DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
Washington, DC 20314-1000

CEMP-CE

Regulation
No. 200-1-7

28 November 2014

Environmental Quality
CHEMICAL DATA QUALITY MANAGEMENT FOR
ENVIRONMENTAL RESTORATION ACTIVITIES

1. Purpose.

a. This regulation prescribes Chemical Data Quality Management (CDQM) for environmental restoration projects. Its purpose is to ensure analytical data will meet project Data Quality Objectives (DQOs). This is the umbrella regulation that defines CDQM activities and integrates all other U.S. Army Corps of Engineers (USACE) guidance on environmental CDQM.

b. The foundation of Corps of Engineers environmental work is the Environmental Operating Principles as specified in ER 200-1-5. These seven tenets serve as guides and must be applied in all Corps business lines as we strive to achieve a sustainable environment.

2. Applicability. This regulation applies to Headquarters U.S. Army Corps of Engineers (HQUSACE) elements, major subordinate commands (MSCs), districts, laboratories and separate field operating activities responsible for Hazardous, Toxic and Radioactive Waste (HTRW) and Military Munitions Response Program (MMRP) activities conducted under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Resource Conservation and Recovery Act (RCRA). The CDQM procedures detailed in this Engineer Regulation (ER) are not required but may be used for projects under Civil Works and other environmental programs. This regulation applies to all laboratory and field chemical (including radiological) testing (e.g., prescriptive and performance-based methods) for soil, water, air, and other environmental media, but does not apply to toxicity testing (e.g., for environmental risk assessments) or personnel safety monitoring.

3. Distribution Statement. Approved for public release; distribution is unlimited.

4. References. References are provided in Appendix A.

5. Policy. The USACE policy is to produce products and services that fully meet customers' expectations for quality, timeliness and cost, within the bounds of legal responsibility. Products and services are delivered through the Project Management Business Process defined in ER 5-1-11 and the Quality Management System in ER 5-1-14. As discussed in the Department of Defense (DoD) Quality Systems Manual for

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This regulation supersedes ER 1110-1-263, dated 30 April 1998.

Environmental Laboratories (QSM), the USACE possesses a zero-tolerance policy for unethical and inappropriate practices that misrepresent or compromise the integrity of environmental analytical data.

6. Discussion.

a. The intent of this regulation is to direct CDQM to ensure the quality and quantity of the data will be appropriate for their intended use. Organizational and programmatic requirements for CDQM shall be documented in a Quality Management Plan (QMP). For example, the QMP must address the requirements in ER 200-3-1 for the Formerly Used Defense Sites (FUDS) program. QMPs for the Superfund program must be approved by U.S. Environmental Protection Agency (USEPA) Regional Quality Assurance (QA) staff. The QMP, which may be written by the MSC or each subordinate district, must explain how the requirements for CDQM will be satisfied by addressing the ten major QS elements described in the Uniform Federal Policy for Implementing Environmental Quality Systems (UFP QS). The UFP QS was developed to facilitate the consistent implementation of the quality system requirements of ANSI/ASQC E4.

b. This ER allows the Project Delivery Team (PDT) the flexibility to design a comprehensive and multifaceted approach to CDQM that is appropriate for each project. However, the minimum requirements described below must be met.

(1) An appropriately staffed PDT shall perform systematic project planning to define the quality and quantity of data required for all scientific and engineering evaluations. Data Quality Objectives shall be developed using the Technical Project Planning (TPP) process described in EM 200-1-2 and documented in the Quality Assurance Project Plan (QAPP). Systematic project planning may be conducted using the seven-step DQO Process described in USEPA QA/G-4 to satisfy customer-specific requirements such as for projects under the USEPA Superfund program. A USACE project chemist must be an adequately resourced member of the TPP team when chemical sampling, testing or data assessment is a significant component of the project. Districts with insufficient chemists to provide technical support for a project shall rely on virtual teaming or coordinate with the Environmental and Munitions Center of Expertise (EM CX) for chemistry support.

(2) The QAPP shall be the component of the Project Management Plan (PMP) that defines project-specific requirements for chemical data and shall comply with the Uniform Federal Policy for Quality Assurance Project Plans (UFP QAPP), per the DoD Policy Memorandum, “Uniform Federal Policy for Quality Assurance Project Plans (UFP QAPP).” The UFP QAPP provides guidance and instructions for developing QAPPs for the collection and use of environmental data.

