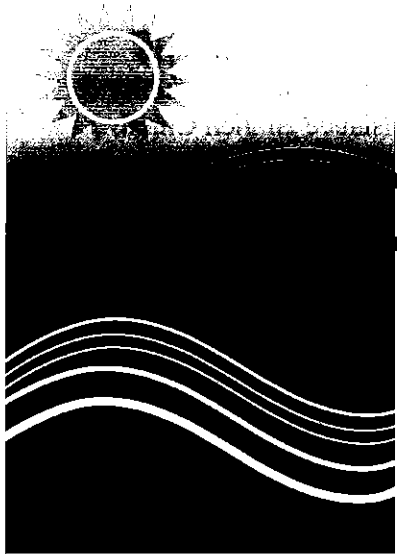


Connecticut Department of Energy and Environmental Protection

**2014-2018 Quality Management Plan for
Environmental Programs Funded by
The U.S. Environmental Protection Agency**



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
P R O T E C T I O N**

**79 Elm Street
Hartford, CT 06106-5127**

<http://www.ct.gov/deep>

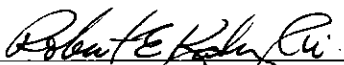
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Connecticut Department of Energy and Environmental Protection

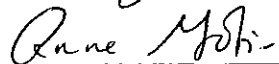
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Connecticut Department of
Energy and Environmental Protection

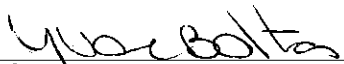
U.S. Environmental Protection Agency


Robert Kaliszewski, Chief Bureau of
Central Services


Date: July 8, 2015


Anne Gobin, Chief
Bureau of Air Management

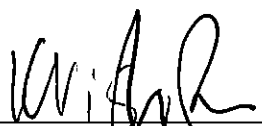
Date: July 8, 2015


Yvonne Bolton, Chief
Bureau of Materials Management
And Compliance Assurance

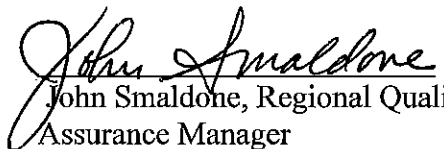
Date: June 30, 2015


Betsey Wingfield, Chief
Bureau of Water Protection Land Reuse

Date: 7/1/15

 11/3/15
Kristi Rea Grant, Tribal, Community &
Municipal Assistance Branch Chief

Date:


John Smaldone, Regional Quality
Assurance Manager

Date: July 27, 2015

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[Use web links below to access published material represented by Appendices A, B, C, E, F and G. Publication dates associated with web-based material at the time of this report's revision – May 2015 – are noted.]

Appendix A. *Overview of the EPA Quality System for Environmental Data and Technology* (November 2002)

Direct document link at <http://www.epa.gov/quality/qs-docs/overview-final.pdf> Accessed May 2015.

Appendix B. *EPA Requirements for Quality Management Plans-EPA QA/R2* (March 2001)

Direct document link at <http://www.epa.gov/quality/qs-docs/r2-final.pdf> Accessed May 2015.

Appendix C. *Annual Reporting of Quality System Progress* (January 2008)

Direct document link at <http://www.epa.gov/region1/lab/qa/pdfs/EQAGUI-QSReportTemplate0.pdf> Accessed May 2015.

Appendix D. DEEP Organizational Charts as of May 2015

http://www.ct.gov/dep/cwp/view.asp?a=2699&q=323352&depNav_GID=1511.

Appendix E. *EPA New England Quality Assurance Project Plan Program Guidance* (January 2010)

Direct document link at
<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CCcQFjAB&url=http%3A%2F%2Fwww.epa.gov%2Fregion1%2Ftab%2Fqa%2Fdocs%2FEPAQAPP-2005PG2.doc&ei=u65HVfbNKsrpsAwwi4DYDA&usg=AFQjCNHGwdQv3z0ryWZvI763QfxbbTIkVA&sig2=G44SYr5-OiWo-U4SnBaSFg&bvm=bv.92291466,d.b2w>
Accessed May 2015.

Appendix F. Example of a Connecticut State Government Job Description

Direct document link at
<http://das.ct.gov/HR/JobspecNew/JobDetail.asp?FCC=6926> Accessed May 2015.

Appendix G. Active DEEP Quality Assurance Project Plans (May 2015)

Direct document link at
http://www.ct.gov/deep/lib/deep/quality_assurance/dep_qapp_table_published_01-11.pdf
Accessed December 2014.

Appendix H. Remediation Quality System Status Report (April 2015) Pg. 37

Acronyms

APA	State Office of the Auditors of Public Accounts
BAM	Bureau of Air Management
BCS	Bureau of Central Services
BEST	Bureau of Enterprise Systems Technology
BETP	Bureau of Energy and Technology Policy
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response Compensation Liability Act
CWA	Clean Water Act
DAS	Department of Administrative Services
DEEP	Department of Energy and Environmental Protection
DMS	Document Management System
DQO	Data Quality Objectives
ECOS	Environmental Council of the States
EPA	Environmental Protection Agency
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
FY	Fiscal Year
FFY	Federal Fiscal Year
IT	Information Technology
ITAC	Information Technology Advisory Committee
LUST	Leaking Underground Storage Tank
MMCA	Materials Management Compliance Assurance
OIM	Office of Information Management
OPM	Office of Policy and Management

OPRA	Office of the Public Records Administrator
OSHA	Occupational Safety and Health Administration
PPG	Performance Partnership Agreement
PSA	Personal Service Agreement
PURA	Public Utilities Regulatory Authority
QA	Quality Assurance
QAPP	Quality Assurance Project Plans
QC	Quality Control
QMP	Quality Management Plan
QS	Quality System
RCRA	Resource Conservation Recovery Act
RFP	Requests for Proposal
RMLO	Records Management Liaison Officer
SDWA	Safe Drinking Water Act
SIMS	Site Information Management System
SOP	Standard Operating Procedure
TMDL	Total Maximum Daily Load
TSA	Technical System Audit
TSCA	Toxic Substances Control Act
UST	Underground Storage Tanks
WPLR	Water Protection Land Reuse

1. Introduction to DEEP's Quality Management Plan

Background

This document is the *Connecticut Department of Energy and Environmental Protection 2014-2018 Quality Management Plan (QMP) for Environmental Programs Funded by the U.S. Environmental Protection Agency (EPA)*. EPA requires that the Department of Energy and Environmental Protection (DEEP) have an approved QMP in place as a condition of receiving grant funding from EPA to support environmental programs.

The 2014-2018 DEEP QMP is considered approved and in effect once the original hardcopy version has been signed and dated by all DEEP and EPA officials listed on the Signature Page. This plan replaces DEEP's previous QMP, effective December 15, 2008. The 2015 plan will remain valid for up to five years (into 2019), by which time DEEP must prepare a new QMP and have it approved by EPA. This plan includes a list of specific objectives to be achieved within the life of the plan.

This plan contains information designed for use by both DEEP management and staff and EPA management and staff. For example, descriptions of DEEP's organizational structure should benefit EPA personnel, while information regarding EPA Quality Assurance requirements and guidance is designed to be a reference for DEEP personnel.

EPA requires DEEP to produce this QMP as part of EPA's broader requirement that all organizations receiving grant funding "establish and implement" a "Quality System" (QS) that applies to all relevant environmental programs. This requirement is summarized in the following quote from the "Frequent Questions" section of the EPA Quality System website (http://www.epa.gov/quality/qual_sys.html)

All EPA and non-EPA organizations conducting environmental programs on behalf of EPA which acquire, generate, compile, or use environmental data and technology are required to establish and implement a quality system. This includes work performed internally, under contracts, cooperative agreements, interagency agreements, State-EPA agreements, State, local, and Tribal financial assistants/grants (including Performance Partnership Grants and Agreements), research grants, and in response to statutory or regulatory requirements and consent agreements.

EPA defines a Quality System as "A structured and documented framework of an organization for its planning, implementing, documenting, and assessing work performed and for carrying out required procedures and activities for ensuring satisfaction in its work processes, products, and services." (From the "Glossary of Quality-Related Terms" section of EPA's QS website.) While EPA uses the formal term "Quality System" to describe this "framework," terms such as "Quality Assurance System" and "Quality Assurance Program" are commonly used to represent the same basic concept.

Note that EPA's QS requirements apply to the agency's own operations as well as those of non-EPA organizations such as DEEP. Much additional information related to the EPA Quality System can be found at the EPA Quality System website (see link above). A good starting point for learning more about EPA's approach to Quality Assurance is the *Overview of the EPA*

Quality System for Environmental Data and Technology (document link at <http://www.epa.gov/quality/qs-docs/overview-final.pdf>). This document is included as Appendix A in hardcopy versions of this QMP. This link also provides access to additional "Agency-wide Quality System Documents."

The primary EPA unit responsible for overseeing DEEP's compliance with EPA's QS policies is the EPA New England Quality Assurance Unit, affiliated with the EPA New England Regional Laboratory (NERL) located in North Chelmsford, MA. (On its website, NERL is also identified as the Office of Environmental Measurement and Evaluation.) The Quality Assurance Unit is a "multi-disciplinary group of chemists, scientists, environmental protection specialists, and a chemical engineer. The staff is responsible for assuring the quality of data used to make decisions in support of the Agency mission, and implementing and assessing the regional Quality system." (From the "Quality Assurance" section of the EPA New England Regional Laboratory website: <http://www.epa.gov/ne/lab/qa/index.html>.) Beyond mention of general EPA Quality-related requirements and guidance, most references to EPA in this plan refer to The EPA New England QA Unit (EPA NE QA). This unit is responsible for approving DEEP's Quality Management Plan.

EPA requires any organization subject to its Quality System requirements to prepare and submit for approval a Quality Management Plan. A QMP "identifies the organizational structure, policy and procedures, functional responsibilities of management and staff, lines of authority, and its processes for planning, implementing, documenting, and assessing all activities conducted under the organization's quality system" (from "Frequent Questions"). Approved QMPs may remain in effect for up to five years.

EPA has published QMP requirements in the document *EPA Requirements for Quality Management Plans - EPA QA/R2*, commonly referred to simply as "R2" (document link at <http://www.epa.gov/quality/qs-docs/r2-final.pdf> under heading "Specifications for non-EPA Organizations"). This document is included as Appendix B in hardcopy versions of this QMP.

EPA requires all QMPs to address ten standard Quality System-related elements:

- Management and Organization,
- Quality System Components,
- Personnel Qualifications and Training,
- Procurement of Items and Services,
- Documents and Records,
- Computer Hardware and Software,
- Planning,
- Implementation of Work Processes,
- Assessment and Response, and
- Quality Improvement.

DEEP's QMP follows this format in Sections 3 through 12. (The "Purpose" sentence at the beginning of each of these sections comes from R2.)

The EPA New England Quality Assurance Unit has been performing periodic Quality System assessments of New England state environmental agencies and other regional organizations subject to EPA's QS requirements, using each organization's current QMP as the primary

reference for determining whether an agency such as DEEP is adhering to its stated Quality System-related policies and procedures.

Quality Management Plans must be reviewed annually and the results of the review documented and sent to EPA. EPA NE QA has established certain annual Quality System documentation requirements in conjunction with the general annual review requirement. These requirements are covered in the document *Annual Reporting of Quality System Progress* (document link at <http://www.epa.gov/region1/lab/qa/pdfs/EQAGUI-QSReportTemplate0.pdf>). This document is included as Appendix C in hardcopy versions of this QMP.

Since EPA is subject to its own Quality System requirements, different sections of that agency must prepare their own Quality Management Plans. The QMP for EPA New England can be found under the Quality Assurance section of the EPA New England NERL website (document link at <http://www.epa.gov/region1/lab/qa/qmp/index.html>).

