ID = 3

Title:	Quality Requirements for Extramural Agreements
Presenter(s):	Kevin Bolger QA Manager USEPA Region 5 (Session chair/presenter), Amberina Khan QA Expert, USEPA Region 5, Larisa Leonova, USEPA Region 5, Louis Blume, QA Manager, USEPA Great Lakes National Program
Key Message(s):	- Managing Quality Requirements in extramural agreements - Ensuring environmental operations from theses agreements produce data of defensible quality - Flexibility on implementation of quality requirements in extramural agreements

Abstract:	This session will provide an overview of USEPA quality requirements for extramural agreements which involve environmental data operations.
	
	The presentations will discuss:
	
	o Laws, regulations and guidance which describe the quality requirements for extramural agreements
	
	o Types of extramural agreements
	   ■ acquisition agreements
	   ■ assistance agreements
	
	o Pre-award and post-award assessment of the implementation of the quality requirements
	
	o Extramural agreement life cycles
	
	o USEPA program perspectives on managing extramural agreements
	
	o Flexibility on implementation of quality requirements in extramural agreements

ID = 5

Title:	What Is It? Why Use It? And What's in It for Me?
Presenter(s):	Jill Lundell, Berta Oates, and Debbie LaCroix, Portage, Inc.
Key Message(s):	• Discuss why a proper DQA is necessary to complete the data life cycle • Present several completed DQAs to demonstrate how a thorough DQA gleans important information present in the data that may be missed with quick summary statistics (UCLs). This information may lead to cost-savings and/or more effective clean-up plans.
Abstract:	Data quality assessment (DQA) is the final step of the data life cycle. This cycle consists of planning, implementation, and assessment. Although the planning and implementation steps are of high importance, the last step, the DQA, is of equal importance. The DQA is frequently overlooked, and is the topic of discussion in this presentation. When a DQA is performed properly, then the data attributes can uncover important characteristics at the site that are likely to be missed with a "quick and dirty" number summary. Such characteristics may include hot spots and trends in contamination. During assessment, data are validated using documented quality procedures and sampling and collection activities are compared to applicable Quality Assurance Project Plan and/or Sampling Plan specifications. The DQA carefully examines the data obtained from sample collection activities to determine if project objectives established during the data quality objective (DQO) process were met. Careful evaluation and appropriate statistical analysis of data ensure that suitable actions will be taken based on the data collected. This presentation will examine a completed DQA to reveal its components and highlight the importance of careful evaluation and appropriate analysis of data. The examination of rejected data for statistical analysis will be discussed and real-world examples will be presented to emphasize the need for completing a thorough DQA.

ID = 9

Title:	Oversight of Grants QA – Some Gaps Need Filling
Presenter(s):	Marcus E. Kantz, USEPA Region 2
Key Message(s):	- Region 2 Audit of Water Grants reveals QA weaknesses - QA for P2 Grant "Effectiveness Assessment" is inadequate - Wake-up call concerning QA for all effectiveness assessments
Abstract:	In USEPA Region 2, we performed an Internal Audit of the management of water program grants to find out whether the grants that involved the generation and/or use of environmental data had either approved Quality Management Plans (QMPs) or Quality Assurance Project Plans (QAPPs), as appropriate. For those that didn't, we then aimed to figure out why and what to do about it. Of the 202 grants in four water program branches, 149 involved the collection and/or use of environmental data. For 47 of those grants, the Project Officers (POs) had not ensured that an appropriate QMP or QAPP had been approved. In other words, approximately one-third of the grants that sponsored environmental work occurred outside the watchful eye of the QA System. We determined that 4 recurring issues were largely responsible for the improper application of QA: uncertainty about the need to apply QA to pollution prevention (P2) grants that utilize data only for determining the grants' environmental effectiveness; uncertainty about QA for multi-project grants; uncertainty about QA for "repeating" grants; and inadequate follow-up once it's clear that a QAPP is needed. It is important to note that the failure to apply QA for environmental effectiveness assessments in P2 grants may have far reaching implications beyond P2 grants. In the future, USEPA will likely be required to demonstrate the environmental effectiveness of a broad range of its programs and projects, including grants, contracts, and in-house work. These effectiveness assessments will require new QA oversight. Through this presentation we hope demonstrate this audit finding as an Agency-wide wakeup call for the need to apply QA oversight via the graded approach to any program or project that attempts to demonstrate its environmental effectiveness, especially if that is the only part of the program/project that involves environmental data.

ID = 10

Title:	Modeling Cryptosporidium Recovery
Presenter(s):	Michael J. Messner, USEPA Office of Water, Office of Ground Water and Drinking Water
Key Message(s):	• Method 1622/1623 recovery varies both within and between laboratories • In some spiked samples, none of the oocysts are counted, but this isn't well-modeled by simple logistic- or beta-distributed recoveries • A hierarchical logistic model with allowance for exactly zero recovery is used to explain both how non-zero recoveries and zero-recoveries vary within and between laboratories
Abstract:	USEPA's Long-Term 2 Enhanced Surface Water Treatment Rule (LT2) requires drinking water utilities to monitor their source waters for Cryptosporidium. Monthly samples of source water are tested using USEPA Method 1622 or 1623. These methods are known to recover, on average, about 40% of Cryptosporidium oocysts that are present. Oocysts not observed and therefore not counted may be lost at each step of the measurement process. Recently, USEPA has obtained data from utilities monitoring under the LT2 Rule. Nearly 50 laboratories generated measurement data, including results from analyses of matrix-spiked samples. A hierarchical model is developed to describe (a) how the "true" numbers of spiked oocysts vary from sample-to-sample, (b) how laboratory-specific median recoveries vary across labs, and (c) how recovery varies from sample-to-sample within laboratories. Bayesian Markov Chain Monte Carlo sampling is used to estimate model parameters. A striking feature of the data is the number of matrix spiked samples for which no oocysts are identified. These zero-recovery samples appear more often than predicted by the model, which suggests that something other than a simple "low and variable" recovery is at play. Occasionally, something seems to happen to cause none of the numerous spiked oocysts to be observed. When each laboratory is allowed to have its own probability of zero recovery as a special case, the model fit improved significantly. Different laboratories appear to have significantly different probabilities of zero recovery, and different distributions of recovery, when not zero. This model and what we've learned about recovery have implications for how one might "adjust for recovery" to better understand Cryptosporidium occurrence in source water. The model may also help us understand the value of more precise enumeration of spiked oocysts and the added value of improved precision of the measurement method