(3) Analytical service providers shall possess current accreditation under the DoD Environmental Laboratory Accreditation Program (ELAP) for the project’s analytical parameters, per DoD Instruction 4715.15, “Environmental Quality Systems.” Test method quality controls must comply with the most recent version of the DoD QSM.

The QSM is based on The NELAC Institute (TNI) standards, which incorporate the standards of ISO/IEC 17025:2005(E). Laboratories under the Contract Laboratory Program may be used for analytical support for projects under the Superfund program when requested by the USEPA.

(4) A project-specific laboratory review, as detailed in EM 200-1-1 (Project-Specific Review of Analytical Chemistry Laboratories), must be conducted by the project chemist when a new laboratory is contracted for project analytical support, new Measurement Performance Criteria (MPC) are established for chemical analyses, or non-standard or nonconventional test methods (e.g., as defined in EPA CIO 2106-G-05, Guidance on Quality Assurance Plans) are used. The DoD ELAP assesses laboratories using only the minimum requirements in the DoD Quality Systems Manual rather than project-specific criteria. A Project-Specific Laboratory Review ensures the laboratory is capable of generating data that will meet the project's DQOs.

(5) A Technical Review (TR) of the project's deliverables (e.g., the UFP QAPP and data validation reports) must be conducted by the USACE project chemist when chemical sampling, testing or data assessment is a significant component of the project. The design district is responsible for reviewing the quality of the project's deliverables from the prime contractor and documenting the assessment. Using information from the prime contractor, the USACE project chemist, with consultation with the PDT, conducts a Chemical Data Quality Assessment (CDQA), as described in EM 200-1-6, to document the usability of the data with respect to the project's DQOs. The CDQA shall be included with the project's submittals for an Independent Technical Review (ITR).

(6) An Independent Technical Review (ITR) of the project's deliverables (e.g., work plans, data validation reports, and CDQAs) shall be conducted when sampling, testing, or data assessment is a significant component of a project. The ITR may be performed by any qualified USACE or external personnel that are independent the PDT and project's data implementers and users. If the ITR is not done by the USACE for contracted work, the ITR shall be done by a second contractor that is independent of the sample collection, testing and data assessment activities conducted by the prime contractor. The PDT shall respond and attempt to resolve significant comments from the independent reviewers. The MSC Quality Assurance Coordinator (QAC) must be notified of all unresolved significant issues.

c. The USACE project chemist, with consultation with the TPP team, shall determine the appropriate level of CDQM activities in addition to the mandatory elements described in 6b(1) - (6). This determination shall be done for each project, and shall be based on the intended data use and level of confidence that is needed to meet the DQOs. The CDQM activities required for each project (e.g., the quality control components, their application frequency, and corrective actions for non-conformances) must be documented in the QAPP and may include one or more of the following activities (as defined in EM 200-1-6):

(1) QA sample collection and analysis;

(2) single- or double-blind Proficiency Testing (PT) sample analysis;

(3) field audits;

(4) data review; and

(5) tape audits.

The DoD Environmental Field Sampling Handbook may be useful for conducting field audits as it provides guidance on environmental field sampling procedures. Data validation or review should typically be done when new chemical data are generated or historical data from significantly older or different sampling or analytical methods will be used. EM 200-1-10 presents guidance on data review for performance based methods. Tape audits are usually done only when fraudulent or inappropriate laboratory practices are suspected.

d. Personnel Qualifications and Training. The USACE is committed to training and learning as an organization and as individuals to increase innovation and performance, and to develop and retain the technical expertise that will meet the needs of its customers. The QMP (paragraph 6a) must describe how managerial and technical personnel are educated and trained. In general, Functional Chiefs, via coordination with the Project Manager (PMs), are responsible for ensuring (prior to the start of work) only qualified personnel are selected for PDTs. As work progresses the Functional Chiefs or members of the PDTs may identify additional individual or organizational training required to satisfy project- or program-specific needs. Project chemists and Quality Assurance Managers (paragraph 9d) must meet the minimum qualifications described in the DoD Policy and Guidelines for Acquisitions Involving Environmental Sampling or Testing (November 2007). To ensure training is adequate to achieve and maintain technical competency, as required by ER 350-1-420, supervisors must coordinate with employees at least annually to update and document training objectives and accomplishments in Individual Development Plans (IDPs). Career Program 18 (CP-18) through the Army Civilian Training, Education and Development System (ACTEDS) offers continuing job-related education, technical training and career broadening developmental assignments for engineers and scientists.