Characteristics of DEEP's QMP

DEEP's Quality Management Plan is designed in part to be a practical planning document that presents a basic blueprint for developing, improving, and refining useful and practical quality system elements within DEEP.

In the sections of this plan that emphasize policies and procedures (such as Documents and Records), the QMP references general agency policies and procedures that should be followed, EPA policies and procedures that should be followed, and any DEEP QS objectives to be met in the coming year.

This plan will be posted on DEEP's public website (<http://www.ct.gov/deep/>) once it has been approved. EPA requires that all QMPs be reviewed by the originating agency at least annually and revised or updated as necessary. All such changes will also be posted on the DEEP website. (As noted on the Title Page, a digital version of this document is published on DEEP's public website, at: http://www.ct.gov/deep/cwp/view.asp?a=2701&q=323452&depNav_GID=1651.)

Roslyn Reeps is DEEP's designated Quality Assurance Coordinator for environmental programs funded by EPA. She welcomes all questions, suggestions, and comments regarding this plan. She can be reached at:

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2. Introduction to DEEP's Quality System

DEEP established a decentralized Quality System (QS) prior to 2002 to meet EPA's QS requirements. This strategy is similar to the approach taken by several other New England states, particularly the Massachusetts Department of Environmental Protection. Within DEEP there is a decentralized Quality Assurance (QA) Agency coordination, and Bureau QA contacts who are assigned to coordinating and implementing the elements of the QMP.

Within its decentralized system, DEEP places much of its emphasis on QA at the program and project level. Specifically, the agency's QS focuses on programs and projects that EPA has identified as being subject to its QS requirements. These are the programs and projects that are required to have Quality Assurance Project Plans (QAPPs). Many DEEP staff associate EPA's QA program first and foremost with the requirement to prepare QAPPs and submit them to EPA for review and approval. QAPPs are one important component of QS as EPA defines them, and the projects and processes they describe are a basic building block in the development of DEEP's QS.

A QAPP is "a document that describes the intended technical activities and project procedures that will be implemented to ensure that the results of the work to be performed will satisfy the stated performance or acceptance criteria. The amount of information presented and the planned activities to ensure the value of the work will vary according to the type of study and the intended use of the data." (From the "Glossary of Quality-Related Terms" section of EPA's QS website.) EPA describes the relationship between a QMP and QAPPs as follows (from *EPA Requirements for Quality Management - EPA QA/R2*):

The Quality Management Plan may be viewed as the 'umbrella' document under which individual projects are conducted. The Quality Management Plan is then supported by project-specific QA Project Plans. A QA Project Plan is the 'blueprint' by which individual projects involving environmental data are implemented and assessed and how specific quality assurance (QA) and quality control (QC) activities will be applied during a particular project.

The following is a summary of the significant characteristics of DEEP's planned QS:

- The system will apply specifically to environmental programs funded by EPA "which acquire, generate, compile, or use environmental data and technology."
- Within those programs, system implementation will focus initially on the work undertaken through projects that require QAPPs. This includes projects that have QAPPs in development, under review, or approved and in effect at DEEP at any given time.
- Management and staff in the Environmental Quality Branch bureaus of Air Management (BAM), Materials Management and Compliance Assurance (MMCA), and Water Protection and Land Reuse (WPLR) will have the primary responsibility and authority for ensuring that projects within their bureau that require QAPPs have such plans developed and approved by EPA, and are managed in accordance with those plans (see Section 3 for a complete description of DEEP's organization). Bureau management and staff will also have the primary responsibility and authority for ensuring that other aspects of DEEP's QS are managed in accordance with DEEP's approved QMP.

- Each of the three bureaus will use QA Bureau Contacts to assist with implementing DEEP's QS. DEEP managers are involved even if the work is delegated down to staff. QA coordinator is the key contact with the Bureau Chiefs and vice versa. (see Section 3).
- Sets of specific QS objectives will be developed by DEEP and provided to EPA New England QA in the QMP. As a part of the QMP, the objectives will be disseminated within the agency. DEEP will perform internal assessments of these objectives to determine if and how these objectives are being met and will report the assessment results to EPA.
- The QS objectives for the 2014-2018 period are as follows:
 - update DEEP's Quality Assurance Policy Directive (see Section 3);
 - report any changes to the organizational structure of the BAM, MMCA, or WPLR to EPA New England QA as soon as new organizational charts are published (see Section 3);
 - continue Lean- Process Improvement (see Section 4);
 - coordinate with EPA to offer EPA QAPP development training for DEEP staff (see Section 5);
 - sponsor QMP and Quality System awareness training in conjunction with approval of the 2015-2019 DEEP QMP (see Section 5);
 - assemble all QAPPs expected to be active at/by the end of FY14 and post them on DEEP's intranet website (and converted to electronic format if necessary) (see Section 7);
 - develop and maintain a status matrix of pending and active QAPPS and post it on DEEP's intranet website, with updates reported to EPA New England QA annually (see Section 9); and
 - continue to develop Standard Operating Procedures (SOPs) through the DEEP Lean process (see Section 10).

3. Management and Organization

Purpose – To document the overall policy, scope, applicability, and management responsibilities of the organization's quality system.

Background

DEEP was established as an Executive Branch agency on July 1, 2011 with the consolidation of the Department of Environmental Protection, the Department of Public Utility Control, and energy policy staff from other areas of state government. Its chief executive officer, the Commissioner, is appointed by and reports to the Governor. At this time DEEP has about 900 fulltime employees, plus additional seasonal staff. Its operating budget for the current fiscal year is approximately \$145 million. Funding comes from multiple sources, including over \$31 million from "Federal and Other Activities."

DEEP is charged with conserving, improving and protecting the natural resources and the environment of the state of Connecticut as well as making cheaper, cleaner and more reliable energy available for the people and businesses of the state. The agency is also committed to playing a positive role in rebuilding Connecticut's economy and creating jobs – and to fostering a sustainable and prosperous economic future for the state.

The overarching goals of the agency are to:

- Integrate energy and environmental policies and programs in a more systematic, proactive and coherent manner to provide a better structure for decision-making and to build a sustainable and prosperous economic future;
- Bring down the cost of electricity to make Connecticut more competitive, promote energy efficiency, and encourage the development and use of clean energy technologies; and
- Unleash a renewed spirit of innovation for pollution control, conservation of natural resources, and management of Connecticut's parks and forests.

Statement of DEEP's Policy on Quality Assurance (QA)

DEEP has issued a formal policy statement regarding QA that includes references to EPA and DEEP's first QMP. This policy statement exists as an official DEEP Directive.

The Quality Assurance Policy Directive (2009), in its entirety, is included here. This directive is also available to DEEP staff online through the agency's intranet website.

Department of Environmental Protection DIRECTIVE (MANUAL CODE: 3130, D1)

SUBJECT: Quality Assurance Policy

PURPOSE: The mission of the Department of Environmental Protection (DEEP) is to preserve and enhance the environment for all of Connecticut's people. It is important to the success of our mission that staff use consistent and appropriate practices for data collection and analysis to provide a firm base for environmental program decisions. This directive informs staff of the standard of quality for environmental program data collection and use and provides guidance on appropriate actions to meet this standard.

POLICY: DEEP's quality assurance policy maintains that all environmental data collected, generated and processed is scientifically valid; of known precision and accuracy; sufficiently complete and representative for the intended purpose; comparable to data collections and analyses similar in scope and purpose; and legally defensible, as may be necessary for the intended purpose. The data and information used as a basis for environmental program decisions, *i.e.*, establishing environmental quality standards, emissions limitations, permit limits and resource management plans, shall be in a form that may be clearly and understandably presented to the public, including but not limited to, plans and guidance.

PROCEDURE:

1. Quality Management Plan.

The *Quality Management Plan (QMP)* provides guidance to agency staff when establishing and maintaining consistent and appropriate quality assurance, quality control and quality improvement for environmental data collection and analysis. DEEP developed the QMP as a means of documenting how it will plan, implement and assess the effectiveness of quality assurance and quality control operations as applied to environmental programs funded by the United States Environmental Protection Agency (EPA). Staff involved with environmental data operations for EPA-funded programs shall be familiar with and consult the QMP and conform their activities to its guidance. The QMP is available on DEEP's website.

2. Bureau Quality Assurance Management Lead.

The Air Management, Materials Management and Compliance Assurance, Water Protection and Land Reuse Bureaus have each assigned Quality Assurance Bureau Contacts to address QMP compliance efforts for their respective bureaus. DEEP's Quality Assurance Coordinator will coordinate the Bureau efforts to maintain consistent practices among programs and Bureaus.

3. Written Plans and Guidance.

DEEP's data quality management efforts will follow written plans and guidance, which each EPA-funded program must generate. All staff data operations shall conform to the appropriate plan and guidance documents.

4. State and Federal Laws and Requirements.

The DEEP quality assurance system will be maintained in accordance with applicable state and federal laws and rules, standards, guidance, contractual requirements, and sound management practices.

Issued by: /S/Commissioner Robert Klee

Date: TBD

Special Instructions: Replaces directive 3130 D.1 dated 4/14/05.

Distribution: Electronic

Organization

DEEP has been described as a "super agency" because its mandate includes responsibilities that in other states are often handled by multiple agencies. The agency's basic organizational structure reflects its scope of duties. An organizational chart of DEEP's basic structure, reproduced from DEEP's public website, is included on the following page.

DEEP has three main branches, Environmental Quality, Environmental Conservation and Energy. (Note that in the organizational chart reproduced here the three main branches are not identified as "Environmental Quality," "Environmental Conservation" and "Energy," but rather by the bureaus that constitute each branch.) The Environmental Quality Branch includes the Bureaus of Air Management (BAM), Materials Management and Compliance Assurance (MMCA), and Water Protection and Land Reuse (WPLR). The Environmental Conservation Branch includes the Bureaus of Natural Resources and Outdoor Recreation. The Energy Branch includes the Bureaus of Energy Technology and Policy (BETP) and the Public Utilities Regulatory Authority (PURA). Branches are led by appointed Deputy Commissioners who report to the Commissioner. Each bureau, in turn, is headed up by a Bureau Chief and consists of multiple divisions managed by division directors. The typical division consists of multiple programs or similar subunits, each with its own supervisor and staff. Most divisions also include one or more assistant directors or equivalent positions; as the name implies, assistant directors typically report to division directors, but there is much variation as to where they fit into the organization.

In addition to the three main branches, DEEP organizational structure includes the Office of the Commissioner, which consists of the Offices of Chief of Staff, Adjudications, and Legal Counsel, provides administrative management, staff assistance, and ancillary service to aid the Commissioner and Bureau Chiefs in their efforts to carry out the mission of the agency. In addition, the Bureau of Central Services provides a wide array of services including Policy, Planning and Program Development, Information Management, Environmental Justice, Engineering and Field Support, Financial Management, Human Resource Management and Purchasing.

