jersey DEP
Ali	Boren	State of Vermont
Calista	Daigle	AAA Laboratories
Eric	Davis	Horizon Information Systems
Tony	Francis	Saw Environmental
Deb	Gaynor	Independent Consultant
Shawn	Kassner	Pace Analytical Services, LLC
Charles	Neslund	Eurofins Lancaster Environmental
Max	Patterson	Utah Dept. of Health
Valerie	Slaven	PDC Laboratories
Chad	Stoike	ALS Environmental
Michelle	Wade	A2LA Workplace Training
Lee	Wolf	Independent Consultant
Colin	Wright	Florida DEP

## Appendix 1. TNI Committee Rosters – 2021 cont.

### Competency Task Group

**Aaren Alger**, Alger Consulting & Technology; **Lynn Bradley**, Program Administrator

Aaren	Alger	Alger Consulting & Technology
Paul	Banfer	EISC
Kenneth	Brown	City of Escondido
Julia	Caprio	Geosyntec
Patricia	Carvajal	San Antonio River Authority
Steve	Drielak	Drielak & Associates
Amanda	Dutko	Fairway Laboratories
Stacey	Fry	Babcock Laboratories
Kitty	Kong	Chevron
Kimberly	Kostzer	The Coca-Cola Company
Silky	Labie	ELCAT
Harold	Longbaugh	City of Houston
Emily	Mellot	Pennsylvania DEP
Michael	Michaud	City of Abilene
Mitzi	Miller	MQC, LLC
Sharon	Robinson	New Jersey DOH
Joann	Slavin	New York State DOH
Alfredo	Sotomayor	Milwaukee Metropolitan Sewerage District
Elizabeth	Turner	Pace Analytical Services, LLC.

### Consumables Task Group

**Judy Morgan**, Chair; **Bob Wyeth**, Program Administrator

Robert	Benz	Horizon LIMS
Mike	Booth	Inorganic Ventures
Kathryn	Chang	Eurofins CalScience
Eric	Davis	Horizon LIMS
Jack	Farrell	Analytical Excellence, Inc.
Andy	Hata	JMR Environmental Services
Shawn	Kassner	Kaycha Labs
Kimberly	Kostzer	The Coca-Cola Company
Debbie	Lacroix	METCO Environmental
William	Lipps	Shimadzu Scientific Instruments, Inc.
Tami	Minigh	City of Daytona Beach
Judy	Morgan	Pace Analytical Services, LLC.
Amy	Pollard	PamCo Tech
Sarah	Purtell	Suburban Laboratories
Patsy	Root	IDEXX Laboratories, Inc.
David	Smith	Environmental Express
Lauren	Stainback	NSI Lab Solutions

## Appendix 1. TNI Committee Rosters – 2021 cont.

### Consensus Standards Development Executive Committee

**Paul Junio**, Chair; **Bob Wyeth**, Program Administrator

Debbie	Bond	Alabama Power
Robin	Cook	City of Daytona Beach EML
Kirstin	Daigle	Pace Analytical Services, LLC
Cody	Danielson	Oklahoma DEQ
Scott	Haas	Environmental Testing, Inc.
Sheri	Heldstab	Chester Labnet
Kevin	Holbrooks	JEA
Jessica	Jensen	KC Water
Paul	Junio	Northern Lake Service, Inc.
Carl	Kircher	Florida DOH
Michelle	McGowan	EMSL Analytical Inc.
Rami	Naddy	TRE Env. Strat. LLC
Terry	Romanko	Eurofins TestAmerica
Michelle	Wade	A2La Workplace Training

### Field Activities Committee

**Scott Haas**, Chair; **Ilna Taunton**, Program Administrator

Doug	Berg	Perry Johnson Laboratory Accreditation, Inc.
Jack	Denby	HRSD
David	Fricker	A2LA
Bill	Guyton	ERM-West, Inc.
Scott	Haas	Environmental Testing, Inc.
Marlene	Moore	Advanced Systems, Inc.
Bill	Ray	William Ray Consulting LLC
Patrick	Selig	ANAB
Tyler	Sullens	Alabama Power Company
Shannon	Swantek	Enlightened Quality
Adam	Szafran	Environmental Monitoring & Technologies
Elizabeth	West	Louisiana DEQ

### Finance Committee

**Justin Brown**, Chair

Justin	Brown	Environmental Monitoring & Technology
Sharon	Mertens	Milwaukee Metropolitan Sewerage District
Jerry	Parr	The NELAC Institute
Alfredo	Sotomayor	Milwaukee Metropolitan Sewerage District