e. Procurement of Products, Services, and Activities: Procurement policies and procedures must be documented in the QMP per the UFP QS, which must hold suppliers accountable for products, services, and activities that meet specifications. In general, procurement is governed by the Federal Acquisitions Regulations, Defense Federal Acquisition Regulation Supplement, Army Federal Acquisition Regulation Supplement, and Engineer Federal Acquisition Regulation Supplement. DoD Policy and Guidelines for Acquisitions Involving Environmental Sampling or Testing establishes procedures and responsibilities for the minimum performance standards through solicitations and contracts involving environmental sampling and testing.

f. Documents and Records. Organizational policies and procedures for records and documents (e.g., management, preparation, control, and storage) for hardcopy and electronic media must be documented in the QMP as described in the UFP QS. In general, the Army Records Information Management System is the Army's recordkeeping system to properly manage information from creation to final disposition compliant with federal laws and Army specifications. The Corps Electronic Publications Library (http://www.publications.usace.army.mil/) is the official repository of USACE Command Publications (e.g., engineering regulations, circulars, manuals, and other documents originating from HQUSACE). In additional to compliance with Command Publications that relate to information management (e.g., ER 25-1-2), the QMP and QAPP must address program- and project-specific requirements for documents and records. Requirements for data deliverables for the FUDS Program such as Staged Electronic Data Deliverables (SEDD) are described in detail in IGD 14-1 (Section 13.8). Analytical test results and associated data used for numerical calculations (e.g., statistical evaluations) shall be managed and stored electronically in a manner that preserves the data's integrity. The data, calculations and supporting documentation shall be readily retrievable in a usable form (e.g., that enables users to independently reproduce or verify results).

7. Quality Systems Roles, Responsibilities, and Authorities for CDQM.

a. The Corps of Engineers, Directorate of Military Programs, Environmental Division (CEMP-CE), is responsible for:

(1) establishing policies and strategic objectives for CDQM;

(2) disseminating and implementing programmatic CDQM policy and guidance;

(3) programming funds for the DoD Environmental Data Quality Workgroup (EDQW);

(4) obtaining feedback on the effectiveness of CDQM (e.g., from the MSCs); and

(5) identifying and implementing continual improvements for CDQM.

b. The Huntsville Engineer and Support Center, Environmental and Munitions Center of Expertise is responsible for:

(1) providing environmental chemistry and munitions technical support (e.g., training and technical transfer);

(2) supporting and participating in the EDQW;

(3) reviews requested for technical documents (e.g., ITRs);

(4) providing feedback to CEMP-CE;

(5) supporting CEMP-CE by developing and disseminating HTRW CDQM guidance; and

(6) recommending improvements for the USACE CDQM quality system.

c. The MSCs are responsible for:

(1) assisting subordinate districts in improving the quality, cost-effectiveness, and timeliness of their projects and services;

(2) ensuring the districts comply with HTRW CDQM policy;

(3) providing feedback to CEMP-CE;

(4) assisting in the resolution of technical issues; and

(5) verifying appropriate implementation and documentation of corrective actions for non-conformances.

Each MSC must designate at least one QAC to assist and assess CDQM for its subordinate districts. The QAC may be a member of an interdisciplinary team of technically qualified individuals (e.g., from the MSC, PM Districts or EM CX) that is established to evaluate a district's quality processes for chemical data. The QAC is responsible for oversight of corrective actions for systematic problems and coordinating the resolution of significant comments raised during ITRs. To assess whether the requirements of this ER are substantively met and to facilitate continual improvements, the MSC's QAC is responsible for periodically conducting audits of the subordinate districts. A memorandum outlining findings will be prepared by the QAC and provided to CEMP-CE and the audited entity. A corrective action plan that describes the remedies and implementation schedules for all deficiencies or non-conformances identified in the QAC's findings memorandum is mandatory. The corrective action plan shall be prepared by the audited entity and submitted to the QAC. The QAC will provide a copy of the corrective action plan to CEMP-CE.