ID = 15

Title:	Elevated Blood Lead Levels: Statistical Analysis meets Social Phenomena
Presenter(s):	Ronnie Levin, USEPA Region 1, and Barry D. Nussbaum, USEPA Office of Environmental Information, Office of Information Analysis and Access
Key Message(s):	• Real world problems rarely come with neatly packaged data or even data-needs • Different stages of a problem may require different kinds of data. • Methods for merging statistical and non-statistical data may be problem-specific.
Abstract:	Reducing US children's blood lead levels is likely the major environmental public health achievement of the last three decades. In fact, with the marked decline in lead levels, current national random surveys rarely identify children with elevated blood lead levels. Nonetheless, there are almost 400,000 US children under the age of six who have elevated lead exposure. The National Health and Nutrition Evaluation Surveys (NHANES) have identified a score of risk factors for elevated blood lead levels. However, because children with unusually high lead exposures are statistically outliers, central tendency data are often inadequate to find them or to characterize their risk factors. Since these children don't feel like outliers, alternative methods must be employed to direct efforts to locate and treat these children. Identifying children with dangerously high blood lead levels is moving from an analysis of statistical data to one investigating cultural practices, past nutritional status, consumption of ethnic foods and remedies, and site-specific factors, such as local industry. Developing plausible analytical methodologies to incorporate these 'anecdotal' or 'social' data into targeting efforts for lead poisoning reduction is our current challenge.

ID = 17

Title:	ORD's Scientific Data Management (SDM) Strategy: First Steps
Presenter(s):	Lynne Petterson, USEPA Office of Research and Development, Office of Science Information Management
Key Message(s):	• Progess is occurring on the SDM Strategy's top priority goals.
Abstract:	The purpose of this presentation is to summarize initial efforts in implementing ORD's Scientific Data Management (SDM) Strategy. The efforts include: Development of a 'thin' or high-level taxonomy and its testing through paper prototypes in specific use cases; Identification of value-added tool(s) and processes to assist researchers in managing their scientific spreadsheets, and; Development and provision of scientific Records Management training. The three areas were identified as high priority tasks by the Near Term Implementation Team for ORD's SDM Strategy in 2007. The Near Term Implementation team consisted of ORD researchers at the Branch Chief level and above.

ID = 20

Title:	A New Vision for Data Integrity
Presenter(s):	Charlie Appleby, USEPA Region 4
Key Message(s):	- quality system elements that are necessary to ensure data integrity - the flaws in a quality system that allow unethical practices - the vision of an organizational culture with a strict ethical code must be shared by managers and scientists
Abstract:	For several years, an increase in the level of scrutiny of data quality has required us to take a fresh look at how we ensure the integrity of the data and information we generate. We are all familiar with the phrase, "data of known and documented quality," but ensuring data integrity goes well beyond the implementation of a rigorous quality system with documentation, QC measures, SOPs with corrective action decision matrices and similar requirements. This session will include presentations on the specific quality system elements that are necessary to ensure data integrity and an auditor's experience with detecting the signs of unethical practices and ferreting out the flaws in a quality system that allow such practices. The session will conclude with a presentation and panel discussion of the vision that must be shared by managers and scientists. This vision must include an organizational culture with a strict ethical code that is conducive to generating products and services with integrity, and the responsibility that should be placed on new managers to carry the vision, managing change as well as expectations for quality and integrity. The path to improved data integrity naturally also leads to ensuring sound science, and as in any business environment, performance at a high level of quality and reliability is the surest way to ensure growth.

ID=21

Title:	QA Principles and Practices in the Everglades REMAP Project
Presenter(s):	Charlie Appleby, USEPA Region 4
Key Message(s):	- Data Quality must be part of project planning and execution. - The quality system for Everglades REMAP Phase III is presented. - For this $1.6 million project, the 6% investment in QA planning paid off.
Abstract:	USEPA Region 4 occasionally performs environmental monitoring/assessment studies such as the Everglades Regional Environmental Monitoring and Assessment Program (REMAP). In-situ data were documented in the field, and eight analytical labs were contracted to perform sixty unique analyses for nutrients, anions, mercury, and physical parameters on samples of seven different matrices collected at over 250 Everglades sampling stations. Data quality in any survey study, but especially in one this size, must be part of project planning and execution from start to finish. The development and implementation of the quality system for Everglades REMAP Phase III are presented. One goal of this study was to produce data of known and documented quality that met pre-defined project goals and data quality objectives. For this $1.6 million project, the investment in quality assurance exceeded $100,000. Out of approximately 25,000 data points generated for this study, less than 0.01% were rejected as unusable.

Title:	Stratified Sampling Design & Field XRF to Reduce the 95% UCL for Residential Soil Lead
Presenter(s):	Deana M. Crumbling, USEPA Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation
Key Message(s):	• Adaptive sampling & analysis using field analytics • Using the CSM & stratified sampling to weight subpopulation sizes when calculating the UCL • This strategy is valuable for confident exposure point concentrations
Abstract:	Residential yards along a heavily traveled town street were evaluated for soil lead (Pb) concentrations. Historic atmospheric deposition from a nearby Pb battery smelting operation was the main source of Pb to the town. Prior sampling and ICP analysis nearly 10 years ago in these yards had yielded mixed and sometimes contradictory results. Although these properties were outside the expected zone of influence by air deposition, historical soil sampling in this area had anomalously high concentrations. In 2007, a field-portable x-ray fluorescence analyzer (FP-XRF) and a specialized sampling design were used to resolve questions raised by the earlier data. Systematic planning defined three study questions: 1. Is the average soil Pb concentration over a single property (defined as the exposure unit) greater than the project-specific limit of 500 ppm? 2. Can contamination of these particular properties be attributed to truck activity to and from the smelter via this main thoroughfare? 3. Can the spatial patterns of Pb distribution indicate the source. In addition to smelter truck traffic, three more potential sources of Pb to the yards were postulated: a) general road traffic from the era of leaded gasoline, b) lead paint from these older houses, and c) air-deposited Pb from the smelter. A dynamic sampling and analysis design was constructed to answer these questions in a single field effort. The design had to control for the effects of micro-scale and short-scale matrix heterogeneity, and reduce statistical uncertainty at the 500 ppm decision level to allow 95% statistical confidence when deciding compliance. Sampling density had to be high enough to detect any spatial patterning in lead concentrations that could suggest the lead release mechanism. This case study presentation focuses on one yard to explain how the triple combination of 1) an adaptive strategy to manage data variability, 2) progressive CSM maturation over the course of field work, and 3) a stratified sampling & data analysis design allowed statistical uncertainty (as reflected by the distance between the calculated mean and the 95% UCL) to be progressively reduced from 44% to 16% so that a highly confident decision could be made that the property/exposure unit was compliant with the 500 ppm action level.

