

Collaboration in *Standard Methods for the Examination of Water and Wastewater*

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Who Am I?

- Former Lab Rat
- Current QA Geek
- Part Coordinator, Part 6000
“Individual Organic Compounds”



Method Consolidation

- Late 80s: Push for consolidating methods with EPA
- 1989 “Norfolk Conference”
 - “Methods Consolidation is Happening!”



Overview

- History and Structure of Organization
- Compendium Approval Process
- Method Development and Approval Process
- Observations on Collaboration
 - Movement from Guidance to Regulatory Methods
 - Case Studies



Early Stages

- 1880s- “Movement for securing the adoption of more uniform and efficient methods of water analysis”
- Special Committee in Chemical Section of the American Association for the Advancement of Science.
- Publication of Committee report in 1889



First Method, Five Parts

- “A Method, in Part, for the Sanitary Examination of Water, and for the Statement of Results, Offered for General Adoption”
 - “Free” and “albuminoid” ammonia
 - Oxygen-consuming capacity
 - Total nitrogen as nitrates and nitrites
 - Nitrogen as nitrites
 - Statement of Results



...and they're off!...



Microbiological Methods

- Conference of Microbiologists convened by APHA in 1895
- Drew up slate of microbiological methods
- Presented in 1897
- Received wide acceptance



Appointment of SM Committee

- 1899-APHA appoints “Committee on Standard Methods of Water Analysis”
- Compendium Published in 1905 as “Standard Methods for Water Analysis”
 - Physical
 - Chemical
 - Microscopic and
 - Bacteriological Methods



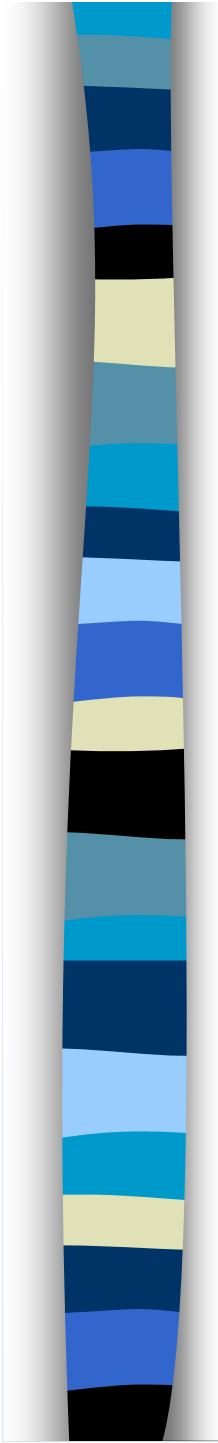
Transmittal Letter Highlights

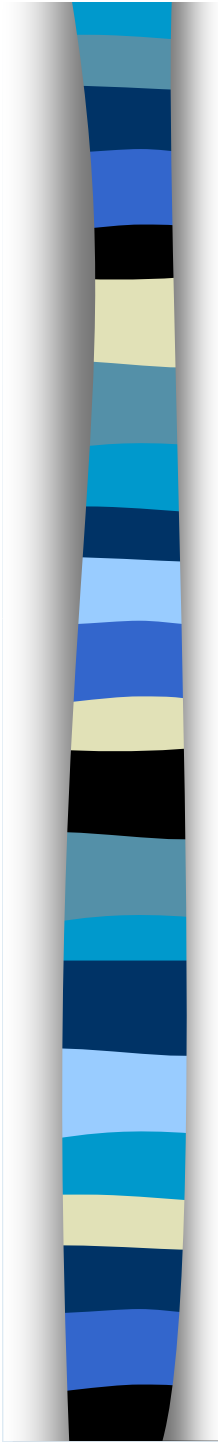
- Methods believed to represent “best current practice”
- generally applicable in connection with the ordinary problems of
 - water purification
 - sewage disposal
 - sanitary investigations



Transmittal Letter Highlights

- Special problems “obviously require the methods best adapted to them”
- Sound progress in analytical work will advance in proportion to the general adoption of methods which are reliable, uniform and adequate

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- “It is said by some that standard methods within the field of applied science tend to stifle investigations and that they retard true progress. If such standards are used in the proper spirit, this ought not to be so.”