d. The districts are responsible for:

(1) project and contractor management and oversight;

(2) project DQO development via systematic planning to ensure data will be adequate in quantity and quality for their intended use;

(3) determining requirements for sampling and analysis;

(4) ensuring the project's MPC have been communicated to the laboratories that will provide the analytical services;

(5) data usability assessment;

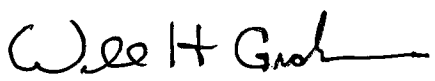
(6) submitting corrective action feedback to the controlling MSCs; and

(7) providing feedback through the MSC to HQUSACE on HTRW environmental chemistry and munitions policy and guidance.

To effectively and efficiently deliver quality products and services, on time and within budget, the PM must control the planned and budgeted project resources. As stated in ER 5-1-11, the PM not only leads the PDT, but is also responsible for directing it to ensure the delivered products and services meet the customer's expectations for quality, cost, and schedule. At least one USACE project chemist must be a member of the PDT for all projects where chemical (including radiological) data are generated or assessed and constitute a significant component of decision-making. The execution of the CDQM activities may also involve other chemists such as chemists from contractors, other districts, the EM CX, or the HQUSACE. In addition, each project must have a designated Quality Assurance Manager (QAM) that is independent of the PDT. The QAM is responsible for verifying products and services are performed in accordance with program and project management plans and HQUSACE policies (e.g., as detailed in USACE Command Publications) and meet the needs of customers. For in-house work this role is usually the responsibility of the District Functional Chiefs. For contracted work, the project QAM is usually designated from within the contractor's organization.

8. Quality Improvement. An after-action or "lessons learned" report generated by the PDT is considered a key component of project close out. "Lessons learned" reporting addresses practices that were especially effective for meeting the project's goals or solving the project's problems that significantly hindered attainment of the DQOs, especially if they seem relevant to similar projects or related work. For problems that are identified, the reports should include recommendations for improving processes or products (e.g., innovative technologies or "best practices") or for avoiding reoccurrences of problems. The distribution of these reports should include the project's QAM and the USACE QAC at the MSC. The EM CX will periodically evaluate the USACE quality system to recommend improvements for CDQM. Lessons-learned reporting may also be based on the findings from the periodic audits conducted by the QACs described in paragraph 9c.

FOR THE COMMANDER:



Appendix A-References
Glossary

WILLIAM H. GRAHAM
COL, EN
Chief of Staff

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APPENDIX A
References

A-1. Required Publications.

42 U.S.C. § 9601. et seq., as amended
Comprehensive Environmental Response, Compensation, and Liability Act of 1980

42 U.S.C. § 6901, et seq., as amended
Resource Conservation and Recovery Act of 1976

DoD Instruction 4715.15
Environmental Quality Systems

Department of Defense Policy and Guidelines for Acquisitions Involving Environmental Sampling or Testing, November 2007;
http://www.navylabs.navy.mil/Archive/ProcPolicyGuideDec07.doc

DoD Policy Memorandum, "Uniform Federal Policy for Quality Assurance Project Plans," of 11 April 2006, Assistant Deputy Under Secretary of Defense;
http://www.denix.osd.mil/edqw/upload/ADUSD_MEMO.PDF

DoD Environmental Field Sampling Handbook, Revision 1.0 April 2013;
http://www.denix.osd.mil/edqw/upload/DoD-Environmental-Field-Sampling-Handbook.pdf

Department of Defense Quality Systems Manual For Environmental Laboratories, Version 5, July 2013; http://www.denix.osd.mil/edqw/upload/QSM-Version-5-0-FINAL.pdf

ER 5-1-11
U.S. Army Corps of Engineers Business Process

ER 5-1-14
USACE Quality Management System

ER 200-1-5
Policy for Implementation and Integrated Application of the U.S. Army Corps of Engineers Environmental Operating Principles and Doctrine

ER 200-3-1
Formerly Used Defense Sites Program Policy

ER 350-1-420
Five-Year Individual Development Plan (IDP) and Developmental Assignments

ER 200-1-7
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EM 200-1-1
Validation of Analytical Chemistry Laboratories

EM 200-1-2
Technical Project Planning (TPP) Process

EM 200-1-6
Chemical Quality Assurance for Hazardous, Toxic and Radioactive Projects;