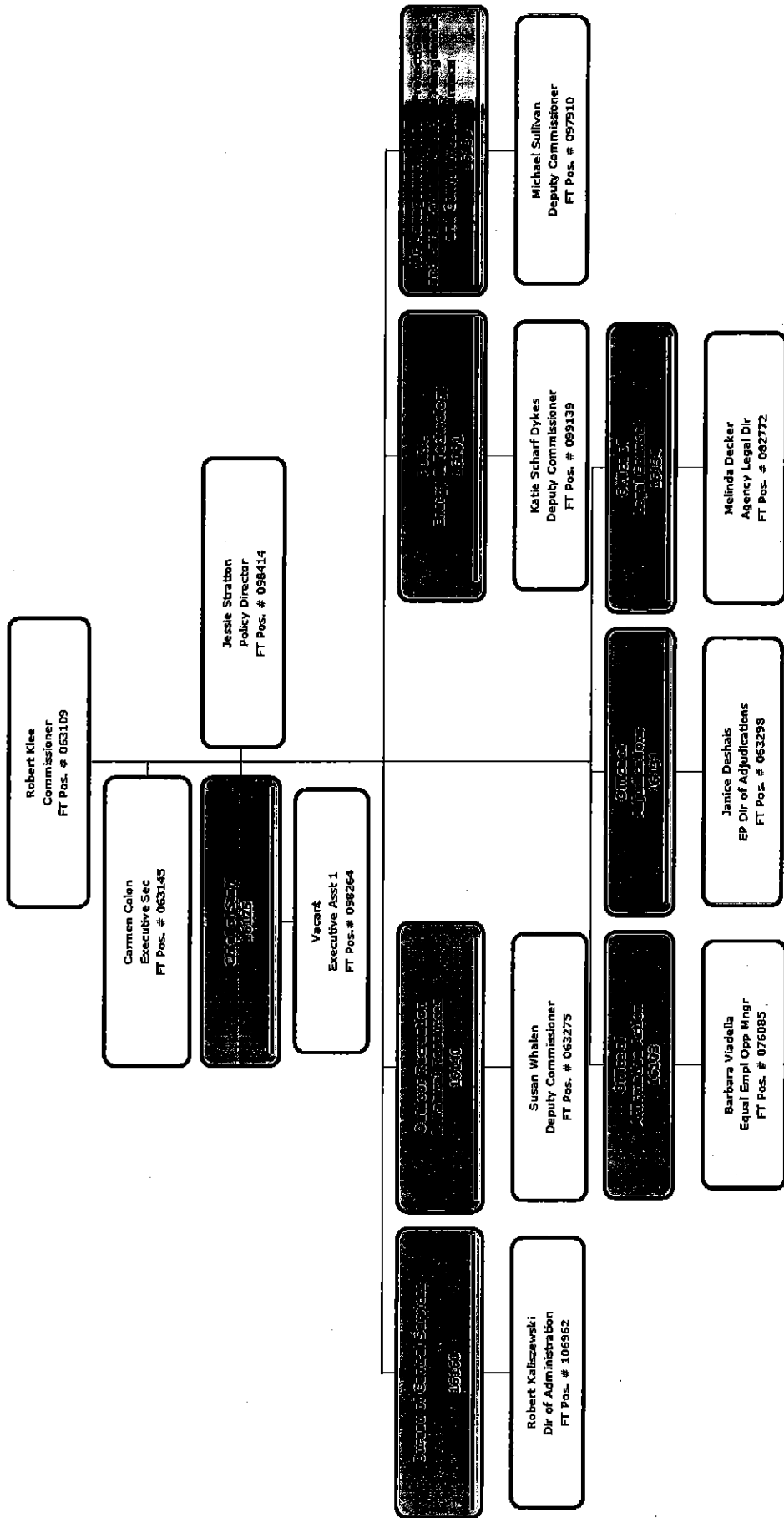
More information can be obtained about the functions and responsibilities of the various bureaus and offices within DEEP by viewing "The Things We Do for You" page of the DEEP public website:

http://www.ct.gov/deep/cwp/view.asp?a=2690&q=322454&deepNav_GID=1511#DeputyAWW. (Note that here the Deputy Commissioner for Environmental Quality is identified as the Deputy Commissioner for "Air, Waste, and Water.")

The Commissioner's senior staff is called the Commissioner's Cabinet. It consists of the Commissioner's Chief of Staff, the Deputy Commissioners for Environmental Quality, Environmental Conservation and Energy, the eight Bureau Chiefs, the Agency's Legal Counsel, PURA Chairman, Policy Director and Director of Adjudications, for a total of 17 individuals, including the Commissioner.

A more comprehensive set of current organizational charts for the agency (current as of May 2015) is included as Appendix D. The DEEP programs that are directly subject to EPA's quality system requirements are all within the Environmental Quality Branch (Bureaus of Air Management, Materials Management and Compliance Assurance, and Water Protection and Land Reuse). In addition, programs within the Commissioner's Office provide support services that are relevant to the QMP. Therefore the organizational charts included for these parts of DEEP show the entire structure, while detailed charts for the Bureaus of Natural Resources, Outdoor Recreation, BETP and PURA have been omitted.

Department of Energy and Environmental Protection Office of the Commissioner DEP43100-16100



Quality Assurance Roles

Quality Assurance Coordinator:

DEEP has a designated Quality Assurance Coordinator for environmental programs. QA coordination is handled by the Office of Planning and Program Development. As illustrated in the previous organizational chart, the Office of Planning and Program Development is one of the independent offices that make up the Bureau of Central Services (BCS) within the Office of the Commissioner. The other offices of BCS include Division of Information Technology, Financial and Support Services (includes HR), which are critical to the tenets of the QMP. It is separate and distinct from the Branch of Environmental Quality. QA coordination is directed by the Chief of Central Services, who reports directly to the Commissioner, and, as previously noted, is a member of the Commissioner's Cabinet.

The QA Coordinator is DEEP's primary point of contact between the agency and EPA on issues related to quality assurance. This individual is responsible for fulfilling DEEP's basic Quality System reporting obligations to EPA. The QA Coordinator will also have the lead responsibility for accomplishing the DEEP annual Quality System Objectives.

QA Coordinator:

Roslyn Reeps is an Environmental Analyst in the Office of Planning and Program Development, who reports directly to a Director and Chief of the Bureau of Central Services. This interdisciplinary office is uniquely suited to coordinate quality assurance due to the emphasis on planning, finance, information management, information technology and human resources.

QA Bureau Contacts:

The QA Coordinator will work with contacts affiliated with the three bureaus in the Environmental Quality Branch to implement DEEP's Quality System, specifically the annual Quality System objectives. Bureau QA contacts duties can include, but are not limited to performance audits and recommendations of changes and improvements. The QA coordinator and Bureau Contacts will meet on a regular basis to share best practices. At the present time each branch Bureau Chief has identified two staff members to serve as contacts, for a total of six staff members.

As of [June 23, 2015], the QA Bureau Contacts are as follows:

Air Management Bureau:

Susan Amarello (Non-monitoring programs)
Peter Babich (Monitoring programs)

Materials Management and Compliance Assurance Bureau:

Gilbert Richards (Emergency Response and Spill Prevention Division)
James Creighton (Permitting and Enforcement Division)

Water Protection and Land Reuse Bureau:

Baffour Kyei (Remediation Division)
Christine Olsen (Planning and Standards Division)

If the need exists, individual Bureau Chiefs will define specific duties for contacts, particularly as they relate to assisting Project Managers (see below) in meeting QA requirements associated with environmental data projects. This may be useful in situations where a program must manage large number of QAPPs. Bureau Chiefs may identify additional contacts.

Project Managers:

“Project Manager” is a formal term used by EPA New England QA in the document *EPA New England Quality Assurance Project Plan Program Guidance* (document link under heading “EPA New England Documents – Planning” at previous link). The role of a Project Manager, as defined by EPA New England QA:

The project manager is responsible for directing, coordinating, and overseeing all project activities for the Lead Organization [DEEP in this case]. He/she is responsible for submitting the QAPP, QAPP amendments, revisions and annual review letters to appropriate personnel, with sufficient lead time, for review and approval ... The project manager ensures that all technical issues identified during QA reviews are satisfactorily addressed and documented prior to beginning of field work.

Project Managers are identified in individual QAPPs. DEEP’s QMP makes numerous references to Project Managers.

Environmental Data Programs

The two tables on the following pages represent DEEP environmental data programs that are funded by EPA and that are subject to EPA’s Quality System requirements, either by virtue of being part of the current Performance Partnership awarded to DEEP from EPA, or because they are funded by separate EPA grants that contain specific Quality Assurance language.

EPA program grants to DEEP combined under the Performance Partnership Grant (PPG)

- Titles and Authorities from the FFY (federal fiscal year) 2014-2017 CT DEEP/EPA Region 1 Environmental Performance Partnership Agreement (PPA).
- Lead DEEP Bureau and Division from multiple sources.

Federal Program Title/ Federal Authority	Lead DEEP Bureau	Lead DEEP Division
Air pollution control [Clean Air Act (CAA) - Section 105]	Air Management	Bureau Chief
Water pollution control [Clean Water Act (CWA) Section 106]	MMCA/ WPLR	Permitting and Enforcement (MMCA) and Planning and Standards (WPLR)
Non-point source management [CWA Section 319]	WPLR	Planning and Standards
Safe Drinking Water Act (SDWA) [Underground Injection Control SDWA Section 1443b]	MMCA	Permitting and Enforcement
Hazardous waste management [Resource Conservation and Recovery Act (RCRA) Section 3011]	MMCA	Engineering and Enforcement
Underground storage tanks [Solid Waste Disposal Act (SWDA) Section 9010 (USTs enforcement)]	MMCA	Emergency Response and Spill Prevention
Polychlorinated Biphenyls (PCB) [Toxic Substances Control Act (TSCA)]	MMCA	Emergency Response and Spill Prevention
Pesticides [Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)]	MMCA	Engineering and Enforcement

Additional EPA program grants to DEEP that contain specific language related to Quality Assurance (typically a section under "Programmatic Conditions" that references QAPPs and the agency's QMP)

- Titles and Authorities, Funding Amounts, and Notes from the CT DEEP Bureau of Financial and Support Services, Financial Management Division.
- Lead DEEP Bureau and Division from multiple sources.

Federal Program Title/ Federal Authority	Lead DEEP Bureau	Lead DEEP Division
Air Fine Particulate Ambient Monitoring [CAA, Sec. 103]	Air Management	Planning and Standards
Superfund, Pre Remedial [CERCLA Sec. 104]	WPLR	Remediation
Superfund, Remedial [CERCLA Sec. 104(d)(1)]	WPLR	Remediation
Brownfields Response Program [CERCLA Sec. 128(a)]	WPLR	Remediation
Water Quality Planning [CWA, Sec. 604(b)]	WPLR	Planning and Standards
Long Island Sound Study CWA, Sec. 119(d)	WPLR	Planning and Standards
Non-point source management CWA Section 319	WPLR	Planning and Standards
Total Maximum Daily Loads (TMDL) Support CWA Sec. 104(b)(3)	WPLR	Planning and Standards
Leaking Underground Storage Tank (LUST) Trust [SWDA Sec. 2007(f)(2) & 8001 (a) & (c)]	MMCA	Emergency Response and Spill Prevention
LUST Prevention Assistance Agreement [SWDA Sec. 9011]	MMCA	Emergency Response and Spill Prevention
Pollution Prevention -Pollution Prevention Act of 1990, Sec.6605	BCS	Office of Planning and Program Development

4. Quality System Components

Purpose – To document how an organization manages its quality system and defines the primary responsibilities for managing and implementing each component of the system.

EPA's *Requirements for Quality Management Plans* document (R2) lists the following as standard components of any organization's Quality System:

- Quality system documentation,
- Annual reviews and planning,
- Management assessments,
- Training,
- Systematic planning of projects,
- Project-specific quality documentation, and
- Project and data assessments.

DEEP has identified four additional components of its particular Quality System:

- Standard agency policies and procedures,
- Agency integrated information systems,
- Professional Development, and
- Continuous Process Improvement (Lean).

Standard Components

Quality system documentation:

DEEP's Quality Management Plan is the agency's basic Quality System documentation. The agency's Quality Assurance Coordinator prepares the QMP and circulates it for review within the Bureaus of Air Management, Materials Management and Compliance Assurance, and Water Protection and Land Reuse.