## Appendix 1. TNI Committee Rosters – 2021 cont.

### Information Technology Committee

**Mei Beth Shepherd**, Chair; **Janice Wlodarski**, Program Administrator

William	Daystrom	The NELAC Institute
Nick	Evans	JEA
Maria	Friedman	California State Water Resources Control Board
Paul	Harrison	Kansas Department of Health and Environment
Dan	Hickman	The NELAC Institute
Jerry	Parr	The NELAC Institute
Mei Beth	Shepherd	Shepherd Technical Services
Keith	Ward	Phenova

### Laboratory Accreditation Body Committee

**Carl Kircher**, Chair; **Lynn Bradley**, Program Administrator

Aaren	Alger	Alger Consulting & Technology
Socorro	Baldonado	Metropolitan Water District of Southern California
Bill	Batschelet	US EPA (retired)
Nilda	Cox	Eurofins Eaton analytical
Yumi	Creason	PA-DEP - Laboratory Accreditation Program
Carl	Kircher	Florida DOH
Sviatlana	Haubner	Cincinnati Metropolitan Sewer District
Michael	Perry	Southern Nevada Water Authority
Zaneta	Popovska	ANAB
Alia	Rauf	Utah DOH

### Laboratory Accreditation Systems Executive Committee

**Maria Friedman**, Chair; **Lynn Bradley**, Program Administrator

Aaren	Alger	Alger Consulting & Technology
Sumy	Cherukara	US EPA Region 2
Stacie	Crandall	Hampton Roads Sanitation District
Jack	Farrell	Analytical Excellence
Maria	Friedman	California State Water Resources Control Board
Bill	Hall	New Hampshire ELAP
Silky	Labie	Environmental Laboratory Consulting and Technologies, LLC
Harold	Longbaugh	Wastewater Operations Laboratory, City of Houston
Dorothy	Love	Eurofins Lancaster Labs
Louise	McGinley	Texas Comm. on Env. Quality
Michele	Potter	New Jersey DEP
Nick	Straccione	EMSL Analytical

## Appendix 1. TNI Committee Rosters – 2021 cont.

### Microbiology Committee

**Cody Danielson**, Chair; **Ilona Taunton**, Program Administrator

Hunter	Adams	City of Wichita Falls
Robin	Cook	City of Daytona Beach
Cody	Danielson	Oklahoma DEQ
Jody	Frymire	IDEXX Laboratories
Lily	Giles	Louisiana DEQ
Amy	Hackman	PA DEP
Jessica	Hoch	Texas Comm. on Env. Quality
Ashely	Larssen	KC Water
Christabel	Monteiro	ESC Lab Sciences
Enoma	Omoregie	NYCDEP, Water Distribution Laboratory
Mary	Robinson	Indiana State Department of Health
Robert	Royce	New Jersey DEP
Elisa	Snyder	City of Austin - Austin Water

### NEFAP Executive Committee

**Justin Brown**, Chair; **Ilona Taunton**, Program Administrator

Paul	Bergeron	Louisiana DEQ
Justin	Brown	Environmental Monitoring and Technologies
Jeff	Buystedt	City of Bend Environmental Compliance
Kirstin	Daigle	Pace Analytical Services
Jeremy	Driver	Alabama Power Company
Halley	Dunn Hastings	ARS ALEUT Remediation
David	Fricker	A2LA
Jacob	Gruzalski	Environmental Standards, Inc.
Pamela	Hamlett	US Air Force
Keith	Klemm	ANAB
Suzie	Nawikas	H&P Mobile Geochemistry, Inc.
Ryan	Pangelinan	Oregon DEQ
Norman	Rodriguez-Iglesias	EPA Region III
Russell	Schindler	SampleServe
Stephanie	Sparkman	CS Laboratories, Inc.
Tracy	Szerszen	Perry Johnson Laboratory Accreditation, Inc.
Elizabeth	Turner	Pace Analytical Services