EM 200-1-10
Guidance for Evaluating Performance-Based Chemical Data

IGD 14-1
Interim Guidance Document, Technical Guidance for Military Munitions Response Actions (EM 200-1-15);
https://eko.usace.army.mil/usacecop/environmental/subcops/htrw/?syspage=Documents&id=263072

EPA CIO 2106-G-05 QAPP
Guidance on Quality Assurance Plans; http://www.epa.gov/oeitribalcoordination/2106-G-05%20QAPP%20Final%20Draft%2001-17-12.pdf

EPA/240/B-06/001 EPA QA/G-4
Guidance on Systematic Planning Using the Data Quality Objectives Process, February 2006; http://www.epa.gov/QUALITY/qs-docs/g4-final.pdf

EPA 505-B-05-900A UPF QAPP
Intergovernmental Data Quality Task Force, Uniform Federal Policy for Quality Assurance Project Plans, DTIC ADA 427785, Part 1: UFP-QAPP Manual, March 2005; http://www.epa.gov/fedfac/documents/qualityassurance.htm#ufp-qapp

EPA 505-F-03-001 UFP QS
Intergovernmental Data Quality Task Force, Uniform Federal Policy for Implementing Environmental Quality Systems, DTIC ADA 395303, DOE/EH-0667, Final Version 2, March 2005; http://denix.osd.mil/edqw/upload/UFP.PDF

ANSI/ASQC E4
ANSI Specification and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs

ISO/IEC Guide 17025:2005(E)
General requirements for the competence of calibration and testing laboratories

TNI Standard, Management and Technical Requirements for Laboratories Performing Environmental Analysis, 2009; http://www.nelac-institute.org/docs/standards/2012/STD-3-V1-2009-TIA-8-1-12-Adopted.pdf

A-2. Related Publications.

DoD Best Practices for Data Quality Oversight of Environmental Sampling and Testing Activities, November 2000, Progress Report; http://denix.osd.mil/edqw/Documents.cfm

Ensuring Quality of Information Disseminated to the Public by the Department of Defense, February 10, 2003; http://www.dod.gov/pubs/ensure-qual-attachment1.html

AR 5-1
Total Army Quality Management

ER 1110-1-12
Quality Management

EM 1110-1-502
Technical Guidelines for Hazardous and Toxic Waste Treatment and Cleanup Activities;

EM 200-1-16
Environmental Statistics

EPA QA/G-5S, Guidance on Choosing a Sampling Design for Environmental Data Collection, December 2002; http://www.epa.gov/QUALITY/qs-docs/g5s-final.pdf

EPA QA/G-8, Guidance on Environmental Data Verification and Data Validation, November 2012; http://www.epa.gov/QUALITY/qs-docs/g8-final.pdf

EPA QA/G-9R, Data Quality Assessment: A Reviewer's Guide, February 2006; http://www.epa.gov/QUALITY/qs-docs/g9r-final.pdf

EPA QA/G-9S, Data Quality Assessment: Statistical Methods for Practitioners, February 2006; http://www.epa.gov/QUALITY/qs-docs/g9s-final.pdf

EPA-540-R-08-005, Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, January 2009; http://www.epa.gov/superfund/policy/pdfs/EPA-540-R-08-005.pdf

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GLOSSARY

Terms and Abbreviations

Section I
Abbreviations

ANSI	American National Standards Institute
AR	Army Regulation
ASQ	American Society for Quality (formerly American Society for Quality Control (ASQC))
CDQA	Chemical Data Quality Assessment
CDQM	Chemical Data Quality Management
CEMP-CE	Corps of Engineers, Directorate of Military Programs, Environmental Division
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DoD	Department of Defense
DQO	Data Quality Objective
EDQW	Environmental Data Quality Workgroup
ELAP	Environmental Laboratory Accreditation Program
EM	Engineer Manual
EM CX	Environmental and Munitions Center of Expertise
ER	Engineer Regulation
FUDS	Formerly Used Defense Sites
HQUSACE	Headquarters, U.S. Army Corps of Engineers
HTRW	Hazardous, Toxic, and Radioactive Waste
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
IDP	Individual Development Plan
ITR	Independent Technical Review
MMRP	Military Munitions Response Program
MPC	Measurement Performance Criteria
MQO	Measurement Quality Objective