Annual reviews and planning:

DEEP carries out annual reviews and updates of its Quality Management Plan, as required by EPA.

Management assessments:

Managers are involved in the QA process even if the work is delegated down to staff. The QA coordinator is the key contact with the Bureau Chiefs and vice versa.

DEEP bureaus, divisions and programs conduct a variety of reviews and assessments that relate in different ways to data quality. Reviews and assessments are done on a project specific basis, per the project QAPP. For example, WPLR conducts annual self-audit/reviews on such projects as "Beach Monitoring and Notification Program for Connecticut Coastal Beaches" (Planning and Standards Division) and the Remediation Quality System Status Report, an annual self-assessment (Appendix H).

Training:

The DEEP current administration has a strong commitment to staff training and professional development. Agency resources have been committed to staff training, including the formation of an agency-wide Professional Development Team, whose mandate includes coordinating necessary training for staff. This training supports EPA's ten standard quality system-related elements (see Section 1). Specifically, this training includes development of skills related to process improvement, organization, project management, supervisory capabilities and decision-making.

For QAPP-specific training, individual program and project managers are principally responsible for determining staff training needs and seeing that those training needs are met.

Systematic planning of projects:

Managers and staff responsible for DEEP's environmental programs should be familiar with the planning that's recommended in conjunction with the development of Quality Assurance Project Plans. Specifically they should be familiar with the EPA document *Guidance on Systematic Planning using the Data Quality Objectives Process – QA/G4*

Project-specific quality documentation:

Individual Quality Assurance Project Plans (QAPP) constitute DEEP's basic project-specific quality documentation. They are prepared and submitted for approval whenever required by EPA and revised as necessary to remain accurate and up-to-date.

Project and data assessments:

Reviews and assessments are done on a project specific basis, per the project QAPP. Consistent with DEEP's decentralized Quality System structure, individual Project Managers are responsible for assuring that project and data assessments called for in individual QAPPs are carried out and documented, and corrective steps taken when necessary. The QA Agency coordination is kept apprised of progress on QAPPs from Bureau contacts.

There is a process as to how updated or revised documents are communicated. For example, in the Remediation division, the QA contact receives managerial approval and sends the information to a staff person who is in charge of emailing the information to DEEP staff, the Remediation Roundtable, LEP listserv, labs, the Environmental Bar and posts the change to the website.

Additional Components

Standard agency policies and procedures:

Wherever practical, DEEP will use existing mechanisms, such as standard agency policies and procedures, to further the objectives of its Quality System. These standard policies and procedures are documented throughout this QMP (e.g., Remediation Reasonable Confidence Protocols). DEEP also uses continuous process improvement or Lean, to develop and implement SOPs throughout the agency.

Reasonable Confidence Protocols:

The Remediation Standard Regulations, sections 22a-133-1 to 22a-133k-3 of the Regulations of Connecticut State Agencies (RSRs), include numeric criteria in Appendices A through F which are used to determine if a potential risk to human health or the environment may exist. The results of analyses performed on environmental media are used to determine if remediation is needed. Due to the nature of environmental media, limitations of analytical methods, characteristics of analytes, and human error, the results of environmental analysis may contain an element of uncertainty and in some cases may be significantly biased, and therefore may not be representative of the actual concentrations of the analytes in the environmental media. Thus, an evaluation of the quality of the analytical data in relation to its intended use is important in order for the environmental professional to make decisions which are supported by data of known and sufficient quality.

To assist responsible parties and environmental professionals in evaluating the quality of analytical data in relation to its intended use, the Department is providing the information below:

The guidance document titled Laboratory Quality Assurance Quality Control Reasonable Confidence Protocols, effective November 2007 and revised December 2010, provides information on laboratory quality control and quality control assurance and the Reasonable Confidence Protocols (RCPs). The RCPs are analytical procedures that include specific laboratory Quality Assurance and Quality Control (QA/QC) criteria that produce analytical data of known and documented quality. RCPs have been developed for twenty of the most commonly used analytical methods, and RCPs may be developed for other methods in the future.

Laboratory Quality Control Assurance and Quality Control, Data Quality Assessment and Data Usability Evaluation Guidance Document:

The guidance document titled Laboratory Quality Control Assurance and Quality Control, Data Quality Assessment and Data Usability Evaluation Guidance Document (DQA/DUE Guidance), effective May 2009 and revised December 2010 - There are many ways to evaluate the quality of analytical data in terms of precision, accuracy, representativeness, comparability, completeness and sensitivity in relation to the intended use of the data. Precision, accuracy, representativeness, comparability, completeness and sensitivity are collectively referred to as the PARCCS parameters. This guidance document describes a DEEP- accepted, two-step process for data evaluation. The first step in the process consists of an assessment of data quality. The second step is an evaluation to determine whether the data can be used to support the decisions that will be made using that data. Use of this guidance provides consistency in evaluation and presentation of data quality information that will facilitate review. If an alternative process is used, such a process should be documented in order to explain the thought process and may involve a commitment of significant resources to demonstrate that the data is of known and sufficient quality and is usable relative to its intended purpose.

Agency integrated information systems:

DEEP has invested substantial funding and staff resources over the last several years to develop SIMS, the Site Information Management System. SIMS evolved out of DEEP's participation in EPA's One-Stop initiative. As the name implies, the vision behind SIMS is to eventually integrate all agency information associated with a particular site of interest to the agency (such as a facility with active permits from different programs) within a single information system available to all DEEP staff and eventually the public. Additional information systems are currently under development that build upon and leverage the initial version of the system. Of particular relevance to Quality Assurance is the Ambient Water Quality Data Exchange project.

DEEP's latest update to integrated information systems builds is an electronic document management taxonomy and system for all DEEP documents, including DEEP's Public Records Center. This system will allow instant DEEP and public access to all non-restricted documents. This system will allow data to be more publically transparent and substantially reduce Freedom of Information Act requests and processing time.

DEEP has also invested in electronic monitoring reporting. This system started with water discharge monitoring and will be extended to other programs. Electronic reporting allows for better quality data from permittees by using smart forms and eliminating paper to electronic database transcription errors.

Continuous Process Improvement (Lean):

In 2007 DEEP began a "Lean" Initiative, based on the process improvement approach and set of methods of the same name. A DEEP Lean Implementation Team has been formed, and as of

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December 2014, six-five Lean Project Teams from the Environmental Quality Branch have received training and are working on their project implementation plans.

In addition to a focus on streamlining processes and developing SOPs, within the last several years, DEEP has proposed long-term innovations, such as electronic-government (E-gov) and statutory and regulatory recommendations.

In 2013, a state-wide Process Improvement Steering Committee led by the Office of Policy and Management and was formed to foster inter-agency Leans and institutionalize Lean in state government. Each agency has a designated Lean coordinator, and these coordinators attend monthly meetings and trainings.

Annual Quality System Objectives:

These are referenced in Section 2 and throughout this plan.

DEEP will continue Lean-Process Improvement, which results in continuous improvement of quality systems, including SOP development and streamlining.

5. Personnel Qualification and Training

Purpose – To document the procedures for assuring that all personnel performing work for an organization have the necessary skill to effectively accomplish their work.

General Personnel Qualifications

DEEP, as an executive branch state agency, must adhere to an extensive set of laws, regulations, and other policies and procedures that control the hiring, ongoing employment, and promotion of its employees. The Department of Administrative Services (DAS) is the lead state agency for all personnel-related policies and procedures. Within DEEP, the Human Resources Division in BCS is the lead office for personnel-related policies and procedures.

All executive branch employees have standardized job titles (often referred to as class titles or positions) and all job titles have associated Job Descriptions. DAS develops and publishes these generic Job Descriptions for all classified positions within the executive branch. The descriptions include "Example of Duties," and "Minimum Qualifications Required." Job Descriptions for similar groups of classes are periodically reviewed and revised, typically by a committee that includes representatives from agencies that employ significant numbers of staff in those classes.

All DAS job descriptions are accessible online at (<http://das.ct.gov/HR/JobspecNew/JobSearch.asp>) The DAS Job Description for "Environmental Analyst 1," a common entry-level professional position at DEEP, is included as Appendix F.

When DEEP receives approval to fill a particular position, the appropriate program or division staff prepare a Job Announcement, which is then reviewed by Human Resources and published on the DAS website. Job Announcements identify the name of the classified position to be filled and provide a "Description of Duties," "Experience and Training" requirements, and other elements that pertain to the particular job being advertised. The content of these individual Job Announcements must be consistent with the information and requirements contained in the generic DAS Job Descriptions, but the details are much more specific, as they are tailored to the requirements of particular jobs. The Job Announcement format allows DEEP to specify more detailed hiring requirements related to "Experience and Training," and "Special Requirements."

All "Current [State] Job Opportunities," as posted by DAS, are accessible online at (<http://das.ct.gov/fp1.aspx?page=104>)

Agency Training Policy

DEEP issued a directive related to training in February of 2008. The directive (5541 D1) is titled "Staff and Organization Development and Job Enhancement through Training and Career Services."

The basic policy reads as follows:

POLICY: The Department is committed to employ and retain talented staff by supporting and providing meaningful on-the-job and other training opportunities so employees may continuously improve their performance and contribute to the agency's mission of protecting the environment and conserving natural resources. To accomplish this goal, the Department's

Human Resources Division, in conjunction with the Office of Affirmative Action, has developed a comprehensive staff and organization development program.

Additional excerpts from the directive:

- Supervisors and employees are encouraged to work together to design the most appropriate training plans for the individuals' job duties, skills, abilities, and career goals.
- Managers and supervisors are encouraged to support employees' attendance and on-the-job application of both mandatory and elective training relating to their primary job responsibilities, logical career progressions, upward mobility, lateral, or other opportunities, job enrichment, legal requirements, or certification or licensure maintenance requirements.
- Employees are strongly encouraged to take personal responsibility for their own education, training, and career growth through active participation in various development opportunities both within and outside the Department, including financing some of the programs themselves.
- At a minimum, supervisors and managers are strongly encouraged to discuss employees' staff development issues during required annual performance appraisal reviews per current agency procedures and collective bargaining agreements.
- Within one week of receiving proof of completion of training, employees should submit copies of their certificates of completion or other attendance documents to DE[E]P Human Resources for inclusion in their personnel files, computer databases, and their bureau/office training contacts' records, if applicable.

The directive also states that DEEP employees "are allowed" up to 35 to 40 hours a year (depending on contractual work week hour totals) "to pursue career development opportunities."

DEEP and the state publicize and make available certain training opportunities for DEEP employees, and managers and staff have the ability to seek out other training that's relevant to their work.

Examples of training promoted by DEEP or the state include:

- An extensive selection of "In-Service" classes offered through a partnership between DAS and the Connecticut Community College System.
- Information technology training offered by a group of commercial providers on contract with BEST. DEEP staff can take regularly scheduled classes conducted by these vendors at a reduced rate, or set up custom classes. DEEP has an information technology training facilities at its Hartford headquarters and New Britain field location.
- Training coordinated by DEEP's Health and Safety unit, including classes "required by a specific OSHA, EPA, FRA or other Regulation" or required "under the General Duty Clause of the OSHA Act."
- Lean training is offered to all DEEP staff, and to date greater than 650 staff have taken the basic training and forty staff members have received advanced Lean training.
- The newly formed Professional Development Team surveys DEEP staff for training needs and coordinates subsequent professional development training, including areas such as communication and project management.

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- Other DEEP sponsored training. DEEP periodically sponsors training on a variety of subjects. Announcements about upcoming agency-sponsored training opportunities typically are made via email.