## Appendix 1. TNI Committee Rosters – 2021 cont.

### NELAP Accreditation Council

**Kristin Brown**, Chair; **Lynn Bradley**, Program Administrator

Travis	Bartholomew	Oregon State Public Health Laboratory
Annmarie	Beach	Pennsylvania DEP
Lynn	Boysen	Minnesota DOH
Kristin	Brown	Utah DOH
David	Caldwell	Oklahoma DEQ
Millie	Rose	Illinois EPA
Carissa	Robertson	Kansas DHE
Bill	Hall	New Hampshire ELAP
Kimberly	Hamilton-Wims	Louisiana DEQ
Carl	Kircher	Florida DOH
Steve	Gibson	Texas Comm. on Env. Quality
Michele	Potter	New Jersey Dept of Environ Protect.
Victoria	Pretti	New York State Department of Health
Cathy	Westerman	Virginia Division of Consolidated Laboratory Services

### Nominating Committee

**Sharon Mertens**, Chair

Catherine	Katsikis	LDCFL, Inc.
Sharon	Mertens	Milwaukee Metropolitan Sewerage District
Aurora	Shields	KC Water

### Policy Committee

**Patsy Root**, Chair; **Ilona Taunton**, Program Administrator

JoAnn	Boyd	Southwest Research Institute
Virginia	Hunsberger	Pennsylvania DEP
Paul	Junio	Northern Lake Service, Inc.
Silky	Labie	Env. Lab. Consulting & Technology, LLC
Jerry	Parr	The NELAC Institute
Patsy	Root	IDEXX Laboratories
Mei Beth	Shepherd	Shepherd Technical Services
Eric	Smith	ALS Laboratory Group
Elizabeth	Turner	Pace Laboratories

## Appendix 1. TNI Committee Rosters – 2021 cont.

### PT Expert Committee

**Kirstin Daigle**, Chair; **Bob Wyeth**, Program Administrator

Rachel	Bailey	Advanced Analytical Solutions
James	Chambers	Fluor-BWXT Portsmouth LLC
Thekkekalathil	Chandraasekhar	Florida Department of Env. Protection
Kirstin	Daigle	Pace Analytical
Rachel	Ellis	New Jersey DEP
Patrick	Garrity	Kentucky Department for Environmental Protection
Craig	Huff	ERA (A Waters Company)
Susan	Jackson	South Carolina DHEC
Sennett	Kim	A2LA
Tim	Miller	Phenova
Reggie	Morgan	Hampton Roads Sanitation District
Ryan	Pangelinan	Oregon DEQ
Amy	Pollard	PamCo Tech

### PT Program Executive Committee

**Shawn Kassner**, Chair; **Ilona Taunton**, Program Administrator

Fred	Anderson	Advanced Analytical Solutions
Jennifer	Bordwell	Upper Occoquan Service Authority
Jennifer	Duhon	Millipore Sigma
Rachel	Ellis	New Jersey DEP
Patrick	Garrity	Kentucky Division of Water
Scott	Haas	Environmental Testing, Inc.
Michella	Karapondo	USEPA
Shawn	Kassner	Pace Laboratories
Carl	Kircher	Florida DOH
Dixie	Marlin	Marlin Quality Management, LLC
Eric	Smith	ALS Laboratory Group
Andy	Valkenberg	QASE Inc.

## Appendix 1. TNI Committee Rosters – 2021 cont.

### Quality Systems Committee

**Debbie Bond**, Chair; **Iлона Taunton**, Program Administrator

Stephanie	Atkins	Pace Analytical Services, LLC
Debbie	Bond	Alabama Power Company
Nicole	Cairns	New York State DOH
Michael	Demarais	SVL Analytical, Inc.
Tony	Francis	SAW Environmental
Lizbeth	Garcia	Oregon ELAP
Kathi	Gumpper	ChemVal Consulting
Earl	Hansen	The NELAC Institute
Ashely	Larssen	KC Water
Jenna	Majchrzak	New Jersey DEP
Shari	Pfalmer	Pace Analytical National
Bill	Ray	William Ray Consulting LLC
Amber	Ross	Pennsylvania DEP
Amy	Schreader	UC Laboratory
Nicholas	Slawson	A2LA
Alyssa	Wingard	NAVSEA

### Radiochemistry Committee

**Terry Romanko**, Chair; **Iлона Taunton**, Program Administrator

Robert	Aullman	Utah DOH
James	Chambers	Fluor-BWXT Portsmouth LLC
Sherry	Faye	NY DOH
Amanda	Fehr	GEL Laboratories, LLC
Velinda	Herbert	USEPA - National Analytical Environmental Laboratory
Ron	Houck	Pennsylvania DEP
Mark	Johnson	Louisiana DEQ
Brian	Miller	ERA (A Waters Company)
Greg	Raspanti	New Jersey DEP
Terry	Romanko	Eurofins TestAmerica
Stan	Stevens	Perma-Fix Environmental Services, Inc