ID = 23

Title:	Greening Quality Assurance: How to Use QA to Reduce Our Ecological Footprint
Presenter(s):	Eugenia McNaughton, Manager, Quality Assurance Office, USEPA Region 9
Key Message(s):	• QA System and Environmental Management Systems are fraternal twins • Green elements lurk in our basis work of technical support and planning document review • Selling ecological awareness to others starts at your own desk
Abstract:	A Quality System (QS) and an Environmental Management System (EMS) have similar objectives: to achieve program objectives in the most efficient and appropriate way. People organized in various ways, be it in social, business, industry or government contexts, are reluctant to change their practices until an obvious benefit to doing so can be demonstrated. But both QS and EMS have slowly been gaining ground as the word about the value they add to the planning and oversight processes spreads. The systems help to reduce waste and costs by focusing on the project or process objectives and applying a certain set of principles in their review. However, the question remains: have Quality System practitioners identified the aspects of their work for example, suggesting ways to reduce a contaminant source or to streamline a review or remdiation process, where envrionmental benefits can be demonstrated? Where the data quality objectives do not match the question being asked, a QA review will refocus the effort, thereby saving money and time for the project. A QA laboratory method review may recommend the use of less hazardous testing materials or chemicals, using smaller amounts of a chemical reagent, including water, or using a comparable method that avoids the use of the reagent altogether. Is there a way to evaluate a Quality System to determine whether and to what extent these "green principles" play a role in our interactions with clients? And where we find we are not consciously or fully assuming these principles in our work, do we QA workers need some "consicousness raising" about the issue, starting with how we use our workplace resources?

ID = 25

Title:	Reporting Limit Verification Sample
Presenter(s):	Robert P. Di Rienzo ALS Laboratory Group (formerly) DataChem Laboratories, Inc. 960 West LeVoy Drive Salt Lake City, UT 84123 dirienzo@datachem.com (801) 266-7700
Key Message(s):	The use of Reporting Limit Verification Sample (RLVS) will • Improve the quality of data by estimating the uncertainty at the reporting limit • Verifies that reporting limits are accurate • Used to calculate Limits of Detection (LOD/MDL)
Abstract:	This presentation will discuss the use of a RLVS as a batch quality control element. Data will be presented to establish the use of RLVS to assess bias and precision at the reporting limit, to calculate control limits at the reporting limits and to estimate the uncertainty at the reporting limit. A new procedure for using this data to calculate limits of detection will also be presented.

ID = 26

Title:	The Development and Implementation of a Virtually Paperless Lab – Advantages and Disadvantages for a Core Faciltiy
Presenter(s):	Debora Andrews, USEPA Office of Research and Development, National Health and Environmental Effects Laboratory
Key Message(s):	• Making the switch from paper to electronic records • Using Agency standard software to accomplish the changeover • Making e-records as defensible as paper records
Abstract:	In the ever-increasing climate of being environmentally friendly and doing more with less, going paperless in the laboratory seems to be the wave of the future. However, are we truly prepared to go paperless? Can we find ways to ensure our records are indeed as defensible as their paper cousins? What measures do we need to take in order to insure the appropriate controls and long term storage of our current electronic records? This presentation focuses on an ELISA (enzyme linked immunosorbent assay) Core Facility, based in USEPA's National Health and Environmental Effects Laboratory, in Research Triangle Park, North Carolina. The history of the core and its move to e-records will be discussed, along with the advantages and problems noted along the way. Advantages we have noted have been not only the reduction of paper used, but also the ease of record transfer, locating records if misplaced by the end user, and reduction in storage space. Disadvantages noted were lag time in having everyone switch over to e-records, lack of a traditional paper trail caused a few problems, and lack of electronic signatures, or ability to lock the data. Solutions that were implemented will be discussed, most notably, how to use existing Agency standard software to work towards traceability and accountability in the arena of e-records. *This is an abstract for presentation which has been reviewed by the USEPA; views expressed do not necessarily represent USEPA policy.*

ID = 27

Title:	USEPA Office Product Quality – Mapping Products/Services Quality Features and associated Information Policies into an interactive system to ensure implementation of the organization's quality system
Presenter(s):	Kevin Hull & Michele Wolf; Neptune & Company Lorena Cedeno-Zambrano, USEPA Office of Environmental Information, Office of Planning, Resources, and Outreach
Key Message(s):	• Products & services identification • Products & services quality features • Implementing policies in products & services • Improving eQMPs
Abstract:	The USEPA Quality Policy, CIO 2106.0, approved October 20, 2008 provides a structure to ensure effective application of the Agency quality program to Agency products and services. Agency quality managers may use the new policy to strengthen their Office/Region quality management plans (QMPs) and better align application of quality principles to USEPA business lines within their Office/Region. To better inform the USEPA Office of Environmental Information's (OEI) improvement planning process, we conducted an office-wide review to better identify OEI's products and services and the associated major quality features. OEI then mapped potential information policies and procedures that may be applicable to each product and service into a proposed interactive module for an updated electronic QMP (eQMP). This presentation reviews the OEI process for mapping products, services, and quality features into a quality matrix. The draft interactive module will demonstrate how it acts as a tool to identify applicable information policies for products and services. The process, matrix, and proposed module may be resources for others who want to conduct a similar analysis and develop similar tools.

ID = 30

Title:	Role of an NHEERL QA Manager in Achieving Quality Performance Objectives − Changes from 1999 to 2008
Presenter(s):	Thomas Hughes, USEPA, Office of Research and Development, National Health and Environmental Effects Laboratory
Key Message(s):	• QA Manager Duties • Multilaboratory Studies • Project QA Manager (PQAM) duties
Abstract:	My career as a USEPA Quality Assurance Manager (QAM) started on September 26, 1999 when I was appointed the QA and Records Manager for the Experimental Toxicology Division (ETD) in NHEERL, in the Office of Research and Development (ORD), on the Research Triangle Campus in RTP, NC. I was responsible for the training and QA and records oversight of approximately 100 scientists, which included USEPA researchers, PostDocs and technical senior environmental grantees (SEEs). These scientists had 25 active research projects and 300 operating procedures (OPs) in place. In 1999, each of the principal investigators (PIs) in the division had one-three laboratory scientists conducting research. In 2008, ETD has 65 active research projects and 520 OPs. Many of these projects are multilab and multiagency projects. Twenty of these projects are QA Category 1 and 2 studies which require intensive QA oversight and audits. The positive support my division director, Dr. Linda Birnbaum, along with the cooperation and assistance from the NHEERL Director of QA, Brenda Culpepper; have allowed me to build a very strong QA and records program in ETD. The organization of the ETD QA Core Team, annual QA and records seminars, annual PI surveillances and monthly newsletter articles on QA and records issues have been the tools that were used to build a defensible and accurate research database in ETD. The scope and the depth of the QA and records program in ETD have grown exponentially in the last nine years, especially for electronic records. Over the past five years, research dollars in ETD have decreased significantly, but QA requirements (ORD PPM 13.2 and 13.4) and oversight also have increased significantly. Less money at the USEPA has caused projects to increase in size and in numbers of participants (synergy), both within and outside the Agency. The responsibilities for the QAM have increased, especially for multilab and multiagency projects (i.e., Project QAM [PQAM] duties). The evolution of my QAM duties and responsibilities from core, enhanced to comprehensive duties over the last nine years will be discussed. The days of the one PI with their one-two intramural research projects are vanishing! *This is an abstract for presentation which has been reviewed by the USEPA; views expressed do not necessarily represent USEPA policy.*