Funds for most training and associated professional development must come from program or division budgets, grants, union funds, etc. Some divisions within DEEP include training as a line item in their individual annual budgets, but there is no agency requirement to do this. As necessary and as a part of the agency-wide professional development initiative, the agency pays for certain training with cross-agency relevance, rather than requiring individual programs to provide funding.

Personnel Qualifications and Training for DEEP

Project Managers for individual environmental data projects are responsible for identifying and adhering to any necessary special training or certification requirements associated with a project subject to EPA's Quality System requirements. The required format for a standard Quality Assurance Project Plan includes a specific element within the "Project Management" section named called "Special Training/Certification" (see Section 9), which should be used to document any such needs.

DEEP Quality System Objectives: - Sponsor QMP and Quality System awareness training in conjunction with approval of the 2015-2019 DEEP QMP. Coordinate with EPA to offer EPA QAPP development training for DEEP staff.

6. Procurement of Items and Services

Purpose – To document the procedures for purchased items and services that directly affect the quality of environmental programs.

General Procurement Process

DEEP, as an executive branch state agency, must adhere to an extensive set of laws, regulations, and other policies and procedures in any situation where it intends to pay another party to deliver a product or perform some kind of service. As an example, a single relevant document from the Office of Policy and Management (OPM), titled “Procurement Standards: For Personal Service Agreements and Purchase of Service Contracts” is 49 pages long -

http://www.ct.gov/opm/lib/opm/PSA_POS_Procurement_Standards_5-22-14.pdf. Objectives behind these practices are intended to encourage open and fair competition, safeguard the state’s financial resources, eliminate any opportunity for favoritism, and promote certain government policies.

Procedures for the procurement of items and services can be divided into three basic categories:

- The purchase of any kind of information technology (IT) equipment and service, including procurements that require Requests for Proposals (RFPs) or procurements that require negotiating and approving a contract.
- The purchase of all other standard goods and services (typically referred to as “buying off contract,” meaning the ability to take advantage of an existing state contract).
- The procurement of one-of-a-kind, non-IT-related items and services. Such procurement may require an RFP. It may require approving a contract or similar document. Included in this category are grants awarded by DEEP and formal agreements between DEEP and other state agencies and other government entities that involve funding originating with DEEP.

Authority for the purchase of IT equipment and services by executive branch agencies resides with the Bureau of Enterprise Systems and Technology (BEST), a bureau within DAS. BEST delegates some purchasing authority to individual agencies such as DEEP. Additional details about prescribed practices for the purchase of IT equipment and services are included in Section 7.

Authority for the purchase of all other goods and services by executive branch agencies resides with DAS. DAS delegates some purchasing authority to individual agencies such as DEEP. The DAS Procurement website (<http://das.ct.gov/cr1.aspx?page=8>) contains a range of information concerning state purchasing procedures.

Contracts developed for the procurement of specific items or services must adhere to a set of rules and a set of review and approval steps, that both involve multiple state agencies besides DEEP: DAS, OPM, the Attorney General’s Office, and the State Comptroller’s Office. One type of standard contract for the provision of services is called the Personal Service Agreements, or PSA. OPM maintains a website that provides details about requirements for PSAs - http://www.ct.gov/opm/cwp/view.asp?a=2982&q=383012&opmNav_GID=1806.

Within DEEP, the authority for the procurement of standard goods and services lies with the “Purchasing Unit,” part of the Bureau of Central Services. The Purchasing Unit processes all approved agency purchase requests. Additional authority for the procurement of IT-related goods and services exists within the Office of Information Management (see Section 7).

The DEEP authority for processing contracts and grants issued by DEEP lies with the Financial Management Division of the Bureau of Central Services. As with purchase requisitions, individual program staff draft contract details. The draft contract language is approved by a division director or designee and then processed by the Financial Management Division. All contracts, regardless of the dollar amount, must be reviewed and signed by the Commissioner or appropriate Deputy Commissioner. All contracts are subject to some level of review by other state agencies.

Procurement of items and services, as with many other prescribed management practices within DEEP, are covered by specific agency directives. The following directives address procurement:

- Manual/Code 5310/D1: Procurement and Invoicing of Goods and Services
- Manual/Code 5260/D1: Processing Contracts (a.k.a. Personal Service Agreements) and Grants (issued by DEEP)

Requests to procure specific items or services originate within individual DEEP program units or divisions. Staff associated with a particular unit needing an item or service are responsible for preparing written purchase requests or other documents that accurately specify the unit's particular item or service requirements, plus a justification for the purchase. Such requests include all associated technical and quality requirements.

Every request to procure an item or service undergoes a formal review and approval process within DEEP. For many types of requests this process has been automated as part of the "Core-CT" state information management system (see below). The steps of the review and approval process vary depending on factors such as the cost and type of item or service being requested and the number of vendors considered qualified to provide the item or service. At a minimum, purchase requests must be reviewed and approved by division directors or their designees to ensure that they accurately represent the item or service needed by the program unit. Expensive or complex procurement proposals are typically subject to multiple review and approval steps and often require the involvement of other state agencies. These additional steps are designed to ensure that the request is complete and accurate, that it can be paid for, and that it adheres to agency and state policies and standards. The request can be approved, denied, or modified at any step in the review and approval process.

Purchase requests for all standard goods and services by all executive branch agencies are entered into an automated statewide procurement system that's part of "Core-CT," Connecticut's "integrated financial, human resources and payroll system." To streamline the selection and ordering process for standard products, DAS has integrated a set of online catalogs into the Core-CT system. DAS also posts all approved state purchasing contracts online – (<http://das.ct.gov/cr1.aspx?page=12>). This information makes it easier for DEEP to purchase from existing contracts.

Records of all goods and purchases requested, approved, and purchased through the Core-CT system are retained in the system. DEEP staff with appropriate system access privileges can access this information. However, certain supplemental information associated with purchase requests may only exist in hardcopy form.

OPM has established a separate automated system for processing and managing information associated with PSAs and similar contracts.

Responses to solicitations typically take the form of vendor responses to bid solicitations (RFPs) or responses to grant announcements. RFPs must state the general criteria to be used to evaluate bid

responses and should include all relevant technical and quality requirements. In cases when an RFP is used for procurement, a committee is formed for the purpose of reviewing the responses and making an award recommendation, using written score sheets with entries that correspond to the evaluation criteria.

Procurement of Items and Services for DEEP Environmental Programs

DEEP follows the state procurement procedures. Project Managers for individual environmental data projects are responsible for identifying and adhering to any necessary special requirements for purchased items or services associated with a project subject to EPA's Quality System requirements.

7. Documents and Records

Purpose – To document appropriate controls for quality-related documents and records determined to be important to the mission of the organization.

Overview - Documentation and the EPA Quality System

Documentation is a key element of EPA's Quality System requirements and guidance. This is most evident in the agency's requirement for both EPA and external organizations to prepare and maintain Quality Management Plans and Quality Assurance Project Plans, but the importance of documentation extends to many other aspects of the system.

General Records Management Policies and Procedures

DEEP, as an executive branch state agency, must adhere to a set of laws, regulations, and other policies and procedures that control how it manages documents and records, both paper and electronic. The Office of the Public Records Administrator (OPRA; <http://www.ctstatelibrary.org/organizational-unit/public-records>), part of the Connecticut State Library, is the lead state agency for all policies and procedures related to public records. The State Freedom of Information Commission also plays a role in establishing policies and procedures related to public records (<http://www.ct.gov/foi/site/default.asp>). Within DEEP, three offices share responsibility for overseeing policies and procedures related to public records: the Office of Planning and Program Development and the Office of Information Management, both within BCS, and the Office of Legal Counsel, within the Commissioner's Office.

DEEP manages its public records through its Records Retention program and several Records Retention directives. DEEP's Records Retention Program directive includes the agency's basic Records Retention policy, which states the following: "In accordance with the Connecticut General Statutes 11-8 and 11-8a, employees of the Department of Environmental Protection may not destroy any public record without prior approval from the Office of the Public Records Administrator" (Directive 5000 D8).

As required by OPRA, DEEP has a designated Records Management Liaison Officer (RMLO) located in the Office of Legal Counsel and approximately two dozen "Sub RMLOs" representing all major agency programs or divisions, who function as liaisons between their units and the agency RMLO.

In addition to the primary Records Retention Program directive, several other relevant directives exist:

- Security and Access to the DEEP Records Center located at 79 Elm Street, Hartford, CT (Security and Access to DEP Records Manual Code 5000 D 13, 2/6/08)
- Photocopying DEEP records from bureaus/programs in the DEEP Records Center (Photocopying DEP Manual Code 5000 D 14, 2/6/08)
- Purging Records Prior to Filing and Storage (Manual Code 5000 D 12, 2/6/08).

The "DEEP Records Center," mentioned above, is a facility managed by OIM that houses many types of DEEP records and makes them available to the public and DEEP staff in a secure environment. While Records Center has traditionally managed paper documents, DEEP is carrying out an ambitious initiative to transition to a sophisticated digital Document Management System (DMS) that will make the information available over the web to the public and DEEP staff.

Document and Record Management for DEEP Data Projects

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Project Managers for individual environmental data projects are responsible for managing QAPPs and all other documents and records associated with individual environmental data projects. The required format for a standard QAPP includes a specific element within the "Project Management" section called "Documents and Records," which are used to document how such materials should be managed. Managerial review occurs as a part of all report writing.

QAPPs for each DEEP Bureau are further managed and maintained by the QA Bureau contacts. A central repository of up-to-date QAPPs are located on our intranet. There are state record retention policies, which are governed by OPRA (see above for more information), however no specific section applies to QAPPs.

8. Computer Hardware and Software

Purpose – To document how the organization will ensure that computer hardware and software satisfies the organization's requirements.

General Management of Information Technology and Systems

The general management and oversight of computer hardware and software resources within DEEP is shaped by a set of policies and procedures specific to DEEP, additional state government policies and procedures, and corresponding organizational structures and authorities.

The Office of Information Management (OIM) oversees DEEP's information technology infrastructure and information management resources. The office is divided into a number of small functional units designed to focus on specific aspects of information technology and management (see OIM's organizational chart, Appendix D). OIM is ultimately responsible for all aspects of providing and supporting the appropriate hardware and software resources needed to conduct the agency's many tasks, in a fiscally responsible manner, and in such a way as to promote technology standardization and interoperability.

Two other entities play an important role in shaping DEEP's hardware and software environment from the perspective of policies and procedures. The first is a separate state entity, the Bureau of Enterprise Systems Technology (BEST: <http://www.ct.gov/best>). The second is the DEEP Information Technology Advisory Committee (ITAC).

BEST is Connecticut's lead state entity that provides quality IT services and solutions to state agency customers, effectively aligning business and technology objectives through collaboration, in order to provide the most cost-effective solutions that facilitate and improve the conduct of business for our state residents, businesses, visitors and government entities.

BEST, also in its capacity as lead IT agency for the state, has authority for the purchase of IT equipment and services by executive branch agencies. It delegates some purchasing authority to individual agencies such as DEEP. BEST manages a wide range of state contracts that typically are used by agencies such as DEEP to purchase common hardware and software.

All proposed computer hardware and software purchases originating within the agency must be reviewed and approved by OIM. Most of the hardware and software purchased by DEEP conforms to standards established by DEEP or BEST. It is OIM's responsibility to evaluate proposed hardware and software products.

DEEP and BEST interact in many different ways and at many different levels. Within OIM, for example, BEST provides some of the basic technology services used by most executive branch agencies, including DEEP, such as email and web access and associated security controls.

