

Waste Testing & Quality Assurance

13 Aug 2002



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Navy Lead*



Improving Environmental Data Quality

Topics



- ❖ Challenges Facing DoD
- ❖ Data Quality Improvement Strategy
- ❖ Process Improvements
- ❖ The Payoff

Challenges Facing DoD: Complex Environmental Issues



Challenge: Balancing Environmental Stewardship and Operational Readiness



U.S. Forces must “train as we fight”

Challenge:

Cost-Effective Environmental Studies

- ❖ Continued regulatory pressure to conduct open-ended studies
- ❖ DQOs do not adequately address the *end uses of the data, decision criteria, and actions*
- ❖ Systematic planning fails to include key players (e.g. project chemists and laboratory personnel)
- ❖ Prescriptive methods are not optimized for site-specific constituents of concern

DoD Environmental Costs (1991-2001) \$48 Billion!

Challenge:

Promoting Data Integrity

- ❖ 95% of DoD Laboratory testing is outsourced
- ❖ High cost of improper practices and fraud
- ❖ Procurement improvements needed:
 - Project chemist, not contracting POC, makes selection
 - Basis for selection is best-value, not cost
 - Laboratory is selected *before* QAPP is finalized

Challenge:

Limited Resources for Oversight

- ❖ Federal consensus needed for oversight roles and responsibilities
- ❖ No national mandate for laboratory accreditation currently exists
- ❖ Multiple, redundant, state laboratory accreditation programs are costly
- ❖ No mechanism currently exists to share laboratory performance information across DoD

Data Quality Improvement Strategy

Partnerships

❖ DoD/Government

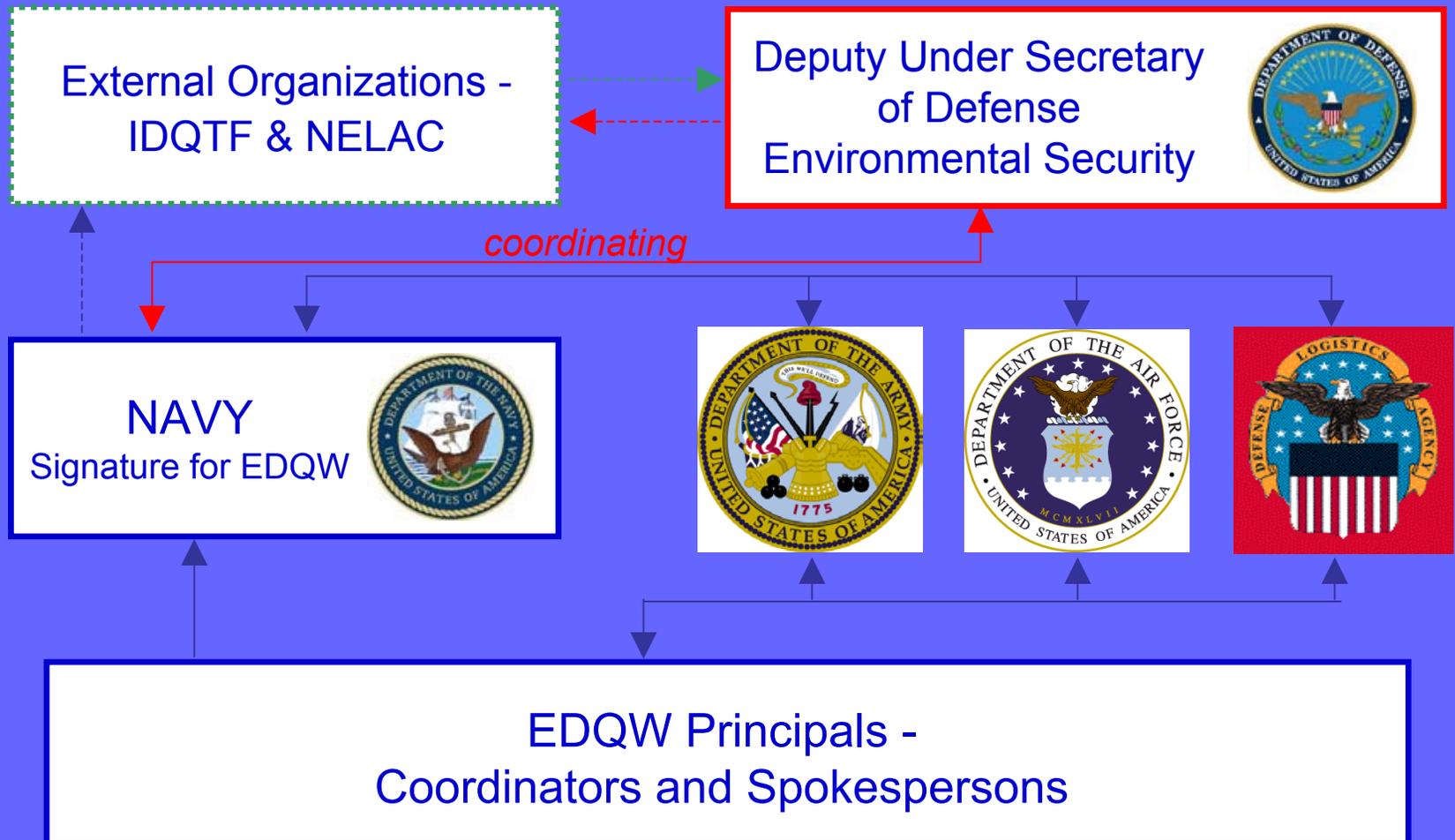
- DoD Environmental Data Quality Workgroup (EDQW)
- Intergovernmental Data Quality Task Force (IDQTF)