ID = 31

Title:	Value-Added Verification: Building relationships and organizational knowledge through Verification and Validation of management practices.
Presenter(s):	Margo Rice
Key Message(s):	• Explore quality assurance approaches for Value-Added Auditing, Independent Verification and Validation and Peer Review • Identify approaches that improve the impact and effectiveness of evaluation findings • Identify approaches for collecting and disseminating records of findings, issues and issue resolution strategies to build organizational knowledge and speed resolution
Abstract:	This presentation will explore current quality assurance techniques which can be used in concert with Program Management activities or on a per Project basis to ensure quality of product or project success in addition to supporting the development of organizational knowledge, information-sharing and skills development. Each quality assurance approach represents a pairing of traditional methodology considerations for empirical definition of process or product requirements with considerations for presentation context, information collection and sharing. Specific techniques include "Value-Added Auditing" and tailored approaches for Independant Verification and Validation and Peer Review. The presentation will include casestudies from use on projects managed by Project Performance Corporation and work done in partnership with the Environmental Protection Agency.

ID = 32

Title:	A Quality Assurance Program Plan for the Risk Management Program: An Example Document Implementing the New Environmental Policy
Presenter(s):	David R. Taylor, Ph.D., C.Q.E, USEPA Region 9
Key Message(s):	• The new Environmental Policy will affect programs which currently have not documented their Quality Systems. • The Risk Management Program, an inspection based program that does not collect traditional environmental measurements is an example of such a program. • An example of a QA Plan to describe the RMP Quality System has been prepared.
Abstract:	The recently approved Environmental Policy has implications for programs within USEPA that do not collect what have been traditionally considered to be "environmental measurements." One such program is the Risk Management Program whose purpose is to ensure that companies or organizations storing, transporting, or using hazardous waste prepare and implement Risk Management Plans. USEPA Regions as well as its state, tribal and local organizations perform inspections of these facilities to ensure that these plans are current and that they are being implemented in a way that ensures the safety of surrounding communities. These inspections evaluate a variety of practices and policies, but no samples are collected or analyzed. Although the new Environmental Policy requires that a QA Plan be prepared, the current USEPA QA guidance documents are not easily adapted to this type of program. This talk will discuss how a QA Plan was structured to describe this program's Quality System, and possible implications for other similar programs.

ID = 35

Title:	Framework for Providing Quality Assurance Guidance for Computer-Based Software Models used in Research Projects and Regulatory Support Activities
Presenter(s):	Eric S. Hall – USEPA Office of Research and Development, National Exposure Research Laboratory
Key Message(s):	• USEPA depends on computer-based software models in its work • Software Models developed for USEPA need quality standards • National Exposure Research Laboratory developed quality standards for software models
Abstract:	**Abstract:** The US Environmental Protection Agency (USEPA) relies on computer-based software models to provide information on the effects of pollutants in the environment and on human health. Some of the software models used by EPA are developed outside of the agency and are obtained through contracts, cooperative agreements, interagency agreements (IA), and grants. The elements of quality are well-understood when applied to situations, such as determining if the detection limit of a piece of equipment is sufficient to measure the amount of a substance in the environment. When defining the elements required to determine quality for software models, guidance such as EPA QA/G-5M is limited because its focus is on developing quality assurance project plans (QAPPs). The QA/G-5M describes how to plan for and document quality-related processes associated with software models, but it does not contain a step-by-step description of the key QA elements that should be included when developing a software model and its associated documentation. Most individuals are not experts in software engineering and are not experienced in developing quality assurance guidance for software models. The contracting officer technical representatives (COTRs – also known as CORs, WAMs, WACORs, DOPOs, TOPOs, or project officers) are the people who manage the technical details of a project where model software is developed. The COTR generates the contract scope of work (SOW), work assignment/task order/delivery order, grant, cooperative agreement, or IAG for a project. The SOW is where quality requirements for software models must be inserted. Software models are a critical component of EPA's scientific research and regulatory support activities; therefore we need a standard (and flexible) framework to provide guidance on how to implement quality assurance for software models. A good software QA methodology help EPA to obtain models that are **c**onsistent in their operation, **r**eliable, **e**asy to use, **d**ocumented, **i**mplement the requirements, and **t**ransparent (CREDIT). There are three elements that must be analyzed to determine if a model meets minimum quality standards: 1) model code listings; 2) behavior/response of 'model executables' (operational model software), and; 3) model documentation (e.g., user manual/operations manual, design document, test manual, etc.). EPA's quality assurance staff needs guidance to advise COTRs in how to assess the quality of a software model. The quality staff requires specific details on how to apply and implement a quality regime for software models so that they can assist COTRs in their project responsibilities. This presentation provides an easy to understand QA methodology for software models that can be applied to a wide variety of projects.

ID = 36

Title:	Leading Change: Elevating Environmental Field Sampling and Measurement Activities to a Higher Level of Quality
Presenter(s):	Kenna Yarbrough, USEPA Office of Enforcement and Compliance Assurance, Office of Criminal Enforcement, Forensics, and Training

Key Message(s):	• Advancing environmental field programs to a higher level of sound science and data defensibility through a 3rd party accreditation of field sampling and measurement activities using ISO 17025 standards. These standards are traditionally applied to laboratory measurement activities.
	• New concepts for environmental field programs, such as:
	   o how to develop and implement a field measurements and sampling proficiency testing (PT) program and
	   o evaluating and reporting measurement uncertainty for field measurements (e.g., field pH, toxic vapor analyzer (TVA) measurements, etc.)
	• Other options for improving field environmental programs through adoption of best quality management practices available or conformance to additional standards

Abstract:	Since 2001, USEPA's National Enforcement Investigations Center (NEIC) has been accredited through the ISO 17025 standard, a standard that is designed to recognize the competence of testing laboratories. Uniquely, NEIC applied this traditional laboratory-based standard to all its environmental field measurements and sampling activities. This innovative adaptation and the unconventional field activities accreditation has resulted in a higher level of sound science and has enhanced the defensibility and documentation of field-generated data. The presentation will discuss two concepts that are not traditionally applied to field measurements and sampling. Actively implemented at the NEIC, these concepts are a robust proficiency testing program for all field staff and the evaluation and reporting of measurement uncertainty information/data for environmental field measurements. Other options for improving field sampling and measurement quality will be discussed. These options do not require a rigorous 3rd party ISO accreditation for the environmental field program. Examples to be presented include the adoption/conformance to The NELAC Institute (TNI) field measurement and sampling organization draft standards and USEPA's Regional Science & Technology (RS&T) Director's Field Operations Group (FOG) field measurement and sampling consensus standards. There are five FOG consensus standards that involve the following quality related subjects: evidence management; equipment/instrument inventory, calibration and maintenance; personnel training and records of training; document control; and records management. The presentation will provide examples of the many options available to environmental field offices to continually improve the quality of work and data provided to their customers.