The second entity referred to above, that also plays an important role in shaping DEEP's hardware and software environment, is ITAC. ITAC exists to ensure that Information Management (IM) solutions meet the business requirements of DEEP. These IM solutions include the information technology infrastructure needed to support the baseline needs of the agency, the application and information solutions needed to support agency strategies and common needs, and the use of new technology that can be utilized to support the agency's strategic business requirements. In simple terms, proposed

major IT/IM projects, policies, expenditures, etc. are reviewed by the ITAC from a DEEP business perspective and endorsed by the Board prior to implementation or funding commitments. Some projects may undergo separate technical reviews by OIM staff and other qualified DEEP staff. ITAC currently consists of thirteen members, primarily directors and assistant directors, from throughout the agency. It's chaired by the Director of OIM. ITAC meets on a monthly or bimonthly basis and makes its recommendations to OIM and the DEEP Commissioner and his senior staff. OIM has developed a "Project Profile" Word document template that program staff have started using to document proposed IT/IM projects that are reviewed by ITAC.

Basic Infrastructure

Every permanent, fulltime DEEP employee based at DEEP headquarters and selected field offices is equipped with a minimum level of basic, standardized information technology. Currently that minimum technology consists of a mix of zero clients and an assortment of physical devices such as laptops and tablets deployed in 2014-2015, running Microsoft Windows 7 or 8.1 as the Operating System and Microsoft Office 2013 as the client suite. All agency computers are part of a common network. Data stored on the network is backed up on a daily basis by OIM staff using automated methods.

Many environmental programs within DEEP make extensive use of standard client software such as Microsoft Word, Excel, and Access. There is much additional software used within parts of the agency, beyond these standard client tools. Some is standardized, while other software is specific. An Example of standard software includes publishing software from Adobe.

When OIM was formed in 2005, one of the first issues it identified was the proliferation of MS Access databases in use at the DEEP program level. These databases are complex, many been modified to reflect changing business needs, merged into SIMS or converted into Microsoft SQL Server and .NET. Several database/applications projects are underway that utilize this technology.

Hardware and Software for DEEP Environmental Programs

Project Managers for individual environmental data projects are responsible for identifying hardware and software needed in conjunction with a project subject to EPA's Quality System requirements. The required format for a standard Quality Assurance Project Plan includes a specific element within the "Data Generation and Acquisition" section named called "Data Management" (see Section 9). Within this element, project managers are to "include any required computer hardware and software" needed for the project.

Recent IT/IM projects for DEEP environmental programs have included new field hardware and software for DEEP Underground Storage Tank (UST) program, which have streamlined the collection of data. DEEP has also started to digitize the RCRA Hazardous Waste manifests, which will be available to the public on a DEEP internet site. This process will result in more transparent and easier to find hazardous waste data for both DEEP staff and the public.

9. Planning

Purpose – To document how individual data operations will be planned within the organization to ensure that data or information collected are of the needed and expected quality for their desired use.

Overview – Project Planning and the EPA Quality System

Documented, systematic project planning is arguably the most important element of EPA's vision of a Quality System as it is applied to environmental programs. EPA strongly promotes the policy that a thorough planning exercise should precede any project that acquires, generates, compiles, or uses environmental data. The results of this planning are documented accurately and completely in a QAPP, which must then be reviewed and approved by EPA (typically EPA New England QA) before the project begins. QAPPs are typically approved for five years. The processes documented in any approved QAPP must be followed once the project is underway and all QAPPs must be reviewed annually and revised as necessary to reflect any changing conditions related to the project.

EPA's National Quality System program and the EPA New England Quality Assurance Unit both have produced extensive written material designed to guide various aspects of the Quality Assurance project planning process. For example, DEEP programs follow EPA QA/R-5 QMP. Relevant EPA websites and individual documents are referenced in different sections of this plan, but the following are some of the key EPA documents related to environmental data project planning as it relates to Quality Assurance and to the development of QAPPs that adhere to EPA's requirements:

*EPA Requirements for Quality Assurance Project Plans (QA/R-5) – March, 2001;
reissued May, 2006*

<http://www.epa.gov/QUALITY/qs-docs/r5-final.pdf>

Guidance for Quality Assurance Project Plans (QA/G-5) – December, 2002

<http://www.epa.gov/QUALITY/qs-docs/g5-final.pdf>

Guidance on Systematic Planning using the Data Quality Objective Process (QA/G-4)

– February, 2006

<http://www.epa.gov/region6/qa/qadevtools/mod4references/secondaryguidance/g4-final.pdf>

EPA New England Quality Assurance Project Plan Program Guidance – (Rev. 2, Jan. 09, 2010)

<http://www.epa.gov/region1/lab/qa/pdfs/QAPPProgram.pdf>

The required format for a standard QAPP contains 24 individual elements, divided into four groups, as follows (from R-5):

Project Management

- Title and Approval Sheet
- Table of Contents
- Distribution List
- Project/Task Organization
- Problem Definition/Background
- Project/Task Description
- Quality Objectives and Criteria
- Special Training/Certification
- Documents and Records

Data Generation and Acquisition

- Sampling Process Design (Experimental design)
- Sampling Methods

- Sample Handling and Custody
- Analytical Methods
- Quality Control
- Instrument/Equipment Testing, Inspection, and Maintenance
- Instrument/Equipment Calibration and Frequency
- Inspection/Acceptance of Supplies and Consumables
- Non-direct Measurements
- Data Management
- Assessment and Oversight
 - Assessments and Response Actions
 - Reports to Management
- Data Validation and Usability
 - Data Review, Verification, and Validation
 - Verification and Validation Methods
 - Reconciliation with User Requirements

It should be noted that the term “Data Quality Objective,” which appears in one of the previous document titles, is part of a specific planning process promoted by EPA for environmental programs. The following definitions are from the Glossary section of EPA’s QS website:

Data Quality Objectives Planning Process: A systematic strategic development tool based on the scientific method that identifies and defines the type, quality, and quantity of information needed to satisfy a specified use.

Data Quality Objectives (DQOs): Qualitative and quantitative statements derived from the DQO Planning Process that clarify the purpose of the study, define the most appropriate type of information to collect, determine the most appropriate conditions from which to collect that information, and specify tolerable levels of potential decision errors.

Finally, the term “Graded Approach” is used frequently in EPA’s QS documentation to refer to establishing an appropriate level of effort when planning for an environmental data project. The following definition is from EPA’s QS Glossary:

Graded Approach: The process of basing the level of application of managerial controls applied to an item or work according to the intended use of the results and the degree of confidence needed in the quality of the results.

The EPA New England QAPP Program Guidance document (see previous link) includes the following statement, which includes a reference to using the Graded Approach:

Since the content and level of detail in individual QAPPs will vary according to the work being performed and the intended use of the data, EPA New England supports a “graded approach” when preparing QAPPS. In other words, the amount of documentation and level of detail will vary based upon the complexity and cost of the project. Appropriate consideration should be given to the significance of the environmental problem to be investigated, the environmental decision to be made, and the impact on human health and the environment.

Planning for DEEP Data Projects

2014 - 2018 DEEP QMP

Project Managers for individual environmental data projects are responsible for conducting the necessary planning for projects subject to EPA's Quality System requirements, and documenting the results of the planning in a Quality Assurance Project Plan.

DEEP Quality System Objective: - Update and maintain a status matrix of pending and active QAPPS, and post it on DEEP's intranet website, with updates reported to EPA New England QA annually. This is intended as a basic management tool.

As discussed in Section 1, EPA New England QA has established certain content requirements for the "Annual Reporting of Quality System Progress," a document that organizations must submit in conjunction with the general requirement to review and update Quality Management Plans annually. One of the requirements covers QAPPS. Specifically, DEEP must submit a current QAPP Inventory List as part of the report. The successful implementation of the above objective would result in the ability to share this information with EPA New England QA at least monthly, not just on an annual basis.

See Appendix G (in hardcopy versions of this QMP) for a list of active DEEP QAPPS (document link at http://www.ct.gov/deep/lib/deep/quality_assurance/qapp_table.pdf).

10. Implementation of Work Processes

Purpose – To document how work processes will be implemented within the organization to ensure that data or information collected are of the needed and expected quality for their desired use.

Overview – Work Process Implementation and the EPA Quality System

EPA promotes SOPs and similar procedures as a valuable set of tools to be used by all organizations that carry out environmental programs subject to EPA's Quality System requirements. EPA defines an SOP as "a written document that details the method for a program, operation, analysis, or action with thoroughly prescribed techniques and steps, and that is officially approved as the method for performing certain routine or repetitive tasks." (From the "Glossary of Quality-Related Terms" section of EPA's QS website.) EPA has published a guidance document for developing SOPs titled *Guidance for Preparing Standard Operating Procedures (SOPs) - QA/G-6* (document link at <http://www.epa.gov/region6/qa/qadevtools/mod4references/secondaryguidance/g6-final.pdf> under heading "General Guidance").

Some organizations with Quality Systems for environmental programs have structured, centralized SOP policies that require that such standard procedures be systematically created, formatted, reviewed, catalogued, published, revised, etc. following protocols established at the bureau, branch, or agency level. Such a system usually includes something called an "SOP for SOPs," a prescribed procedure for documenting standard procedures. An obvious advantage to a structured, centralized approach to using standard operating procedures is the opportunity it provides for increased staff efficiency and improved consistency in performing repetitive project tasks (develop procedure once, use many times).

Work Process Implementation at DEEP

As DEEP goes through Lean, process SOPs for specific programs could be developed (e.g., UST Inspection SOP). Decisions about the development, use, documentation and distribution of SOPs and related methods are made at the bureau, division, or program level.

Where appropriate, SOPs/procedures are contained in QAPPs. Different programs maintain their own SOPs and are available upon request.

DEEP Environmental Data Project Work Process Implementation

Project Managers for individual environmental data projects are responsible for developing standard operating procedures and/or referencing existing procedures to be used in conjunction with a project subject to EPA's Quality System requirements. The required format for a standard Quality Assurance Project Plan includes a section called "Data Generation and Acquisition" in which SOPs and methods are to be documented. (See Section 9 for list of individual QAPP elements.)

DEEP Quality System Objective: Continue to develop Standard Operating Procedures (SOPs) through the DEEP Lean process.

11. Assessment and Response

Purpose – To document how the organization will determine the suitability and effectiveness of the implemented quality system and the quality performance of the environmental programs to which the quality system applies.

Overview - Assessments and the EPA Quality System

In the context of Quality Systems, EPA defines an assessment as "a general evaluation process used to evaluate the performance, effectiveness and processes of a management and/or technical system, e.g., peer review, surveillance, and audits." (From the "Glossary of Quality-Related Terms" section of EPA's QS website.) EPA considers formal assessments to be a key component of Quality Systems. As the above definition states, EPA promotes the use of assessments for two types of systems: management systems, such as Quality Systems, documented through QMPs, and technical systems, such as environmental data projects, documented through QAPPS. This definition also makes it clear that EPA recognizes different types of assessments. A separate list of "available assessment tools" is included in the document *EPA Requirements for Quality Management Plans-EPA QA/R2*: "assessment tools include quality systems audits, management systems reviews, peer reviews, technical reviews, performance evaluations, data quality assessments, readiness reviews, technical systems audits, and surveillance."

Additional information about EPA QS-related assessments can be found at EPA's QS website. Several documents listed in the General Guidance section of the website (http://www.epa.gov/quality/qa_docs.html) relate specifically to types of assessments.

DEEP Quality System Assessments

As noted in Section 4, DEEP units conduct a variety of reviews and assessments that relate to data quality and quality assurance, and some Quality System self-assessment does occur at the bureau level. Data collection and use of the data are provided for in the QAPPS. The introduction of Quality System objectives, introduced in Section 2 and discussed in more detail in Section 12, is designed to provide a mechanism for improving the agency's Quality System.