- 
- The Committee strongly desires that every effort shall be continued to improve the techniques of water analysis and especially to compare current methods with those herein recommended, where different, so that the results obtained may be still more accurate and reliable than they are at present.”



Principles

- Methods collected and edited by committee
- Attempt to standardize the best current practices
- Plan to update the methods as techniques improve

(and this was 110 years ago...)



Also from the 1st Edition

- “It is assumed that those using these directions are thoroughly grounded in the principles of chemistry and biology, and that they are also familiar with the leading literature upon the subject. So many satisfactory textbooks upon chemical analysis in general and water analysis in particular are in existence...



Continued

- ...that it is unnecessary to give a complete detailed description of all procedures; but it is fully recognized that in many cases the adherence to certain details is an essential matter, and hence for the newer methods they are incorporated in this report.”



Another Guiding Principle

- These methods are written by trained scientists for use by trained scientists
 - Some of the detail that should be obvious to a trained scientist will be omitted
 - Required detail may be added for newer techniques



Continued History

- APHA publishes 1st Ed. In 1905
- AWWA joins in Sixth Edition (1925)
- Federation of Sewage Works Associations (which will become WEF) develops methods which are included in the Eighth Edition (1936)
- WEF joins in full in 1947



Current Structure

- *Standard Methods for the Examination of Water and Wastewater* is published as a joint effort of
 - APHA
 - AWWA
 - WEF
- Ultimate responsibility rests with Executive Directors of the three societies



Current Structure

- Joint Editorial Board (JEB)
- Part Coordinators (PCs)
- Joint Task Groups (JTGs)
- Standard Methods Committee (SMC)
- Administrative Personnel
 - Standard Methods Manager
 - Managing Editor



Joint Editorial Board

- Each society appoints one member to the Joint Editorial Board
 - APHA: Eugene W. Rice
 - AWWA: Andrew D. Eaton
 - WEF: Rodger B. Baird*
- The JEB Chair rotates annually among the three members

* *current chair*



Part Coordinators

- Each member of the JEB is particularly responsible for certain Parts of the book
- Each Part is managed by a volunteer Part Coordinator
- Part Coordinators are responsible to their JEB representative
- There are 10 parts in the book
 - 4000, 6000, 7000, 9000 and the AWWA JEB rep are all here this week



Joint Task Groups

- Each Method is developed by a Joint Task Group (JTG), appointed by the JEB with input from part coordinators
- JTGs are staffed by volunteers who have an interest in the method/technology
- Each JTG has an appointed Chair



Standard Methods Committee

- Membership includes all people who have submitted required information
- Members self-appoint to vote on particular sections
- Consensus body
- Membership in a sponsoring society is not required



Administrative Staff

- Standard Methods Manager
 - Steve Posavec
 - Serves as point of contact
 - Organizes meetings
 - Tracks method development
 - Tracks membership
 - Maintains all required records



Administrative Staff

- **Managing Editor**
 - Laura Bridgewater
 - Edits and typesets all manuscripts
 - Ensures style uniformity



Book Production

- JEB

- Production
- Organization
- Uniformity

- Society Executive Directors

- Final Approval



Method Production Managed by the PCs

- Proposal
- Writing/Editing
- Approval



Proposal

- Writing or Editing
- Anyone inside or outside SMC
- Subject to JEB approval



Writing/Editing

- JTG Formation
- Manuscript development
- JTG Approval



JTG Makeup

- Formed by JEB Liaison in cooperation with PC
 - Appointment of Chair
 - Develop Charge and Schedule (JEB)
 - Recruitment of members by JEB Liaison, PC, JTG Chair
 - Appointment by JEB Liaison