## Appendix 1. TNI Committee Rosters – 2021 cont.

### Stationary Source Audit Sample Committee

**Sheri Heldstab**, Chair; **Ilona Taunton**, Program Administrator

Katie	Gattis	Element One, Inc.
Bill	Guyton	ERM
Sheri	Heldstab	Chester LabNet
Michael	Klein	New Jersey DEP
Edward	MacKinnon	TRC Environmental Corporation
Brian	Miller	ERA
Gregg	O'Neal	North Carolina DENR
Patrick	Selig	ERA
Michael	Schapira	Enthalpy Analytical, LLC
Tom	Widera	Pace

### Training Committee

**Calista Daigle**, Chair; **Ilona Taunton**, Program Administrator

Mark	Alessandroni	Markay Consulting Group
Aaren	Alger	Alger Consulting & Technology
Derek	Chen	City of Sacramento Water Quality Lab
Erin	Consuegra	Environmental Resource Analysts
Calista	Daigle	AAA Laboratories
Kodey	Eley	Libby Environmental
Jack	Farrell	Analytical Excellence, Inc.
David	Fricker	A2LA
Salima	Haniff	Bureau Veritas Laboratories
Catherine	Katsikis	LDCFL
Veronika	Kerdok	New York City DEP
Joe	Manzella	Orange County Sanitation District
Mitzi	Miller	NV5
Tami	Minigh	City of Daytona Beach
Georgia	Moulton	ALS Global
Jerry	Parr	The NELAC Institute
Dee	Shepperd	ddms, inc.
Jerry	Thao	Pace Analytical Services, LLC.
Shirley	Thomas	Thomas Resource Group
Curtis	Wood	ERA, A Waters Company

## Appendix 1. TNI Committee Rosters – 2021 cont.

### Whole Effluent Toxicity Committee

**Rami Naddy**, Chair; **Lynn Bradley**, Program Administrator

Dwayne	Burkholder	Pennsylvania DEP
David	Caldwell	Oklahoma DEQ
Thekkekalath	Chandrasekhar	Florida DEP
Stephen	Clark	Pacific EcoRisk
Natalie	Love	GEI Consultants
Rosana	McConkey	Washington State DOE
Ila	Meyer-Fritzsche	Virginia DCLS
Rami	Naddy	TRE Env. Strat. LLC
Teresa	Norberg-King	USEPA ORD NHEERL
Mark	O'Neil	Environmental Enterprises USA, Inc.
John	Overbey	American Interplex Corporation
Katie	Payne	Enthalpy Analytical
Caitie	Van Sciver	New Jersey DEP
Bruce	Weckworth	HRSD

## Appendix 2. New Method and Analyte Codes Added in 2021

### New Method Codes Added in 2021

Method Reference	Method Title
AEL SVOC-040	Advanced Environmental Laboratories - Diesel Range Organics (DRO), Oil Range Organics (ORO), and Residual Range Organics using GC/FID
ALPHA SOP 23528	Alpha Analytical - Selected Perfluorinated Alkyl Substances by SPE and Isotope Dilution LC/MS/MS
ALS HE-LCMSMS001	PFAS by HPLC/MS/MS
ALS Kelso LCP-DPA	ALS Kelso - Diphenylamine and N-Nitrosodiphenylamine by HPLC/UV
ASTM D1068-15A	Iron in Water by Flame Atomic Absorption
ASTM D1068-15B	Iron in Water by Flame Atomic Absorption, Graphite Furnace
ASTM D1068-15C	Iron in Water by Photometric Bathophenanthroline
ASTM D1126-17	Hardness in Water
ASTM D1179-16A	Fluoride Ion in Water by ISE
ASTM D1246-16	Bromide in Water by ISE
ASTM D1252-06A (12)	Chemical Oxygen Demand by Macro Closed Reflux and Titration
ASTM D1252-06B (12)	Chemical Oxygen Demand by Micro Sealed Reflux and Titration
ASTM D1293-18	pH in Water
ASTM D1426-15B	Ammonia by Titration
ASTM D1687-17A	Chromium in Water by Colorimetric (Diphenyl-Cabazide) Method
ASTM D1687-17B	Chromium by Flame Atomic Absorption
ASTM D1687-17C	Chromium by Graphite Furnace Atomic Absorption
ASTM D1688-17A	Copper in Water by Flame Atomic Absorption
ASTM D1688-17B	Copper in Water by Flame Atomic Absorption
ASTM D1688-17C	Copper by Graphite Furnace Atomic Absorption
ASTM D1783-01 (12)	Phenolics, Manual Distillation
ASTM D1783-01A (12)	Phenols by Manual Colorimetric Method
ASTM D1783-01B (12)	Phenols by Direct Photometric method
ASTM D1886-14A	Nickel in Water by Flame Atomic Absorption
ASTM D1886-14B	Nickel in Water by Chelation-Extraction Atomic Absorption
ASTM D1886-14C	Nickel in Water by Graphite Furnace Atomic Absorption
ASTM D2036-09A (15)	Total Cyanides After Distillation
ASTM D2036-09B (15)	Cyanides Amenable to Chlorination
ASTM D2972-15A	Arsenic by UV-Vis Spectrometry
ASTM D2972-15B	Arsenic by Gaseous Hydride Atomic Absorption
ASTM D3223-17	Total Mercury in Water by Cold Vapor Atomic Absorption
ASTM D3373-17	Vanadium in water by Graphite Furnace Atomic Absorption
ASTM D3454-18	Radium-226 in Water
ASTM D3557-17A	Cadmium in Water Atomic Absorption
ASTM D3557-17B	Cadmium in Water Atomic Absorption
ASTM D3557-17C	Cadmium by Anodic Stripping Voltammetry
ASTM D3557-17D	Cadmium in Water by Graphite Furnace Atomic Absorption
ASTM D3558-15A	Cobalt by Flame Atomic Absorption
ASTM D3558-15B	Cobalt by Flame Atomic Absorption