As noted in Section 1, EPA New England QA has begun to conduct periodic assessments of DEEP's Quality Systems, starting in 2008. Other EPA offices may also conduct assessments from time to time. One significant regular assessment carried out by EPA NERL is the technical system audit (TSA) that focuses on DEEP's air monitoring program. CAA regulations require such assessments to be performed at least every three years. The most recent audit was performed from June 16 to July 9, 2014 with a final report from EPA in September 2014 and covered calendar year 2011 through 2013.

DEEP Environmental Data Project Assessments

Project Managers for individual environmental data projects are responsible for documenting all planned assessments for projects subject to EPA's Quality System requirements and ensuring that they are completed and the results reported. The required format for a standard Quality Assurance Project Plan includes a specific element within the "Assessment and Oversight" section named "Assessments and Response Actions" (see Section 9), which are used to document all planned assessments.

Reviews and assessments are done on a project specific basis, per the project QAPP. For example, WPLR conducts annual self-audit/reviews on such projects as "Beach Monitoring and Notification Program for Connecticut Coastal Beaches" (Planning and Standards Division) and the Remediation Quality System Status Report, an annual self-assessment (Appendix H).

EPA New England QA Reporting Requirements for Assessments

As discussed in Section 1, EPA New England QA has established certain content requirements for the "Annual Reporting of Quality System Progress," a document that organizations must submit in conjunction with the general requirement to review and update Quality Management Plans annually. One of the requirements covers assessments. Specifically, DEEP must report on annual activity associated with the following categories of assessments:

- Quality System Assessments of DEEP,
- Quality System Assessments of Other Organizations (conducted by DEEP),
- Technical Assessments, and
- Project and Data Reports Assessed.

State Assessments

The State Office of the Auditors of Public Accounts (APA) regularly audits DEEP. In addition, several staff offices within the Connecticut General Assembly, as well as the APA, have the authority to carry out special audits of selected DEEP operations at any time. While these assessments touch on a wide range of operations and issues, including DEEP's financial policies and procedures, they may include the review of some aspects of the agency's operations that relate to its Quality System.

APA is "a legislative agency of the State of Connecticut whose primary mission is to conduct audits of all State agencies" (from the APA website - <http://cga.ct.gov/apa/>). The most common type of audit conducted by the APA is a "statutory audit." APA conducts such audits at DEEP and all other Executive Branch agencies on a continuous two-year cycle corresponding to Connecticut's fiscal year.

In the "Condition of Records" section of each report, the Auditors document "various areas in need of attention and corrective actions." Recommendations are included for each such area. DEEP is also given the opportunity to respond to each recommendation in writing prior to the issuance of the final report and that response is included in the report.

As mentioned, the APA also carries out reviews of certain specific state agency programs, contracts, financial accounts, etc. Several staff offices of the Connecticut General Assembly (<http://www.cga.ct.gov/>) - also review agency programs and activities on a case-by-case basis. These reviews may be part of the ongoing legislative process of studying how state government works and proposing the introduction of new programs, the expansion of agency responsibilities, the reorganization or elimination of existing programs, etc. Two such offices are:

- Office of Program Review and Investigations, reporting to Legislative Program Review and Investigations Committee (<http://www.cga.ct.gov/pri/index.asp>)
- Office of Legislative Research (<http://www.cga.ct.gov/olr/>).

12. Quality Improvement

Purpose – To document how the organization will improve the organization's quality system.

Quality System Improvement at DEEP

As introduced in Section 2 and detailed throughout this document, annual Quality System objectives are to be a key part of DEEP's QS and the primary mechanism used to improve the system. The criteria for developing these objectives is to identify QS-related issues, requirements, processes or activities that share the following characteristics:

- impact multiple environmental programs,
- should be addressed in a consistent manner across programs,
- can be addressed in a way that improves agency decision-making and increases agency, efficiency, and
- can be addressed in a reasonable timeframe and with reasonable staff and financial resources.

The DEEP QA Coordinator, with review and approval from the Environmental Quality Bureaus and the Deputy Commissioner, chose the QS objectives for the 2015-2019 QMP. Annual review of these objectives will be conducted by the Quality Assurance Coordinator in coordination with the QA Bureau contacts.

These QS objectives will be considered part of the QMP once they have been approved. Information about them will be posted on DEEP's Intranet website and shared with EPA New England.

Other Agency Initiatives Related to Process Improvement

In 2007 DEEP began a "Lean" Initiative, based on the process improvement approach and set of methods of the same name. National champions of using Lean in the context of environmental protection include EPA and the Environmental Council of the States (ECOS). A DEEP Lean Implementation Team has been formed, and as of December 2014, sixty-five Lean Project Teams from the Environmental Quality Branch have received training and are working on their project implementation plans.

As of 2013, a state-wide Process Improvement Steering Committee led by the Office of Policy and Management and was formed to foster inter-agency Leans and institutionalize Lean in state government. Each agency has a designated Lean coordinator, and these coordinators attend monthly meetings and trainings.

Quality Improvement for DEEP Environmental Data Projects

Project Managers for individual environmental data projects are responsible for identifying project-oriented data quality issues that must be corrected, plus related processes or activities that should be improved. QAPPs will document the assessments that should be carried out as one basic mechanism for identifying quality issues (see Section 11). Project Managers are expected to take the necessary steps to correct all identified data quality issues. They are also responsible for modifying the QAPP when resulting changes to the project warrant it.

The following statement is from DEEP's 2002 QMP. It should remain as a central tenet of the agency's approach to quality assurance.

All personnel working on environmental programs are encouraged to identify, to plan, to implement, and to evaluate quality improvement activities for their areas of responsibility. Personnel should prevent quality problems wherever possible and report opportunities for improvement as well as quality problems as they are identified.

Appendix H
Quality System Status Report
Remediation Division
July 1, 2013 – June 30, 2014

Date: April 8, 2015

To supplement the Department's 2014 Quality Management Plan (QMP), the following outlines the status of the Remediation Division's Quality System for CT Fiscal Year July 1, 2013 to June 30, 2014:

1. Status/Progress Report

A. Quality System Assessments

- Quality System Assessments of Your Organization

Self assessment of the Remediation Division Quality System was conducted on March 11, 2014. To begin the assessment, all EPA Grants and Agreements funding Remediation Division programs were assembled, and from there, the Quality Assurance/Quality Control (QA/QC) requirements for each determined (Section A).

The assessment confirmed that the EPA funded programs identified in 2011 were still active and the Division's roles/responsibilities regarding QA/QC had largely remained unchanged - with the exception of the CERCLA Pre-Remedial Program and the Cooperative Agreement for the Merriam Manufacturing Company Study Area, Durham Meadows NPL Site (see Table 1).

The assessment details for the CERCLA Pre-Remedial Program and the Cooperative Agreement are discussed in the respective Self-Audit/Review forms attached (Sections B and C).

- Quality System Assessments of Other Organizations

The Remediation Division did not conduct assessments of other organizations' Quality Systems during the grant period.

- Technical Assessments

The Remediation Division did not conduct technical assessments during the grant period.

- Project and Data Reports Assessed

The Remediation Division did not conduct assessment of project or data reports during the grant period.

- Areas for Improvement/Recommendations to Senior Staff

Nothing to report.

- QA System Challenges/Vulnerabilities

Nothing to report.

- B. Other Topics – QA Communications, QA Training Needs, QA Guidance Materials/Tools, QA Best Practices, QA Special Projects/Technical Issues

During the June 31, 2013 to July 1, 2014 grant period, the Remediation Division continued to make progress in a number of areas that will directly impact QA/QC – both internally and externally.

The Division continued to reach milestones established by the plan for the state *Cleanup Transformation*. The *Cleanup Transformation* was developed to transform the remediation program into a program that can achieve a greater number of cleanups in a more efficient and effective manner. As the Division moved forward with the plan, several changes, i.e., revisions and amendments, were made to CT state statutes and regulations (“Wave 1”).

Upon adoption, the Division also developed the subsequent tracking systems, guidance documents, instructions and forms.

- Communication

During the grant period, communication between the Department, environmental professionals and the regulated community was essential to maintain transparency, and to gain support of the transformation process.

All aspects of the *Cleanup Transformation* were communicated to the public at Remediation Roundtable meetings (held on a quarterly basis) and by posting the information on the CT DEEP Remediation webpage.

For example, during the grant period the following topics were discussed at the Roundtable:

- ✓ The Remediation Standard Regulations (RSRs) amendments (effective June 27, 2013);
- ✓ Related revised forms and guidance materials; and

- ✓ *Cleanup Transformation updates.*

Equally important was the need to maintain communication internally. Communication within the Division was maintained by conducting monthly Division meetings. The meetings provided staff with updates on the *Cleanup Transformation* as well as site-specific information.

- **Guidance Materials**

To assist with the transition and application of the amended RSRs, the Division developed several guidance documents. In addition to being discussed at the Roundtable meetings, the following material was made available on the CT DEEP website:

- ✓ **Guidance Document for Rendering Soil Inaccessible Using Pavement (November 2013)**
- ✓ **Guidance Document for Pollutant Mobility Criteria Exception for Groundwater Infiltration (November 2013)**
- ✓ **Guidance for Calculating the 95% Upper Confidence Level for Demonstrating Compliance with the Remediation Standard Regulations (May 2014)**
- ✓ **Guidance Document for Exemptions for Incidental Sources (November 2013)**
- ✓ **ELUR Application Instructions and Guidance (October 2013)**
- ✓ **Verification Report Guidance Document (revised December 2013)**

And as set forth in the February 2013 *Cleanup Transformation* draft report, in anticipation of further Remediation Standard Regulations amendments, the Division developed the following “Public Discussion Drafts” during the grant period:

- ✓ **Alternative Groundwater Protection Criteria Concept (August 8, 2013)**
- ✓ **Monitored Natural Attenuation Concept (August 8, 2013)**
- ✓ **Self-Implementing Concept for Engineered Controls (August 8, 2013)**
- ✓ **Potential Changes to RSRs: Sediment (November 14 2013)**
- ✓ **Potential Institutional control Changes to RSRs and EUR Regulations (November 14 2013)**
- ✓ **Alternative Pollution Mobility Criteria Options (February 18, 2014)**
- ✓ **Direct Exposure Criteria for Passive Recreation (April 30, 2014).**

- Training of Division Staff, Environmental Professionals and the Regulated Community

During the grant period Division staff attended the following training programs:

- ✓ NEWMOA Green Remediation Training December 2013
- ✓ EPA Ecological Risk Assessment Training October 2013
- ✓ Groundwater Sampling in Fractured Bedrock December 2013
- ✓ NEWMOA Risk Communication March 2014
- ✓ NEWMOA DNAPL Investigation and Remediation Training June 2014

During the grant period Division staff conducted/presented the following training programs:

- ✓ Remediation Standard Regulations of Connecticut State Agencies Training March 2014
- ✓ Environmental Land Use Restrictions Presentation to Society of Women Environmental Professionals Fall 2013
- ✓ 1,4 dioxane at UMass Soils Conference June 2014
- ✓ Vapor Intrusion Training at UMass Soils Conference June 2014

- Overall Improvements to Remediation Division Functions/Programs

Also during the grant period, additional actions were initiated/conducted to improve the Division's functions and programs. These were:

- ✓ **Upgrade of the Division's data management system;**
- ✓ **Evaluation of the Division's Potable Water Program using the Kaizen Lean approach;**
- ✓ **Evaluation of the use and usefulness of the Reasonable Confidence Protocols (RCPs). To gather constructive feed-back on the RCPs, the Division distributed a survey to the end-users (environmental professionals and laboratory personnel). The results were presented at the May 13, 2014 Remediation Roundtable, and for the most part, the respondents agreed that the RCPs were beneficial. It was also suggested that there was room for improvement and that additional training be offered.**

SECTION A

2014 CT DEEP- Remediation Division Quality System Self-Audit/Review

Reporting Period: CT State Fiscal Year July 1, 2013 – June 30, 2014

Description of Audit/ Review	When /by Whom	Documented Results Available?
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Description of Audit / Review	When / by Whom	
<p>The purpose of the assessment is to determine the EPA Grants and Agreements funding Remediation Division programs/projects and to identify the QA/QC requirements for each. From there, determine the Division's roles and responsibilities.</p> <p>All of the EPA Grants and Agreements that fund Remediation Division programs are listed in Table 1 (attached). Also provided are the QA/QC requirements for each.</p> <p>PROGRAM REVIEWS – Determination</p> <p>In all cases, a party other than the Remediation Division (e.g. the Responsible Party) is responsible for developing and implementing site-specific QAPPs.</p> <p>The QAPPs developed for EPA funded programs/projects are largely reviewed and approved by EPA, but it's important to note that the Remediation Division is given the opportunity to provide comment.</p> <p>The QAPPs for NPL sites under Enforcement Agreements between the EPA and CT have been reviewed and approved by CT DEEP. At this time, no additional sites are planned for Enforcement Agreement action.</p>	<p>Michelle Bedson</p>	<p>(attached)</p>

Documented Results Available?		
		<p>In the case of the RCRA Corrective Action Program, QAPPs are required, but the Division does not formally approve these documents. Again, the Division can request assistance from EPA if needed.</p> <p>Please note that the Remediation Division does not maintain a system to track approved QAPPs for all projects.</p>

SECTION A (cont.)