Membership Restrictions

- Generally, a product manufacturer representative may not chair JTG
- Generally, no two persons from the same company or organization may serve on the JTG
- Exceptions can be made by the JEB



JTG Responsibilities

- Chair determines strategy and schedule
- Develop text (SM Style)
- Try to keep to schedule



Approval

- JTG
- PC/JEB Liaison
- JEB
- SMC



JTG Approval

- Approval by Ballot
- Negatives must have a reason
- Should be unanimous
 - In cases of non-resolution, negative votes may be carried forward to SMC vote



Review

- Approved text reviewed by
 - PC
 - JEB Liaison
 - Standard Methods Manager
- Comments returned to JTG for review
- Non-editorial changes balloted within JTG



JEB Approval

- JEB votes for approval
 - Negatives must be addressed
 - Editing possible
 - Must be unanimous



SMC Approval

- Ballots to all interested SMC members
 - Includes unresolved negatives, if any
- Negatives must include technical reasons and revised text
- Approval required by two-thirds of all ballots sent out
- Comments allowed



Resolving Negative Votes

- Negative votes must be resolved
- Must be technical in nature
- Non-resolution remands manuscript to JTG
- Re-votes may be limited to changed text
- Resolution of all negatives yields “Approved by Standard Methods Committee” (*whew!*)



Collaboration



Collaboration

- Collaboration with the greater environmental community
 - Membership
 - Ties to Regulatory Agencies
 - Eye to method research



Membership

- Open to all interested parties
 - Affiliation with sponsoring society not required
 - Requires submittal of contact information and interest information
- Participation on JTGs is open to all



Ties to Regulatory Bodies

- Annual meetings include representatives from EPA
 - Steve Wendelken, USEPA Office of Groundwater and Drinking Water
 - Lemuel Walker, USEPA CWA ATP Coordinator
- Many EPA personnel serve on SMC



Eye to Research

- JEB Members and PCs try to keep current on method research in their areas.



Example: PPCPs

- Pharmaceuticals and Personal Care Products are of increasing concern in water and wastewater
- A Paper was published in late 2010 in *Environmental Science and Technology* detailing diurnal variations in some PPCPs in wastewater.



PPCPs, cont.

- This same method was used in a WaterRF interlab analysis project with good results
- The paper and the WaterRF project provided the method developed to generate the data
- The primary author is now Chair of the JTG writing a Standard Method for the analysis of PPCPs in water



...On a Broader Front...



“Regulatory Friendly”

- Complaint: *Standard Methods* are not written as regulatory methods
 - Methods are not written in prescriptive language
 - Quality Control requirements are not clearly communicated
- *Standard Methods* evaluation of the complaint: True



Apologetic

- From the 1st Edition: “It is assumed that those using these directions are thoroughly grounded in the principles of chemistry and biology, and that they are also familiar with the leading literature upon the subject.”
- Remember: This was one of the early principles of *Standard Methods*.



However...



Collaboration

- Technology Transfer Act pushes EPA to use outside sources
- EPA wishes to use *Standard Methods*, but needs more regulatory specificity
- “QA/QC” Update project



Upgrade to “-020” Sections

- Target: 22nd Edition
- Goal: Upgrade all “-020” sections to include specific QC requirements (QA) for each “Section”
- Previously these were tacitly part of part 1000 (general QA/QC) so they were considered by SM to be editorial changes



How Did We Involve EPA?

- EPA reviewed some of the early versions of the 020 sections so we were sure we were meeting their needs
- In the end, the QC “belongs to SM” so it was important that we follow our process.



Process

- Part Coordinators and JEB
- Common format/language
- Draft Section
- Review and Comment Ballot
- Redraft Sections
- JEB Approval



Result

- Inclusion in 22nd Edition



Continue the Collaboration!

- Join the Standard Methods Committee
- Work on a JTG

www.standardmethods.org

“Join Standard Methods Committee”



Questions?



Thank You!