## Appendix 2. New Method and Analyte Codes Added in 2021 cont.

### New Method Codes Added in 2021 cont.

Method Reference	Method Title
ASTM D3558-15C	Cobalt by Graphite Furnace Atomic Absorption
ASTM D3559-15A	Lead in Water by Direct Atomic Absorption
ASTM D3559-15B	Lead in Water by Chelation-Extraction Atomic Absorption
ASTM D3559-15C	Lead by Anodic Stripping voltammetry
ASTM D3590-17A	Total Kjeldahl Nitrogen in Water
ASTM D3590-17B	Total Kjeldahl Nitrogen in Water Semiautomated Colorimetric, Bertholt
ASTM D3645-15A	Beryllium by Flame Atomic Absorption
ASTM D3697-17	Antimony in Water by Gaseous Hydride Atomic Absorption
ASTM D3867-16A	Nitrite-Nitrate in water by Automated Cadmium Reduction
ASTM D3867-16B	Nitrite-Nitrate in water by Manual Cadmium Reduction
ASTM D4190-15	Metals by Direct Current Plasma
ASTM D4282-15	Free Cyanide in Water by Microdiffusion
ASTM D4327-17	Anions in Water by Chemically Suppressed Ion Chromatography
ASTM D4382-18	Barium by Graphite Furnace Atomic Absorption
ASTM D4658-15	Sulfide in Water by Ion Selective Electrode
ASTM D4839-03 (2017)	Total and Organic Carbon in Water by Ultraviolet and/or Persulfate Oxidation
ASTM D512-12A	Chloride by Mercuric Nitrate Titration
ASTM D512-12C	Chloride Ion in Water by Ion Selective Electrode
ASTM D5257-17	Dissolved Hexavalent Chromium in Water by IC
ASTM D5811-08	Strontium-90 in Water
ASTM D5811-20	Strontium-90 in Water
ASTM D6888-16	Available Cyanide with Ligand Displacement and FIA Utilizing Gas Diffusion Separation and Amperometric Detection
ASTM D6913(2009)	Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis
ASTM D6913/D6913M-17	Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis
ASTM D7065-17	Nonylphenol by GC/MS
ASTM D7237-15A	Free Cyanide with FIA Utilizing Gas Diffusion Separation and Amperometric Detection
ASTM D7284-13 (17)	Total Cyanide in Water by Micro Distillation, FIA with Gas Diffusion Separation and Amperometric Detection
ASTM D7511-12 (17)	Total Cyanide by Segmented FIA, In-line UV Digestion and Amperometric Detection
ASTM D7573-09 (17)	Total Carbon and Organic Carbon by High Temperature Catalytic Oxidation and IR Detection
ASTM D7614-20	Total Suspended Particulate (TSP) Hexavalent Chromium in Ambient Air Analyzed by IC-UV-Vis
ASTM D7928-17	Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis
ASTM D7979-19	Per- and Polyfluoroalkyl Substances in Water, Sludge, Influent, Effluent and Wastewater by (LC/MS/MS)
ASTM D858-17A	Manganese in Water by Flame Atomic Absorption
ASTM D858-17B	Manganese in Water by Chelation-Extraction Atomic Absorption
ASTM D858-17C	Manganese in Water by Graphite Furnace Atomic Absorption
ASTM D888-12A	Dissolved Oxygen in Water Titrimetric High Level
ASTM D888-12B	Dissolved Oxygen in Water by Instrumental Probe