❖ Public/Private

- Society of American Military Engineers (SAME)
- International Laboratory Accreditation Cooperation (ILAC)
- National Water Quality Monitoring Council (NWQMC)
- National Institute of Standards and Technology (NIST)
- American Council of Independent Laboratories (ACIL)

Environmental Data Quality Workgroup

Navy, Lead Service

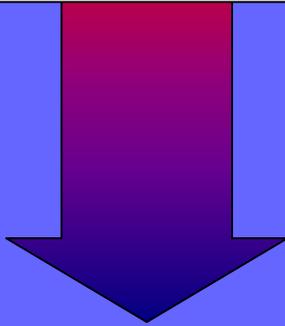


DoD Data Quality Improvement Strategy

Best Practices for Data Quality Oversight,

DoD Best
Practices

Translated into
A Strategy



END RESULT:
Multi-Component Products
Implemented Throughout DoD

- ❖ *Use a systematic planning process*
- ❖ *Implement National and International standards*
- ❖ *Issue QA/QC policy/guidance*
- ❖ *Improve laboratory oversight*
- ❖ *Improve management and contracting practices*

July 2002 Update

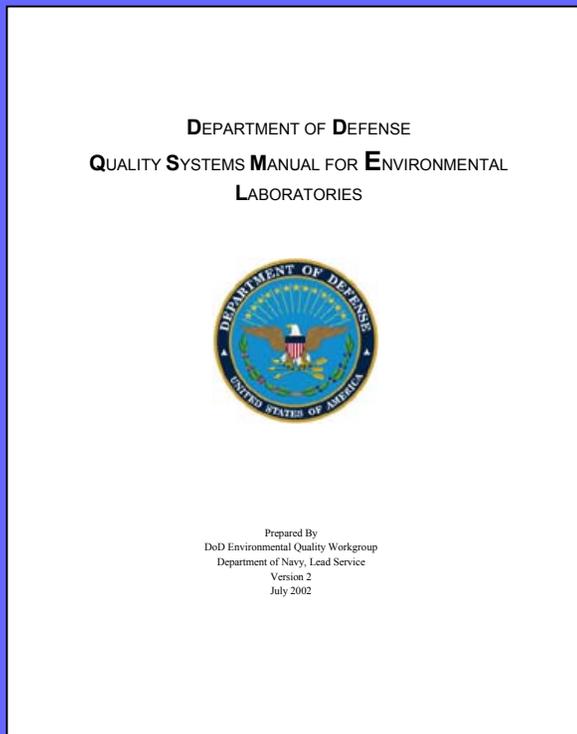
Process Improvements - EDQW

Support National Environmental Laboratory Accreditation

- ❖ National laboratory accreditation:
 - ❖ Provides *baseline* qualifications in specified fields of testing, *provided on-site assessments have been conducted*
 - ❖ Promotes inter-state accreditation reciprocity (consistency)
 - ❖ Reduces DoD resource needs for “pre-approval” audits
- ❖ DoD continues to support development of NELAC standards with greater participation from private sector