ID = 38

Title:	Visualization Tools Change the Whole Game on Locational Quality
Presenter(s):	Pat Garvey, USEPA Office of Environmental Information, Office of Information Collection
Key Message(s):	Key Messages • Metadata Documentation is not the Answer any longer • Visualization Tools especially Web Mapping requires higher Quality than ever before • Many Eyes on the data requires many feedback avenues: Web 2.0 offers possible solutions
Abstract:	A presentation of web mapping tool from Google Earth and Microsoft Virtual Earth would be showcased on how these tools are changing the way USEPA looks at, documents, and improves the quality of locational data. Tools to improve locational accuracy will be showcased and ways for the users and public to improve the data will be highlighted. The USEPA's Facility Registry System will be used as the example of the problem, and the solution and the means for greater involvement in better accuracy of locational data at USEPA.

ID = 39

Title:	A Brief Discussion of Three Important Quality Management Concepts
Presenter(s):	Julia K. Caprio Geosyntec Consultants Knoxville Tennessee
Key Message(s):	• Defining Quality so that personnel take ownership • Discussing the importance of leadership in quality management • Discussing why quality requires management
Abstract:	Quality Management also referred to as Total Quality Management, is the organization wide management of quality. Management consists of planning, organizing, directing, control, and assurance. This presentation will discuss the importance of defining quality within an organization in an effective manner such that all personnel understand the benefits and empowerment of working within a quality oriented system. Secondly this presentation will discuss the importance of leadership including descriptions of effective leaders and their key role in developing a culture of quality within an organization. The last concept that will be discussed during this presentation is what the role of a quality manager is within an organization. The quality manager's role has evolved from "policing" personnel activities to training and guiding personnel with regard to quality integration into their work practices. All of these concepts will be described from the point of view of implementation within a service oriented environmental consulting company.

ID = 40

Title:	ERLN Operational Framework
Presenter(s):	Terry Smith and Schatzi Fitz-James, Office of Solid Waste and Emergency Reponse, Office of Emergency Management Sean Kolb, Computer Sciences Corporation
Key Message(s):	• Purpose of the ERLN • Discussion of the Quality System, Sample Management System, and Analytical Services System • Data reporting requirements for the ERLN
Abstract:	EPA's Environmental Response Laboratory Network (ERLN) is one of five laboratory response networks under the Federal Integrated Consortium of Laboratory Networks (ICLN). The ICLN's mission is to coordinate federal response networks to provide timely, high quality and interpretable results for early detection and effective consequence management of acts of terrorism and other events requiring an integrated laboratory response. The mission of the ERLN is to provide known laboratory capabilities, capacities, and quality data in a scalable, systematic, and coordinated response to environmental emergencies providing preparedness, response, remediation and recovery analytical support. ERLN laboratories will include federal, state, local and commercial laboratories capable of analyzing environmental sample matrices contaminated by toxic industrial chemicals (TICs), chemical warfare agents (CWAs), biological agents, and radiochemical agents as a result of acts of terrorism or an environmental emergency. The ERLN is faced with many unique challenges. It must be able to provide analytical capabilities for a wide variety of environmental matrices. It must be able to provide these analytical capabilities to support a wide variety of capacity needs including an individual short term response involving a few dozen samples to multiple long term responses that require the analyses of tens of thousands of samples. It must be able to provide these analytical capabilities to support a wide variety of data needs including determining: (a) priorities for response based on risks to human health and the environment, (b) the nature and extent of contamination from the release of a hazardous material, (c) appropriate cleanup goals and/or level, and (d) whether or not contaminated areas can be returned to their intended use. This paper discusses the operational framework EPA has established that enables it to reliably access ERLN laboratory assets on an as-needed basis with sufficient capacity and analytical capability to meet project-specific data quality objectives. The key components of the ERLN's operational framework include a comprehensive quality system based on industry-accepted standards, a stable sample management system designed to maintain the integrity of samples, and a data reporting requirement designed to provide consistent, reliable data of known and documented quality to its ERLN customers.

ID = 41

Title:	**Adapting a Quality Management System to Meet Changing Requirements**
Presenter(s):	Zachary Willenberg, Battelle Memorial Institute
Key Message(s):	• A Quality Management System (QMS) that is rigorous yet flexible enough to address different requirements and demands is essential, especially to ensure that the system provides sound science. • Taking the idea of a flexible QMS and showing case studies using an existing system. • Attendees will come away with specific applications that they can easily adapt to their own organizations' QMS.
Abstract:	A documented QMS is a necessity for most research facilities and is required by many funding organizations, including the U.S. Environmental Protection Agency (USEPA). However, different funding organizations, even within the Federal Government, have different quality requirements. For contract research organizations, whose work can be supported by diverse government and industry sources, a QMS that is rigorous yet flexible enough to address different requirements and demands is essential, especially to ensure that the system provides sound science. This presentation will compare and contrast quality requirements from different organizations (e.g., USEPA, U.S. Navy, U.S. Army Corps of Engineers, and Industrial Trade Organizations), and discuss how those requirements are addressed in a flexible QMS that is able to meet the varying demands of all these organizations. This presentation is based on case studies describing such a QMS that has been in place for almost 10 years and that has been successfully used and adapted over time to meet changing demands. The example cases to be covered include a strategy on dealing with document-heavy ISO 17025 certification requirements, to allow an analytical group to be as efficient as possible and prevent the certification requirements from becoming burdensome on affected staff. To address this situation, the QMS has been designed to "compartmentalize" certain research groups and hold only those groups to varying degrees of quality requirements. This practice allowed two research labs to meet requirements of ISO 17025 for gas analyses and New Jersey Certification for dioxin/furan and PCB analyses, without the entire organizational group being subject to such high levels of quality assurance. Another example case involved the successful application of project- or program-specific quality management plan addenda. If a program or project has specific quality management requirements, but those requirements are not sufficient to warrant a new program-specific Quality Management Plan (QMP), then the development of an addendum is used to expand certain sections of the overall QMS QMP to meet those requirements. For example, this practice was used in an ongoing USEPA program, for which additional requirements for documentation handling and storage procedures were needed, but the rest of the quality system was acceptable. Based on these and other case studies, attendees will come away with specific applications that they can easily adapt to their own organizations' QMS and that will enhance and develop their quality systems to ensure that results delivered to their clients are based in sound science.