## Appendix 2. New Method and Analyte Codes Added in 2021 cont.

### New Method Codes Added in 2021 cont.

Method Reference	Method Title
ASTM D888-12C	Dissolved Oxygen in Water by Luminescence Sensor
ASTM E1706-05 (20-day Chironomus dilutus)	Toxicity of Sediment-associated Contaminants with Chironomus dilutus
ASTM E1706-05 (28-day Hylella azteca)	Toxicity of Sediment-associated Contaminants with Hylella azteca
BAAQMD Method 45	Bay Area Air Quality Management - Butanes and Pentanes in Polymeric Material
BE SOP No 7	Beacon Environmental - GC/MS Sample Analysis for Packed Tubes by EPA Methods TO-17 and TO-15
Bio-Rad RAPID'E.coli 2 (REC2)	Simultaneous Detection of Total Coliform Bacteria and Escherichia coli Using RAPID'E. coli (REC2) in Drinking Water
BSK SOP OR-SP-0040	BSK Associates - PFAS by SPE and HPLC/MS/MS, Based on EPA 537.1
CEM Table 2-1R Microwave Digestion	CEM - Microwave digestion for Metals
Con-Test APAL - SOP 454	Con-Test, A Pace Analytical Laboratory - Per- and Polyfluorinated Alkyl Substances (PFAS) by Solid Phase Extraction & LC/MS/MS Isotope Dilution
Con-Test APAL - SOP 466	Con-Test, A Pace Analytical Laboratory - Per- and Polyfluorinated Alkyl Substances (PFAS) for Soil/Solid samples by Solid Phase Extraction & LC/MS/MS Isotope Dilution
DEQ03-LAB-0052-SOP (GC/MS)	Oregon DEQ - Semivolatile Organic Compounds by GC/MS
DEQ17-LAB-0006-SOP	Oregon DEQ - Hexavalent Chromium in Ambient Air Particulate Matter by IC
DV-LC-0012	TestAmerica Denver - PFOA, PFCs, and PFSS in Water and soil by LC-MS-MS
DV-LC-0012	TestAmerica Denver - PFOA, PFCs, and PFSS in Water and soil by LC-MS-MS
ELL T-PFAS-WI12031	Eurofins Lancaster Laboratories - Polyfluorinated Alkyl Substances in Solids by Method 537 Isotope Dilution
ELL T-PFAS-WI14355	Eurofins Lancaster Laboratories - PFAS in Aqueous Samples by EPA Method 537 Isotope Dilution
EPA 1006.0 - Topsmelt 7-Day Chronic	Topsmelt (Atherinops affinis) Larval Survival and Growth Test Method
EPA 1007.0 - Mysid (Holmesimysis costata) 7-Day Chronic	Mysid, Holmesimysis costata, Survival and Growth Test Method
EPA 1008.0 - Sea Urchin (Strongylocentrotus purpuratus) and Sand Dollar (Dendraster excentricus) Fertilization	EPA 1008.0 - Sea Urchin (Strongylocentrotus purpuratus) and Sand Dollar (Dendraster excentricus) Fertilization
EPA 127	Monochloramine Concentration in Drinking Water
EPA 1628	PCB Congeners in Water, Soil, Sediment, Biosolids, and Tissue by GC/MS SIM
EPA 3512	Solvent Dilution of Non-potable Waters
EPA 537.1	Per- and Polyfluorinated Alkyl Substances in Drinking Water by LC/MS/MS
EPA 8327	Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

