SUSAN D. CHAPNICK, M.S.
President/Principal Scientist
Sr. Environmental Chemist

Professional Affiliations

- MassDEP Bureau of Waste Site Cleanup (BWSC) Advisory Board
- Licensed Site Professional Association, Massachusetts, former Board Member and current Associate (LSPA)
- Society of Environmental Toxicology and Chemistry (SETAC)
- American Chemical Society
- Conservation Commission Board member, Arlington, MA

Areas of Expertise

- Setting Data Quality Objectives (DQOs)
- Metals/Inorganic Chemistry
- Method Development
- Quality Assurance Project Plans
- Technical Chemistry Review
- Field & Lab corrective action
- Data Validation
- Data Usability Assessments
- Quality Assurance Management
- Laboratory Audits
- Consultant for Regulatory Agencies
- Litigation Support

Publications/Presentations/ Training

- *Fundamentals of Environmental Analysis & Data Quality Assessment;* Boston University School of Public Health Lectures, 2010 - 2017
- *Arsenic and Thallium Data in Environmental Samples: Fact or Fiction?* Remediation Journal, 2010

Susan Chapnick, M.S. is President and a Principal Scientist of New Environmental Horizons, Inc. (NEH). She is a recognized expert in Metals and Inorganic environmental chemistry. Ms. Chapnick has over 30 years of experience in the development of methods, analysis, and data evaluation for Metals and other inorganic parameters including cyanide compounds, organic carbon compounds, and water quality parameters (including biological measurements). She applies her depth of experience to evaluate usability of current and historical data and in the development and review of project-specific Work Plans, QAPPs, and method development for environmental investigations in support of NOAA NRDA, USEPA Superfund, US Army Corps of Engineers, and state-led programs. Ms. Chapnick has successfully provided technical support to regulatory and commercial clients for complex environmental data issues involving analyses of methyl mercury in biological tissue, organic vs. inorganic forms of arsenic as related to toxicity, and other specialty inorganic methods in a variety of media.

Ms. Chapnick is an appointed member of the Massachusetts Department of Environmental Protection (MassDEP) Bureau of Waste Site Cleanup (BWSC) Advisory Board where she champions scientific integrity in environmental policy and regulations through technical input and review of regulatory guidance. She was a lead scientist in the development of the Metals and Inorganic methods promulgated in the MassDEP Compendium of Analytical Methods (CAM) protocols, which are the state-required QA/QC protocols for environmental analyses in support of site remediation.

Education/Training

- M.S., Marine Science (Chemical Oceanography), University of South Carolina
- B.A., Biological Sciences, Barnard College, Columbia University

REPRESENTATIVE EXPERIENCE

Project-specific Data Quality Objectives (DQOs), Method Development, Technical Review

Ms. Chapnick is the project *Quality Assurance Officer (QAO) and Senior Scientist* for several New York City (NYC) environmental investigations at the Gowanus Canal Superfund Site and the Newtown Creek Superfund site, both in NYC. The City is investigating potential contamination from Combined Sewer Overflows (CSOs) and historical contamination from other sources in sediments. Ms. Chapnick assists with method development and method modifications for Inorganic parameters of interest to the investigation, including analyses of trace Metals, total organic carbon, black/soot carbon, total suspended solids, and radionuclides. She was responsible for coordinating sample collection and analysis activities for an extensive ecological toxicity evaluation of Newtown Creek Sediments, where she coordinated with NYC, the engineering firm team, US Army Corps laboratories, and other subcontractors for the successful implementation and data collection to evaluate ecological risk. Ms. Chapnick generates and reviews project-specific Work Plans, develops project DQOs and method-specific QA/QC acceptance criteria for Metals and other inorganic parameters, and performs technical review of EPA Region 2 and related site reports and memoranda.

Preparation of Project-specific QAPPs

Ms. Chapnick has developed numerous project-specific QAPPs and is/was the acting project Quality Assurance Officer (QAO) for large, complex sites including Newtown Creek Superfund Site for New York City environmental investigations of combined sewer overflows and sediments from 2015 to present; New Bedford Harbor, MA for US Army Corps sediment and surface water investigations from 2000 - 2014; and at the Durham Meadows Superfund Site, CT from 2007 – 2014 where both EPA and CT state regulatory requirements needed to be addressed. She has experience with many regulatory programs, including USEPA (Regions 1, 2, and 3), NYSDEC, NYCDEP, NOAA-NRDA, US Army Corps (USACE), and state programs (CT, MA, ME, NH, NJ, NY, RI). This experience includes the more detailed format in the Uniform Federal Policy (UFP) for QAPPs, currently required by many of the USEPA Regions and the USACE.