Process Improvements - EDQW

DoD Quality Systems Manual for Environmental Laboratories (QSM V2)



- ❖ Defines DoD Quality System requirements for laboratory testing (based on ISO 25/17025 and NELAC standards)
- ❖ Unifies common elements of Army, Navy, and Air Force QSMs
- ❖ Clarifies DoD performance expectations
- ❖ Deters improper laboratory practices
- ❖ Provides basis for shared DoD laboratory assessments and improved oversight

<https://www.denix.osd.mil/denix/denix.html>

Process Improvements - EDQW

Best-Value Laboratory Contracting

- ❖ *DoD Procurement Instruction Letter* (under development)
 - Establishes guidance for program personnel and contracting officers
 - Invokes higher level contract quality requirements (FAR 46.202-4 and 52.246-11)
 - Defines roles/responsibilities for key personnel
 - Provides tailored clauses for incorporation into solicitations and contracts
 - *Specifies prohibited laboratory practices*

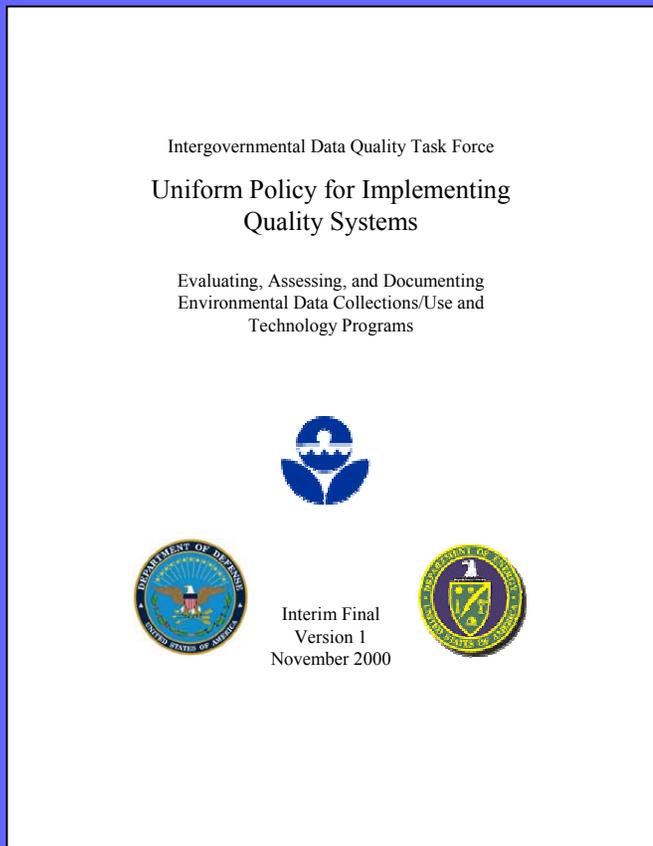
Intergovernmental Data Quality Task Force

- ❖ Commissioned by EPA Office of Solid Waste and Emergency Response (OSWER) to address 03/97 EPA OIG Report
- ❖ Consensus members: OSWER, EPA QA Staff, EPA Regions, DOE, and DoD
- ❖ MOU signed 12 April 2000 to develop consensus agreements



Process Improvements - IDQTF

Uniform Federal Policy for Implementing Quality Systems



Part A - Environmental Quality Systems

- ❖ Management system for environmental data collection and use of data
- ❖ Based on U.S. national standard (ANSI/ASQC E4)

Part B – Quality Assurance Project Plans

- ❖ Standard approach for planning and conducting environmental data collection activities
- ❖ Templates and guidance for preparing *user-friendly* project plans

Process Improvements - IDQTF

Roles and Responsibilities for Federal Facilities Oversight

- ❖ ***EPA HQ:*** support consistent quality systems (UFP) implementation throughout EPA and states
- ❖ ***EPA Regional offices:*** support the use of “graded approaches” and consistent review and approval of QAPPs
- ❖ ***Federal Departments/Agencies:*** oversee the implementation of quality systems within their own organizations
- ❖ ***Military Components:*** conduct the systematic planning process for environmental data collection
- ❖ ***IDQTF:*** continue to provide intergovernmental assistance for quality systems implementation