ID = 45

Title:	**Environmental Response Laboratory Network** Data Management Strategies
Presenter(s):	Schatzi Fitz-James and Terry Smith, USEPA Office of Solid Waste and Emergency Response, Office of Emergency Management Sean Kolb and Lisa Modigliani, Computer Sciences Corporation
Key Message(s):	• Data Management Strategies • External/Internal Quality Systems • Data Flow, Data Management, Data Exchange
Abstract:	The Environmental Response Laboratory Network's (ERLN's) quality system's flexibility enables it to address various analytical services while maintaining the integrity of the data used to make major decisions regarding public health and environmental welfare. The ERLN's quality system is designed to: - Assess data quality from the response phase (e.g., field activities) to the laboratory; - Detect problems through data assessment and establish corrective action procedures that keep the process reliable; - Document all aspects of the measurement process to improve inter-laboratory data comparison; and - To provide data that are technically sound and legally defensible. To address the external framework (field activities) aspect of the quality system, USEPA Office of Emergency Management has charged the Data Management Workgroup with the task to develop a generic Quality Assurance Project Plan (QAPP) and a QAPP for Emergency Response to provide guidance in establishing, implementing, and using QA and quality control (QC) protocols for data collection activities. This guidance will define the data quality within a framework that also incorporates the intended use of the data. ERLN laboratories will be responsible for establishing and maintaining a documented quality system, or internal framework, for planning, implementing, and assessing work performed and for carrying out required quality assurance and quality control activities necessary to ensure the integrity of the data they generate. A key feature of each laboratory's quality system is a set of standard operating procedures (SOPs) that facilitates consistency in the quality and integrity of data through the consistent implementation of processes or procedures within each ERLN laboratory. This paper discusses data management strategies for the data quality of the external and internal systems, which includes data flow, data management, and data exchange throughout each phase of an ERLN response. In addition, the data requirements and the tools necessary are identified to assure compliance with USEPA data standards. These requirements are designed to ensure consistent analytical data of known and documented quality across the ERLN.

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Title:	Air Force's Environmental Restoration Processes Optimization (ERP-O) Program
Presenter(s):	Joann Socash for Ed Brown, Air Force Center for Engineering and the Environment (AFCEE)
Key Message(s):	• Transforms environmental liabilities into operational assests through sound science • Corrects inadequate or poorly applied restoration practices • Embeds Quality Principles in Air Force's Performance-Based and Results Oriented concept
Abstract:	Environmental Restoration Processes Optimization (ERP-O) allows the Air Force Center for Engineering and the Environment (AFCEE) to apply quality practices to Air Force Environmental Restoration products and services, from concept to implenentaion. ERP-O is one component of the Air Force's Performance-Based Manangement (PBM) initiative developed by the AFCEE. The PBM framework consists of eight main strategy components connected by open, real time, communication that promotes trust among the restoration team members. PBM provides a set of tools that can be used either separately, as is increasingly common in current business practice, or simultaneously. Both approaches will benefit the project or program; however the most significant results are realized when the components are coordinated. The Air Force recognized that many of its cleanup actions were not performing as originally expected and develop the ERP-O program for optimizing performance. ERP-O encourages the application of performance metrics and sound science. ERP-O includes (1) preparing and using Conceptual Sites Models, (2) confirming adequacy of selected ARARs, (3) defining Risk based on future planned use of resources, (4) promoting use of decision logic, (5) establishing a clear and succinct exit strategy, (6) promoting use of performance-based contracts (PBC) when applicable, and (7) promoting implementation of Green and Sustainable remediation in the operation of remedial systems and monitoring programs. ERP-O recognizes that as a remediation progresses site conditions change and systems and procedures designed for the original site conditions may no longer be optimal. ERP-O may be implemented is several phases. All Air Force installations maintain an inventory of there remedial systems and the status of the cleanup effort. In Phase I, a team of experienced staff from various disciplines visits the installation to review all active projects and provide recommendation. Recommendations from Phase I may be implemented directly or moved to Phase II for a detailed engineering evaluation. Implementation of the recommendations is accomplished by the installation in Phase III. The focus of the ERP-O is to gain the maximum cleanup results and reduce overall long-term costs to the Air Force. In doing this remedial action is balanced with the long-term requirements for site monitoring.

ID = 49

Title:	Quality- A Contract Runs through It
Presenter(s):	Marion Kelly, USEPA Office of Water, Office of Science and Technology Lynn Walters, CSC
Key Message(s):	• An approved QAPP must be in place for all USEPA projects prior to any data gathering work or use. In most cases, USEPA projects involve the use of contractors and grantees. • USEPA's QAPP requirements need to be addressed in the contract or grant vehicle, both at the procurement (solicitation) and implementation stage. • There are multiple ways to accomplish this, with no one-size-fits-all solution. Various approaches are examined here.
Abstract:	USEPA Order CIO 2105.0 requires that Quality Assurance Project Plans (QAPPs), or equivalent documents, be approved for all applicable projects and tasks involving environmental data prior to any data gathering work or use, except under circumstances requiring immediate action to protect human health and the environment or operations conducted under police powers. Many USEPA projects that involve the collection or use of environmental data are supported by contractors. As a result, requirements for QAPPs, or equivalent documentation, need to be addressed in the contract prior to the contractor's collection or use of data under the project. These requirements are addressed during the contract procurement process (i.e., solicitation and award) and throughout contract implementation (i.e., when specific work assignments, task orders, or delivery orders are issued and approved under the contract). Although the process sounds straightforward, there is no "right" or "wrong" way to accomplish the requirement for having an approved QAPP in place prior to initiation of contractor work. Multiple approaches can be used, depending on the specific circumstances of the project and the contract. In this paper, we examine and suggest some "best management practices" for addressing this requirement.

ID = 51

Title:	Geostatistical Modeling as a Quality Management Tool to Address Uncertainty in Decision-making for Large Scale Sediment Assessment and Remediation Projects
Presenter(s):	Judith Schofield, CSC
Key Message(s):	• Sediment remediation projects involve challenging decisions in identifying areas of concern. • Geostatistical tools, developed in the mining industry, are being practically applied in environmental assessment and remediation. • These techniques can be utilized to describe the extent and nature of contamination, develop sampling designs, reduce uncertainty in decision making, and facilitate cost effective remedial investigations.
Abstract:	As part of sediment assessment and remediation projects, project planners are interested in describing the extent and nature of contamination throughout their project site, as well as identifying areas that exceed contaminant concentrations of concern and may therefore require remedial action. Project planners want to ensure that they are remediating all of the contaminated sediments; however, they also do not want to spend limited resources on remediating relatively clean sediments. Geostatistical models are facilitating these decisions while providing an understanding of the uncertainty associated with the decisions. In support of several sediment assessment and remediation projects being conducted by the US Environmental Protection Agency's Great Lakes National Program Office under the Great Lakes Legacy Act, geostatistical tools are being used to evaluate site conditions and develop remedial plans. Geostatistical models, including kriging models, were developed in support of remedial investigations and feasibility studies being conducted for the Buffalo River and portions of the Detroit River. Three-dimensional models of sediment contaminant concentrations were developed that provided estimated concentrations across the site for several contaminants, as well as the probability of exceeding specific thresholds of concern. Portions of the project site were shown to have high probabilities of exceeding the concentrations of concern for several contaminants and may be considered for remediation, whereas other portions have very low probabilities of exceeding and likely do not require remediation. The models highlighted areas of the site at which there was increased uncertainty in determining the need for remedial action. The models were then used to generate a design for additional sampling to reduce the uncertainty associated with these decisions. Geostatistical tools, developed in the mining industry, are being practically applied in environmental assessment and remediation. These techniques can be utilized to describe the extent and nature of contamination, develop sampling designs, reduce uncertainty in decision making, and facilitate cost effective remedial investigations.