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Publications/Presentations/ Training – cont'd

- *Evaluating Data Usability and Representativeness Under the MCP*; AEHS International Conference, 2006
- *Quality Assurance is Not a Guarantee: False Positives and Negatives for Metals Data Used in Quantitative Risk Assessment;* SETAC Conference, 2009
- *Is "Presumptive Certainty" Generating Usable Data for Risk Assessment Under the MCP?* AEHS International Conference, 2004
- *Does "Presumptive Certainty" Guarantee Usable Data?* SETAC Conference, 2004
- *Evaluation of Data Quality for MCP Submittals;* MassDEP LSP Training, 2004
- *Quality Solutions to Meet Both Human Health and Ecological Risk Assessment Data Needs;* SETAC North America, 2002
- *Quality of Environmental Measurements;* MassDEP LSP Training, 2001
- *Practical Aspects of Data Quality for Ecological Risk Assessment;* SETAC Conference, 2001
- *Freeze-Drying of Sediments to Achieve Risk-Based Detection Levels for Polyaromatic Hydrocarbons (PAHs) and Metals;* AEHS International Conference, 2000
- *Effective Tools for Explaining Environmental Chemistry;* Boston Bar Association, 2000

Data Validation and Usability Assessment

Ms. Chapnick has performed data validation and data usability assessments for thousands of environmental samples in a variety of media including waters, soils, sediments, sludges, and biological tissues. In addition to the standard Inorganic analytical techniques, Ms. Chapnick's expertise in data review extends to specialty analyses including speciation of Metals to evaluate risk-relevant species such as arsenic (As) / As^{+3} / As^{+5}; mercury (Hg) / Hg^{0} / methyl mercury; and chromium (Cr) / Cr^{+3} / Cr^{+6}.

Analytical Laboratory Audits

As a former Laboratory Inorganic Director of **Enseco-Erco Laboratory, Cambridge, MA**, Ms. Chapnick has in-depth knowledge of environmental analytical laboratory operations for Metals and Wet Chemistry techniques. Ms. Chapnick has also performed numerous laboratory audits in support of the NOAA-NRDA for the Deep Water Horizon Oil Spill, for USEPA Region 1 subcontract work, and for various US Army Corps projects.

Alliance with Regulatory Agencies: Ms. Chapnick has worked cooperatively with regulatory agencies to develop QA/QC procedures for environmental measurements and to promote science-based policy. Select examples of relevant work projects in this experience area include the following:

- **2009-Present: MassDEP – Bureau of Waste Site Cleanup Advisory Board, Boston, MA**. *Generation and Review of State Guidance / Training.* Assisting in development and review of state policy and guidance for environmental analyses in support of site remediation under the Massachusetts Contingency Plan (MCP). Developed and reviewed QA/QC, analytical method protocols, and Data Usability Assessment and Representativeness guidance for MassDEP. Performed training on use of new guidance to MassDEP scientists and License Site Professionals (LSPs). NEH is an approved vendor/trainer under MassDEP's Training Services and Materials Contract #EQE-900-010.

- **2006-2007: MassDEP Data Audit Project:** Ms. Chapnick performed in-depth reviews of analytical data packages for Metals analyses from laboratories selected by MassDEP as part of a Data Audit project to ensure compliance with the methods and CAM. Ms. Chapnick assisted in the generation of the final report to MassDEP summarizing the results of the data audits and recommendations for improvement.

- **2014-Present: Conservation Commissioner – Town of Arlington, MA**. As a Conservation Commissioner, Ms. Chapnick works to protect the resource areas in the Town of Arlington, in accordance with the state Wetlands Protection Act and the stricter town Bylaws and regulations. Ms. Chapnick's expertise in evaluating chemical contamination was instrumental in helping the Commission's oversight of the cleanup of an oil spill on the Mystic River that impacted the river, banks, and roadway. During cleanup and assessment activities, she actively participated in site inspections with MassDEP, reviewed environmental reports, and approved the final cleanup. Ms. Chapnick co-authored a Natural Resource Defense (NRD) grant, which was awarded by MassDEP to the town to create a native riverbank (riparian) habitat and improve storm water quality at a broken concrete outfall located along the stretch of the Mystic River that was directly impacted by the spill.