MSC	Major Subordinate Command
NELAC	National Environmental Laboratory Accreditation Conference
PDT	Project Delivery Team
PM	Project Manager
PMP	Project Management Plan
QA	Quality Assurance
QAC	Quality Assurance Coordinator
QC	Quality Control
QMP	Quality Management Plan
QS	Quality System
QSM	Quality Systems Manual for Environmental Laboratories
RCRA	Resource Conservation and Recovery Act
TNI	The NELAC Institute
TR	Technical Review
UFP	Uniform Federal Policy
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency

Section II
Terms

Activity:
An all-inclusive term describing a specific set of operations or related tasks to be performed, either serially or in parallel, that, in total, result in the completion of a product or service.

Assessment:

The evaluation process used to measure the performance or effectiveness of a system and its elements.

Audit:
An independent, systematic examination to determine whether activities comply with planned arrangements, whether the arrangements are implemented effectively, and whether the results are suitable to achieve objectives.

Center:
A command and control entity similar in function to an MSC, with responsibility for a more narrowly defined scope of activities. Centers usually have programmatic and functional boundaries instead of geographical boundaries-like divisions.

Chemical Data Quality Management:
The quality management system (e.g., as defined in ISO 9000:2005E) as it relates to chemical data. It refers to set of procedures and processes that address all aspects of chemical data generation, collection, assessment and management (e.g., control, storage and retrieval) needed to ensure data will be appropriate for their intended use.

Corrective action:
Measures taken to rectify conditions adverse to quality and, where possible, to preclude their recurrence.

Data Quality Objectives:
Qualitative and quantitative statements that clarify technical and quality objectives, define the appropriate type of data, and specify tolerable levels of potential decision errors that will be used as the basis for establishing the quality and quantity of data needed to support decisions. Note that the UFP QAPP refers to DQOs as Project Quality Objectives (PQOs).

Data usability assessment:
A holistic scientific evaluation of environmental data (often involving statistical methods) to determine if data satisfy the project's objectives, and thus are of the appropriate type, quality and quantity to support their intended use. Data usability assessment is based on the premise that data quality is meaningful (e.g., in planning, operations, and decision-making) only in the context of the intended use of the data. It is typically a separate activity that is done after data review or validation that focuses on the quality of data sets rather than individual results.

Data validation:
An analyte- and sample-specific assessment to determine whether chemical data have met MPC and are potentially appropriate for their intended use. It includes evaluation of conformance with method, procedural and QC specifications (e.g., detailed in the QAPP) to assess the quality of the individual chemical measurements.

Document:
Any written or pictorial information describing, defining, specifying, reporting, or certifying activities, requirements, procedures or results.

Entity:
Something which can be individually described and considered, such as a process, product, item, organization, or combination thereof.

Feedback:
Communication of data quality performance to sources which can take appropriate action.

Finding:
An assessment conclusion that identifies a condition having a significant effect on an item or activity. An assessment finding may be positive or negative, and is normally accompanied by specific examples of the observed condition.

Hazardous, Toxic and Radioactive Waste:
An idiom from the USACE referring to substances which, because of their properties, occurrence, concentration or regulatory status, may potentially pose a threat to human health and welfare, or the environment. This includes, but is not limited to, PCBs regulated by Toxic Substances Control Act (TSCA) radioactive wastes, and materials defined as hazardous waste, hazardous substances, and pollutants by Federal regulation.

Hazardous, Toxic, and Radioactive Waste activities:
Activities related to HTRW undertaken for the Defense Environmental Restoration Program (DERP), including Formerly Used Defense Sites (FUDS) and Installation Restoration Program sites at active DoD facilities, Formerly Utilized Sites Remedial Action Program (FUSRAP), the United States Environmental Protection Agency's Superfund program; it includes HTRW actions associated with Civil Works projects, and any other mission or non-mission work performed for others at HTRW sites. Such activities include, but are not limited to, Preliminary Assessments/Site Inspections, Remedial Investigations, Feasibility Studies, Engineering Evaluation/Cost Analyses, Resource Conservation and Recovery Act Facility Investigations/Corrective Measures Studies/Corrective Measures Implementation/Closure Plans/Part B Permits, or any other investigations, design activities, or remedial construction at known, suspected, or potential HTRW sites. HTRW activities also include those conducted at "Containerized" HTRW sites, such as leaking Polychlorinated Biphenyls (PCB) transformers, leaking or suspected leaking Underground Storage Tanks (USTs), that contain hazardous substances, hazardous wastes, or hazardous materials as defined by 29 CFR 1910.120(a)(3)/29 CFR 1926.65(a)(3).