ID = 52

Title:	Programmatic Synergy in Obtaining Cost Effective Data of Known and Documented Quality
Presenter(s):	Louis Blume, USEPA Great Lakes National Program Office
Key Message(s):	• The US Environmental Protection Agency's (USEPA) Great Lakes National Program Office has worked closely with USEPA's offices and States in the successful implementation of the Great Lakes Legacy Act of 2002. • The presentations in this session will discuss aspects of the data management collaboration in support of the Great Lakes Legacy Act among USEPA programs and State agencies
Abstract:	The US Environmental Protection Agency's (USEPA) Great Lakes National Program Office has worked closely with USEPA's Office of Superfund, Office of Water, Regions 2 and 5, the States of New York, Michigan, Wisconsin, Indiana, Minnesota and Ohio, as well as numerous non-federal sponsors over the past five years, in the successful implementation of the sediment remediation program under the Great Lakes Legacy Act of 2002. The Act was recently reauthorized on September 15, 2008 as the Great Lakes Legacy Reauthorization Act of 2008 and appropriates annual expenditures of $50 million per year. The Legacy program's quality management policy mandates use of existing tools and expertise, where feasible, for sample collection, analysis, and data management and reporting. This policy provides a challenge, as well as an opportunity, for several USEPA programs and States to coordinate efforts for managing data. The presentations in this session will discuss aspects of the data management collaboration in support of the Great Lakes Legacy Act among USEPA programs and State agencies including: 1) the utilization of Superfund's contract laboratory program (CLP) for cost-effective sample analyses. Sample analysis costs will be compared for several approaches including through nationally competed contracts and through remedial contractors and subcontracts; 2) the utilization of the Staged Electronic Data Deliverable (SEDD) as a multi-stage standard for analytical data reporting. The standard facilitates sample specific quality control data reporting that provides transparency and reproducibility. This standard, combined with the use of Electronic data eXchange and Evaluation System (EXES), streamlines data verification and provides electronically verified data in customized electronic reports within 24-48 hours of data receipt from the laboratory; 3) the challenges of utilizing these standardized approaches with non-CLP laboratories, such as state laboratories and other non-federal sponsors, and the potential this has for data reporting requirements for other USEPA programs; and 4) the need for developing similar reporting standards for associated field data and the means to conduct data validation and data usability of merged field and laboratory data in support of project level decisions.

ID = 53

Title:	A business case for Implementing Uniform Federal Policy for Quality Assurance Project Plans (UFP QAPPs) – The Region 2 Experience
Presenter(s):	Kevin Kubik, USEPA Region 2
Key Message(s):	• Net benefits from using UFP-QAPP guidance • User- Friendly Implementation Tools
Abstract:	Over a three year period, benefits resulting from use of the UFP-QAPP in Region 2 include: improved QAPP quality; reduced preparation and review costs; and an expanding customer base among Superfund, Brownfields, and non-Superfund programs (Great Lakes National Program Office). The UFP-QAPP directive was issued by OSWER for use on June 7, 2005 for implementation on all Federal Facility Hazardous Waste Sites. Region 2 has adopted the directive for all Region 2 CERCLA, RCRA, and Brownfields environmental data collection projects. This past year Region 2 has improved UFP-QAPP guidance usability by developing, distributing, and conducting training on a suite of user-friendly tools and an improved data deliverable process. Electronic UFP-QAPP worksheet templates for Region 2 DESA Laboratory and Contract Laboratory Program (CLP) method information as well as a Generic QAPP template have been developed and distributed to customers. UFP QAPP guidance and worksheet templates for use in Emergency Response initial incident response and in transitional/follow-up activities were developed and training presented to regional emergency responders, on-scene coordinators, and contractors. In implementing the UFP data review process, the Region is moving from an assembly line/cookie-cutter data validation process to project specific data quality assessments. This presentation will share Region 2's approach to customer friendly UFP implementation improvements and describe the net efficiency and quality benefits derived from increased use of the UFP.

ID = 54

Title:	Improving Customer Service Through Electronic Data Management & Paperless Data Delivery - The Region 2 Experience
Presenter(s):	Jennifer Feranda and Linda Mauel, USEPA Region 2
Key Message(s):	• Quicker Delivery of Quality Assured Contract Laboratory Program (CLP) Data to Superfund Clients • Integrated Approach to Tracking, Managing and Reporting QA Lifecycle Information for Environmental Data Collection Projects • EMS Benefits from Paperless Delivery & Management of Data
Abstract:	Region 2 has made great strides in efforts to improve customer service and satisfaction, balanced with assuring the quality of environmental data used in decision-making. This presentation shares two contributing initiatives. The Region has developed an innovative process which enables delivery of quality assured analytical data, provided through the USEPA's Contract Laboratory Program (CLP), in a completely electronic format to Superfund, RCRA, and Brownfields clients. The data delivery process is provided in two stages: Stage 1) the delivery of preliminary data in an Excel superset spreadsheet format following an initial automated data review process to allow USEPA project managers to perform an initial assessment of potential project needs. A software tool (Data Assessment Tool (DAT) Editor) has been provided to assist them in reading and pulling information they need from the Excel files; and Stage 2) the delivery of the final quality assessed data, both in the Excel superset spreadsheet format and a Form 1 PDF format on completion of final validation and data quality assessment. With the Agency's change in database software from Lotus Approach to Microsoft Access, Region 2 found an opportune time to develop a tracking database to manage information related to the Quality Assurance (QA) oversight of Superfund Projects. The intent of the database is to: 1. Provide cradle-to-grave tracking of environmental data collection projects from Quality Assurance Project Plan (QAPP) development thru booking and assignment of analytical services to data review and final archival of project data; 2. Integrate with other automated applications to minimize manual data entry and manipulation; 3. Generate necessary management reports to document Regional compliance with national policies on procuring analytical services (FASTAC, ANSETS); and 4. Minimize time and resources needed to input, track, manage, and maintain environmental data and information. These processes provide great improvement in timeliness for data delivery to customers and data management. USEPA resources to organize, copy, and mail hard copies of the data packages and to manually enter database information have been saved. In addition, the paperless delivery initiative has met EMS goals by a two thirds reduction in paper used for replicating hard copy data deliverable packages.