Integrated Quality Systems: An Example

Navy Range QAPP: Sampling and Testing at Active and Inactive Ranges

- ❖ Applies the UFP/QS and UFP/QAPP
- ❖ Standardizes processes for use across all EPA regions
- ❖ Provides templates for writing range-specific SAPs
- ❖ Facilitates Systematic Planning Process
- ❖ Optimizes use of field measurements, supported by laboratory analyses
- ❖ Streamlines data acquisition and management

Navy Range Sustainability Initiative

MASTER PROGRAM
QUALITY ASSURANCE PROJECT
PLAN
for
SAMPLING and TESTING
at
ACTIVE and INACTIVE RANGES



Draft: July 2002

Provides a framework for informed decisions

Quality Systems Implementation

*Proposed DoD Instruction 4715.XX
Environmental Data Quality Assurance*

- ❖ Integrates quality assurance considerations into DoD environmental sampling and testing activities
- ❖ Authorizes the publication of key Quality Systems documents (UFP/QS, UFP/QAPP, DoD QSM, Measurement Uncertainty)
- ❖ Establishes quality systems implementation metrics
- ❖ Implements data integrity requirements (PL 106-554)

Ensures environmental decisions are based on data of known and documented quality, appropriate for their intended use.

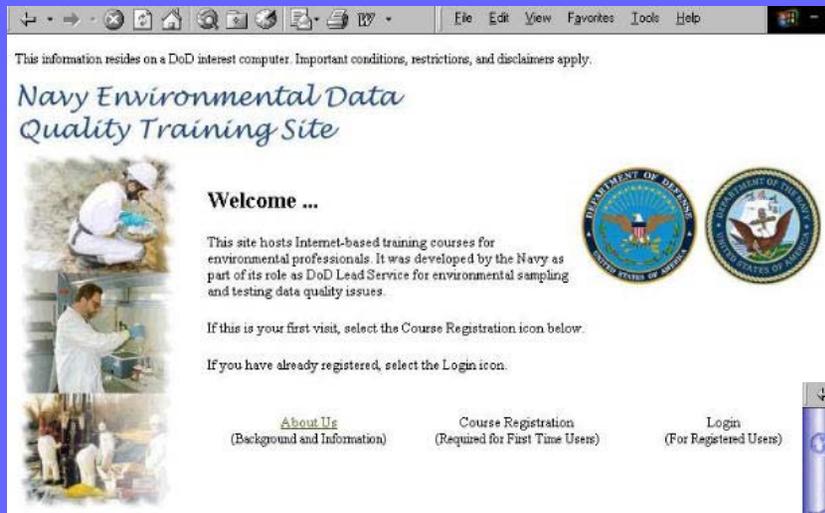
Quality Systems Implementation

Intergovernmental Training and Outreach

- ❖ EPA/DoD: Navy's Civil Engineers Corp Officers School (CECOS), UFP/QAPP training under development
- ❖ Air Force: Web-based UFP/QAPP project managers' training under development
- ❖ EDQW: Co-sponsored NELAC 7i training (Dec 01)
 - Detecting Improper Laboratory Practices
 - Measurement Uncertainty

Quality Systems Implementation

Navy Training and Outreach



- Internet-based training courses teach key concepts and application of Navy Quality Systems Policy
- Easy user interface makes learning efficient, cost-effective, and informative

Quality Systems
Web-based Training
www.navylabs.navy.mil



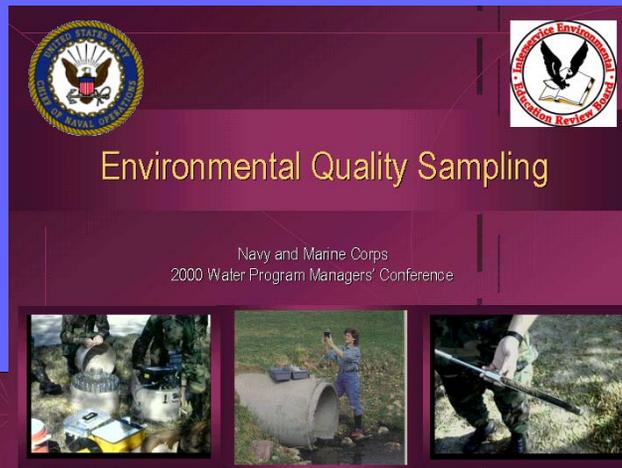
Quality Systems Implementation

Navy Civil Engineering Corps Officers School (CECOS)

Environmental Quality Sampling Courses

Approved by

Interservice Environmental Education Review Board (ISEERB)



The banner features two circular logos at the top: the United States Navy Seal on the left and the Interservice Environmental Education Review Board (ISEERB) logo on the right. The text "Environmental Quality Sampling" is centered in a gold font. Below this, it reads "Navy and Marine Corps" and "2000 Water Program Managers' Conference". At the bottom, there are three small images: a person in a field with equipment, a person taking a photo of a pipe, and a person using a tool on the ground.