## Appendix 2. New Method and Analyte Codes Added in 2021 cont.

### New Method Codes Added in 2021 cont.

Method Reference	Method Title
EPA 903.1 (SC)	Radium-226 Radon Emanation Technique
EPA ALT-133	Alternate Approach to Methods 6, 8, 15A, and 16A
EPA ALT-136	Alternative Analytical Approach for Method 18
EPA Method 326	Isocyanates in Stationary Source Emissions
EPA R2 SOP DW-1	EPA R2 - VOCs by Purge & Trap GC-MS
EPA/600/R-99/064 - 20-day Chironomus dilutus (100.5)	20-day Chironomus dilutus Toxicity
EPA/600/R-99/064 - 28-day Hyalella azteca (100.4)	28-day Hyalella azteca Toxicity
ETB SOP BR-LC-009	Eurofins TestAmerica - Burlington - Per and Poly-fluorinated Substances (PFAS) in Water, Soils, Sediments, and Tissue
ETD ISO 216754	Eurofins TestAmerica - Denver - (PFAS) in Water Using SPE and LC/MS-MS
FIALab 100	Inorganic Ammonia by Continuous Flow Gas Diffusion and Fluorescence Detector
GCAL SOP GCSV-004	Gulf Coast Analytical Laboratory - Petroleum Hydrocarbons (DRO, ORO, EPH, RRO) by GC
GEL SOP GL-OA-E-076	GEL Laboratories - Extraction and Analysis of Per- and Polyfluoroalkyl (PFAS) Substances Using LC/MS/MS
Geochemical SOP I-5580	Geochemical Testing - Volatile Fatty Acids by Ion Chromatography
Geochemical SOP O-8220	Geochemical Testing - Water Leach
HACH 10102	Free Chlorine DPD TNT 867
HACH 10231	Free Chlorine DPD Method TNTplus 866/867
HACH 10232	Total Chlorine DPD Method TNTplus 866/867
ISO 9308-1	Enumeration of E. coli and Coliform Bacteria
MACHERY-NAGEL GmbH 036/038	Spectrophotometric Measurement of Chemical Oxygen Demand in Water and Wastewater
Maine HETL ME 531	Maine HETL - N-Methylcarbamoyloximes and N-Methylcarbamates in Drinking Water by LC/MS-MS
Micrology Laboratories Kwik-Count EC	Rapid Detection of E. coli in Beach Water by KwikCount
MLI SOP Part II #10	McGlynn Laboratories, Inc - Phycocyanin, Method, Sarada, 1999
MLI SOP Part II #11	McGlynn Laboratories, Inc - Phycoerythrin, Method, Thiosen, 2017
Modified Colitag	Modified Colitag Test Method for the Simultaneous Detection of E. coli and other Total Coliforms in Water (ATP D05-0035)
PACE ENV-SOP-MIN4-005	PACE Analytical - Whole Air Sample for VOC by GC/MS (TO-15/TO14)
PACE ENV-SOP-MIN4-0178	Pace Analytical - Selected PFAS by LC/MS/MS Isotope Dilution
PACE ENV-SOP-MIN4-0178	Pace Analytical - Selected PFAS by LC/MS/MS Isotope Dilution
PACE SOP ENV-SOP-HUN1-0019	Diesel Range/ORO/TN EPH Organics by Gas Chromatography
PACE SOP-BTRO-0111	PACE Analytical Gulf Coast - PFAS by Isotopic Dilution
Palintest 1001	Lead in Drinking Water by Differential Pulse Anodic Stripping Voltametry
Palintest ChlordioX Plus	Chlorine Dioxide and Chlorite in Drinking Water by Amperometry Using Disposable Sensors
Palintest ChloroSense	Free and Total Chlorine in Drinking Water by Palintest ChloroSense
QuikChem 10-204-00-1-X	Total Cyanide in Drinking Water and Wastewater Using Micro-distillation and Flow Injection