Inspection:
Examination or measurement of an item or activity to verify conformance to specific requirements.

Independent Technical Review:
A second-tier QA review for projects conducted by technical staff external to the PDT to verify project DQOs have been met and identify significant issues.

Manager:
Individual directly responsible and accountable for planning, implementing, and assessing work.

Method:
A body of procedures and techniques for performing an activity systematically presented in the order in which they are to be executed.

Measurement Performance Criteria:
Acceptance criteria for Data Quality Indicators (e.g., precision, bias and sensitivity) for test methods. MPC are also known as Measurement Quality Objectives (MQOs) and are generally project-specific.

Non-conformance:
A deficiency in characteristic, documentation, or procedure that renders the quality of an item or activity unacceptable or indeterminate; non-fulfillment of a specified requirement.

Procedure:
A specified way to perform an activity.

Process:
A set of interrelated resources and activities which transforms inputs into outputs.

Program:
A group of projects, services or other activities that may be categorized by funding source, customer requirements or other common criteria for which resources are allocated and collectively managed.

Project:
Any work (products, services, etc.) intended to produce a specific outcome or solution to a customer problem or need.

Project Delivery Team:
A group of technical specialists (geologists, chemists, risk assessors, regulatory specialists, etc.) that executes a single project. The PDT may be assembled from one or more USACE districts, contractors, and stakeholders, representatives from state or other federal agencies or vertical members from division or headquarters who are needed to effectively develop and deliver the project. The PDT is lead by single a Project Manager for the life cycle of the project.

Project Manager:
The leader of the project team, responsible for managing the project parameters (budget, cost, safety, schedule, scope and quality), as well as interfacing with those involved in the project process (customers, functional elements, government, and non-government entities).

Project Management Plan:
The detailed, specific plan used to manage and control project delivery from inception to completion to satisfy the project's DQOs and meet the expectations of the customer.

Quality:
The totality of features and characteristics of a product or service that bear on its ability to meet the stated or implied needs and expectations of the user.

Quality Assurance:
Process intended to ensure that a product or service under development (before work is complete, as opposed to afterwards) will meet specified requirements; portion of the QS (i.e., planned systematic monitoring and evaluation activities) that focuses on providing confidence requirements for a product or service will be met.

Quality assurance sample:
A split or collocated duplicate samples analyzed by independent laboratories to monitor the quality (e.g., reproducibility) of sampling and analysis activities.

Quality Control:
Process intended to ensure a product or service meets a defined set of specifications or the requirements of the customer.

Quality improvement:
A management program for improving the quality of operations.

Quality management:
The aspect of the overall management system of the organization that determines and implements the quality policy. Quality management includes strategic planning, allocation of resources, and other systemic activities pertaining to the quality system.

Quality Management System or Quality System:
A structured and documented management system describing the policies, objectives, principles, organizational authority, responsibilities, accountability, and implementation plan of an organization for ensuring quality in its work processes, products, items, and services. The quality system provides the framework for planning, implementing, and assessing work performed by the organization and for carrying out required QA and QC.

Significant comment or issue:
In the context of an ITR or TR, a comment or issue that pertains to a (1) procedure, activity, or statement that is not in accordance with policy, guidance, or regulation; (2) a flaw that directly affects the overall success of a project, invalidates the project's conclusions or severely compromises the scientific defensibility of reported results; (3) a significant safety risk; (4) a misrepresentation or omission of information that substantively influences decision-making; (5) a substantial known or potential cost savings that does not significantly adversely affect the quality of the product or services provided; or (6) deficiencies or problems indicative of systematic quality problems that can adversely impair the outcome of future work if left uncorrected.

Technical Review:
A documented first-line, critical, technical review of contracted project work by a district that may entail an in-depth evaluation of documents, activities, material, data, or items (e.g., to verify accuracy, completeness, applicability and compliance with specifications).

Section III
Special Abbreviations and Terms
This section contains no entries.

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