ID = 57

Title:	Improving Performance Data Though a Life-Cycle Approach to Information Quality: Implementation of the Agency's Quality Policy
Presenter(s):	Joseph Greenblott and Judy Lieberman USEPA, Office of the Chief Financial Officer, Office of Planning, Analysis and Accountability John Warren and Patricia Mundy USEPA, Office of Environmental Information, Quality Staff
Key Message(s):	- Promote the collection, analysis, and use of performance data of known and acceptable quality. - Adequately characterize and effectively communicate the quality of performance data used by USEPA to inform the public and Agency management decisions. - Improve individual and organizational responsibility for ensuring the appropriate quality and use of performance data throughout the data lifecycle
Abstract:	USEPA, the Office of Management of Budget, Congress, and the public value Agency performance data used for programmatic and Agency-wide planning, decision-making, budgeting, and accountability. We highlight quality assurance issues for data used for performance measures. Planners and end-users involved in developing performance measures and collecting, analyzing, and using performance data will follow a systematic life-cycle approach for assuring performance data quality. Steps include the selection of performance metrics; data collection planning; data collection, storage, and analysis; and reporting and presentation. We discuss how to apply the Agency's new Quality Policy and the Plan-Do-Check-Act lifecycle approach for performance data to: - Promote the collection, analysis, and use of performance data of known and acceptable quality. - Adequately characterize and effectively communicate the quality of performance data used by USEPA to inform the public and Agency management decisions. - Improve individual and organizational responsibility for ensuring the appropriate quality and use of performance data throughout the data lifecycle We present case studies to demonstrate how the approach can be applied to existing performance data in two different USEPA programs.

ID = 58

Title:	Improving the Quality of Environmental Data Exchanges Using Shared Services
Presenter(s):	Pat Garvey and John Harman, USEPA Office of Environmental Information, Office of Information Collection
Key Message(s):	The Office of Information Collection (OIC) offers many services that program offices, regions, and labs can share to improve the quality of data that is exchanged among environmental partners
Abstract:	The Office of Information Collection (OIC) has services that support validation of data collected and transferred to USEPA. We work with USEPA program management and staff based on their business requirements to leverage existing services This session will include a review of services available in OIC, and a presentation of business cases that demonstrate these options. This includes the following: • Terminology Services • Exchange Network Quality Assurance Services • Facility Registry and Substance Registry Services • Code Set Management Services (coming features) • Office of Water Case Study

ID=60

Title:	Lora S. Results of an Organizations Self-Assessment of Model Development and Application Practices
Presenter(s):	Lora S. Johnson, Director of Quality Assurance, Office of Research and Development, National Exposure Research Laboratory
Key Message(s):	• The importance of models to the science of exposure research continues to grow. • QA practices for modelers need further refinement to address quality issues throughout the life cycle of models. • Principles of quality from both software engineering and science will be used to supplement existing QA policies.
Abstract:	The National Research Council issued a report on "Models in Environmental Regulatory Decision Making" (2007). This report, combined with the increasing importance of models to exposure research, prompted a comprehensive review of model selection, development, application, evaluation, and management practices within EPA's National Exposure Research Laboratory. Results of the self-assessment will be described, including the need to more systematically incorporate quality assurance practices from the perspective of both software engineering and science.

ID=61

Title:	Development, Evaluation and Application of Environmental Models
Presenter(s):	Noha Gaber, USEPA, Office of Research and Development, Office of the Science Advisor
Abstract:	The EPA Council for Regulatory Environmental Modeling recently published its Guidance on the Development, Evaluation and Application of Environmental Models. This document provides a simplified, comprehensive resource for modelers across the Agency on best modeling practices. When adhered to, the guidelines will help to ensure the quality, utility and regulatory relevance of the models that EPA develops and applies and the transparency of modeling analyses and model-based decisions. This presentation will provide details of the principles and best practices encouraged by the guidance and a discussion of the role of the QA community in implementing the guidelines.

ID=62

Title:	Start with the End in Mind: Key Ingredients for Effectively Working with Volunteer Collected Data
Presenter(s):	Danielle Donkersloot, New Jersey Department of Environmental Protection
Key Messages:	- Volunteers can assist in the collection of water quality data for regulatory purposes - Defining data quality and data uses of volunteer collected dat - Volunteer involvement in data exchange process
Abstract:	Well-designed monitoring programs have clear goals for their data – whether it's building a solid water quality database for future trend analysis or documenting a pollution source in the watershed. Defining your data use, data users and developing a data communication plan is often an afterthought for many monitoring programs. It is vital to define your data users and your uses as you start to plan your monitoring program. All too often volunteers try to fit their data/information into classic data use scenarios. When asked about data use goals for their program, volunteer program coordinators will often respond "we want our data to be used by the state," when in reality they are action-oriented and more interested in protecting, improving, or making a difference in their favorite waterbody or watershed. The first part of this workshop will focus on the key ingredients to consider when you design a monitoring program. We will discuss the example of how the NJ Department of Environmental Protection (NJDEP) has defined the uses of volunteer collected data through the four-tiered approach for the agency and public use. Volunteer collected data is recognized as part of the State's monitoring matrix and is viewed as a viable data source for the NJDEP. Even through the State has embraced the use of volunteer collected data, it has been difficult for the State to access and standardize the data of the many organizations throughout the state. The second part of the workshop will focus on the data management system the Department and volunteers have been working on for sharing different types of data and for presenting water quality information. We will discuss some of the strengths and short-falls of creating this type of system for volunteer use. These "lessons learned" apply to everyone in the water monitoring realm, not just the volunteers community.

ID=63

Title:	USEPA Region 6 Mobile Laboratory - A Field Analytical Vehicle
Presenter(s):	Raymond Flores, F. Edward O'Neill, and Nicholas Gannon, USEPA Region 6
Abstract:	The USEPA Region 6 Mobile Laboratory is housed at the Houston Regional Laboratory. The mobile laboratory provides onsite analyses for multiple environmental programs including Superfund, RCRA, CWA and SDWA. Mobile Laboratory analyses provide quick turn around times and enhanced site characterization from increased station location samplings resulting in the ability to perform real time decision making by the Project Lead. Mobile Laboratory analyses meet the DQOs of the project and are supplemented by fixed base laboratory confirmation analyses. The use of the Mobile Laboratory by Region 6 programs including analytical methodology, quality controls, advantages, limitations, data deliverable and accreditation will be presented.