## Appendix 2. New Method and Analyte Codes Added in 2021 cont.

### New Method Codes Added in 2021 cont.

Method Reference	Method Title
SCAQMD 306-91	South Coast Air Quality Management District - Pentanes in Expandable Styrene Polymers
SES SOP ME00213-18	Pace Analytical W Columbia -Per- & Polyfluoroalkyl Substances (PFAS) by LC/MS/MS (Isotope Dilution)
SM 2540 B-2015	Total Solids Dried at 103 - 105 deg C
SM 2540 C-2015	Total Dissolved Solids Dried at 180 deg C
SM 2540 D-2015	Total Suspended Solids Dried at 103 - 105 deg C
SM 2540 E-2015	Fixed and Volatile Solids Ignited at 550 deg C
SM 2540 F-2015	Settleable Solids
SM 2540 G-2015	Total, Fixed, and Volatile Solids
SM 4500-CN <sup>-</sup> B-2016	Cyanide Preliminary Treatment of Samples
SM 4500-CN <sup>-</sup> C-2016	Cyanide (Total) After Distillation
SM 4500-CN <sup>-</sup> D-2016	Cyanide by Titrimetric Method
SM 4500-CN <sup>-</sup> E-2016	Cyanide by Colorimetric Method
SM 4500-CN <sup>-</sup> F-2016	Cyanide by Ion Selective Electrode
SM 4500-CN <sup>-</sup> G-2016	Cyanides Amenable to Chlorination after Distillation
SM 4500-CN <sup>-</sup> I-2016	Weak Acid Dissociable Cyanide
SM 4500-NO <sub>3</sub> <sup>-</sup> D-2016	Nitrate Nitrogen by Selective Electrode
SM 4500-NO <sub>3</sub> <sup>-</sup> E-2016	Nitrate Nitrogen by Cadmium Reduction Method
SM 4500-NO <sub>3</sub> <sup>-</sup> F-2016	Nitrate Nitrogen by Automated Cadmium Reduction
SM 4500-NO <sub>3</sub> <sup>-</sup> H-2016	Nitrate Nitrogen by Automated Cadmium Reduction
SM 4500-NO <sub>3</sub> <sup>-</sup> I-2016	Nitrate Nitrogen by Automated Cadmium Reduction Flow Injection
SM 4500-NO <sub>3</sub> <sup>-</sup> J-2018	Nitrate Nitrogen by Enzymatic Reduction Method
SM 4500-O F-2016	Dissolved Oxygen by Copper Sulfate-Sulfamic Acid Flocculation Modification
SM 4500-O G-2016	Dissolved Oxygen by Membrane Electrode
SM 5310 C-2014	Total Organic Carbon (TOC) by Persulfate-Ultraviolet Oxidation Method
SM 9221 B-2014	Multiple Tube Fermentation Qualitative (LTB): Total Coliform
SM 9221 D-2014	Coliform by Presence-Absence (P-A) Coliform Test
SM 9221 E-2014	Multiple Tube Fermentation Quantitative (EC): Fecal Coliform
SM 9221 F.2-2014	Multiple Tube Fermentation Qualitative (LTB/EC MUG): Total Coliform and E. Coli
SM 9221 F-2014	Multiple Tube Fermentation Qualitative (LTB/EC MUG): Total Coliform and E. Coli
SM 9222 B-2015	Membrane Filtration Quantitative (M-Endo): Total Coliform
SM 9222 D-2015	Membrane Filtration Quantitative: Fecal Coliform
SM 9222 I-2015	Total Coliform and E. coli by Fluoro/Chromogen Membrane Filter Procedure
SM 9223 B-2016	Chromogenic/Fluorogenic Qualitative Quantitative: Total Coliform and E. coli
SM 9230 B-2013	Enterococci and Fecal Streptococci by Multiple Tube Fermentation
SM 9230 C-2013	Enterococci and Fecal Streptococci by Membrane Filter Techniques
SM 9230 D-2013	Fluorogenic Quantitative (Enterolert): Enterococci
USGS I-2540-90	Dissolved Nitrate Nitrogen by Automated-Segmented Flow
USGS O-4436-16	Heat Purgeable and Ambient Purgeable Volatile Organic Compounds
WS-WC-0050	TestAmerica West Sacramento - Nitrocellulose in Aqueous and Soil/Sediment Samples by Colorimetric Autoanalyzer

## Appendix 2. New Method and Analyte Codes Added in 2021 cont.

### New Method Codes Added in 2021

Name	CAS_Number
Acid Digestion of Waters for Total Recoverable or Dissolved Metals	NA
Kerosene Range Organics (KRO)	NA
2H-Perfluoro-2-decenoic acid (FOUEA)	70887-84-2
2H-Perfluoro-2-octenoic acid (FHUEA)	708878-88-6
Sum - PFOA + PFOS	NA
4-Chlorobenzenesulfonic acid (pCBSA/MCBSA)	98-66-8
SARS-CoV-2	NA
Alpha Particle Radioactivity	NA
Beta Particle Radioactivity	NA
Diethyl phosphorodithioic acid	298-06-6
Dimethyl phosphorodithioic acid	756-80-5
Trifluoroacetic acid	76-05-1
C-Phycocyanin	11016-15-2
R-Phycoerythrin	11016-17-4
Total coliforms and E. coli (Enumeration)	NA
Total Butanes	NA
Total Pentanes	NA