Environmental Quality Sampling - Water

Course Design - Five Days

- Day 1 - Sampling Foundation
- Day 2 - Drinking Water
- Day 3 - Surface Water
- Day 4 - Waste Water
- Day 5 - Specific Issues



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Environmental Quality Sampling - Soil, Hazardous Waste, and Groundwater

Course Design - Five Days

- Day 1 - Sampling Foundation
- Day 2 - Soil Sampling
- Day 3 - Hazardous Waste Sampling
- Day 4 - Groundwater Sampling
- Day 5 - Specific Issues

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Best Practice Update July 2002

Key Initiatives for 2002/2003

- ❖ Complete the DoD Data Quality Instruction
- ❖ Complete the UFP/QAPP and R&R guidance
- ❖ Conduct Quality Systems implementation training and outreach
- ❖ Continue to support national laboratory accreditation
- ❖ Perform joint DoD laboratory assessments
- ❖ Develop best-value contract language

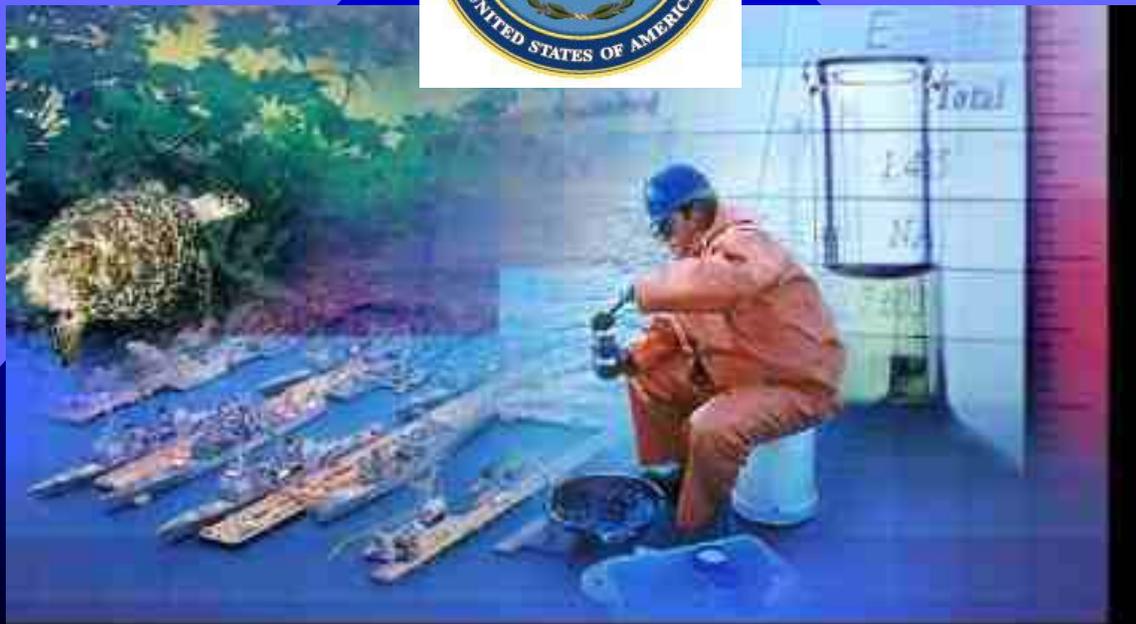
Improving Data Quality: *The Payoff*

- ❖ Consistent requirements across EPA regions and states
- ❖ Flexible “graded” approaches and streamlined project execution
- ❖ Improved oversight and contracting for lab services
- ❖ Reduced costs
- ❖ Sustained operational readiness

***Cost-effective data collection,
Sound environmental decisions***

Improving Environmental Data Quality

... Because the Right Decisions Require Quality Data



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