Table 1

Remediation Division Programs funded by EPA and related QAPP Requirements

Federal Program	Related Program/Task	Sampling Part of Task?	QAPP Required?	Who is Responsible for Writing the QAPP?	Who is Responsible for Approving the QAPP?
CERCLA Superfund – MSCA for Pre-Remedial Activities	Conduct Pre-CERCLIS Site Screening Assessment	Prior to July 2008 – Yes July 1, 2013 to June 30, 2014 – No	Yes No – See the attached 2014 CERCLA Pre-Remedial Program Quality System Annual Self-Audit / Review Form (Section B)	Remediation Division Project Manager	EPA Approval
CERCLA Superfund - MSCA for Management Assistance at NPL sites in CT	Provide oversight and review of assessment and cleanup of federal lead NPL sites	Yes	Yes	Responsible Party (with their environmental professional)	EPA Approval
Enforcement Agreements EPA and CT - NPL sites in CT	Provide oversight and review of assessment and cleanup of state lead NPL	Yes	Yes	Responsible Party (with their	DEEP Approval; EPA can review and provide comment

Federal Program	Related Program Task	Sampling Part of Task?	QAPP Required?	Who is Responsible for Writing the QAPP?	Who is Responsible for Approving the QAPP?
	sites			environmental professional)	
Brownfields – State and Tribal Response Program Grant	Provide oversight and review of sites receiving federal Brownfields funding for cleanup (recipients must work under a State Remediation Program) – and provide oversight and review to grantee receiving assessment funding if requested Conduct Targeted Brownfields Assessments using state contractor support	Yes	Yes	Grantee	EPA Approval; DEEP can review and provide comment EPA Approval; DEEP can review and provide comment

Federal Program	Related Program Task	Sampling Point of Task?	QAPP Required?	Who is Responsible for Writing the QAPP?	Who is Responsible for Approving the QAPP?
RCRA Corrective Action – Memorandum of Agreement EPA and CT, Performance Partnership Agreement	<p>Act as lead agency at RCRA Corrective Action Sites (requiring assessment and cleanup)</p> <p>Solid Waste Landfills with hazardous waste unit</p> <p>RCRA permitted facilities</p> <p>RCRA Land Disposal facilities that fall w/in the regulatory program of 22a-449(c)-105(h) RSCA</p> <p>Interim status</p>	<p>Yes, through Long Term Stewardship Permit</p> <p>Yes, through Long Term Stewardship Permit</p> <p>Yes</p> <p>Yes</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>	<p>Responsible Party (with their environmental professional)</p> <p>Responsible Party (with their environmental professional)</p> <p>Responsible Party (with their environmental professional)</p>	<p>QAPP required; DEEP does not formally review and approve - if needed, EPA assistance may be requested</p> <p>QAPP required; DEEP does not formally review and approve – if needed, EPA assistance may be requested</p> <p>QAPP required; DEEP does not formally review and approve – if needed, EPA assistance may be requested</p> <p>QAPP required; DEEP does not formally review and approve – if needed, EPA assistance may be requested</p>

Federal Program	Related Program Task	Sampling Part of Task?	QAPP Required?	Who is Responsible for Writing the QAPP?	Who is Responsible for Approving the QAPP?
	treatment and or storage facilities that fall within the Property Transfer Program			Certifying Party (with their environmental professional)	approve – if needed, EPA assistance may be requested
Site-Specific EPA Lead Remedial Response Cooperative Agreement for Credit – for Remedial Action at the Merriam Manufacturing Company Study Area, Durham Meadows NPL Site, Durham, CT	Provide oversight and review of activities conducted to provide residents with contaminated drinking water supply wells a safe supply of drinking water (by maintaining and monitoring water treatment systems and by providing bottled water when necessary). And for monitoring wells that are at-risk.	Yes	Yes – See the attached 2014 Cooperative Agreement Quality System Annual Self-Audit / Review Form (Section C)	State Contractor	EPA Approval; DEEP can review and provide comment

SECTION B

2014 CT DEEP-Remediation Division Quality System Self-Audit/Review

Reporting Period: CT State Fiscal Year July 1, 2013 – June 30, 2014

1. Program/Project Information:

WPLR Division:	
Program:	

2. The Quality System documentation for this program is/was a:

Program-level QAPP **OR** **Project Specific QAPP**

3. Quality Plan or QAPP Information

QAPP Title:	██████████		
Status:	Approved <input checked="" type="checkbox"/> with expiration date <u>4/23/13</u> (generally 5-year approval)		
	If expired, is QAPP undergoing update/revisions? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
	Is this project continuing beyond June 30, 2014? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Approved by:	EPA <input checked="" type="checkbox"/>	DEEP <input type="checkbox"/>	Other <input type="checkbox"/>
Approval date:	5/23/08	EPA RFA No:	NONE GIVEN

4. The following are attached:

- A. Prior year areas for improvements/non-conformances;
- B. Current year new and unresolved/continuing areas for improvements/non-conformances
- C. Report of changes to program/project QAPP

Preparer: _____ **Title:** _____ **Date:** March 11 2015

I certify that the DEEP/WPLR program under my supervision is participating in the DEEP QA System, and that the above accurately reflects the annual self-audit of this program's quality system.

Program Supervisor: Patricia DeRosa **Date:** April 7, 2015

SECTION B (cont.)

A. Prior Year (2013) Areas for Improvement / Non-Conformances

Description of Issue / Problem	Resolution / Schedule / Responsible Party	Correction Complete?
<p>Determine if the <i>Generic QAPP Non-Site Specific Guidance for Pre-Remedial Activities 2008</i> (due to expire on 4/30/13 per EPA's 5-year auto update requirement) will be updated and submitted to EPA for approval.</p>	<p>See Form C. of Section B</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>

SECTION B (cont.)

B. 2014 New and Unresolved Areas for Improvement / Non-Conformances

Description of Issue / Problem	Resolution / Schedule / Responsible Party	Correction Complete?
NONE TO REPORT		<input type="checkbox"/> Yes <input type="checkbox"/> No

SECTION B (cont.)

C. Report of Changes to Program/Project QAPP

Description of Necessary Change	When /by Whom	Has Change been made?
<p>When the <i>Generic QAPP Non-Site Specific Guidance for Pre-Remedial Activities 2008</i> was approved, the Pre-Remedial MSCA Grant focused primarily on Pre-CERCLIS Site Screening Assessments. If it was determined that sampling would benefit the Assessment – Division staff had this option.</p>	<p>This decision was made with EPA agreement on December 20, 2013 (documented in and e-mail from Steve DiMattei (EPA) to Michelle Bedson (CT DEEP)).</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>

SECTION C

2014 CT DEEP-Remediation Division Quality System Self-Audit/Review

Reporting Period: CT State Fiscal Year July 1, 2013 – June 30, 2014

1. Program/Project Information:

WPLR Division:	
Program:	Site-Specific EPA Lead Remedial Response Cooperative Agreement for Credit Remedial Action at the Merriam Manufacturing Company Study Area, Durham Meadows NPL Site, Durham, CT

2. The Quality System documentation for this program is/was a:

Program-level QAPP **OR** **Project Specific QAPP**

3. Quality Plan or QAPP Information

QAPP Title:	<i>Quality Assurance Project Plan for Potable Water Monitoring Program Former Merriam Manufacturing Company Study Area Portion of Durham Meadows Superfund Site Durham, Connecticut 2015</i>		
Status:	Approved <input checked="" type="checkbox"/> with expiration date <u>1/20/20</u> (generally 5-year approval)		
	If expired, is QAPP undergoing update/revisions? <input type="checkbox"/> Yes <input type="checkbox"/> No		
	Is this project continuing beyond June 30, 2014? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Approved by:	EPA <input checked="" type="checkbox"/>	DEEP <input type="checkbox"/>	Other <input type="checkbox"/>
Approval date:	1/20/15	EPA RFA No:	NONE GIVEN

4. The following are attached:

- A. **Prior year areas for improvements/non-conformances;**
- B. **Current year new and unresolved/continuing areas for improvements/non-conformances**
- C. **Report of changes to program/project QAPP**

Preparer: _____ **Title:** _____ **Date:** March 11 2015

I certify that the DEEP/WPLR program under my supervision is participating in the DEEP QA System, and that the above accurately reflects the annual self-audit of this program's quality system.

Program Supervisor: David Ringquist **Date:** April 7, 2015

SECTION C (cont.)

A. Prior Year (2013) Areas for Improvement / Non-Conformances

Description of Issue / Problem	Resolution/ Schedule/ Responsible Party	Correction Complete?
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<p>In September 2010, CT DEEP was awarded a Site-Specific Cooperative Agreement for Credit - for Remedial Action at the Merriam Manufacturing Company Study Area, Durham Meadows NPL Site, Durham, CT. The Cooperative Agreement is the mechanism by which CT DEEP is receiving credit (toward a Remedial Action cost-share obligation) for: 1) providing residents with contaminated drinking water supply wells a safe supply of drinking water (by maintaining and monitoring water treatment systems and by providing bottled water when necessary), and 2) monitoring wells that are at-risk.</p> <p>Credit is awarded to CT DEEP for both past and future payments made to the following associated contractors:</p> <ul style="list-style-type: none"> • Environmental Consultant (for collecting samples, reviewing data, writing reports and overall project coordination); • Potable Water Treatment contractor (for GAC change outs, installation & removal of systems (including sediment filters and UV treatment, if needed); and • Commercial laboratory (for chemical analysis of drinking water samples collected by the Environmental Consultant) <p>The Cooperative Agreement specifies that a QAPP be in-place, and indicates that the applicable QAPP is the <i>Generic QAPP Non-Site Specific Guidance for Pre-Remedial Activities 2008</i>. The Generic QAPP is no longer valid (due to expiration), and therefore a Site-Specific QAPP is required.</p>	<p>See Form C. of Section C</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
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SECTION C (cont.)

B. 2014 New and Unresolved Areas for Improvement / Non-Conformances

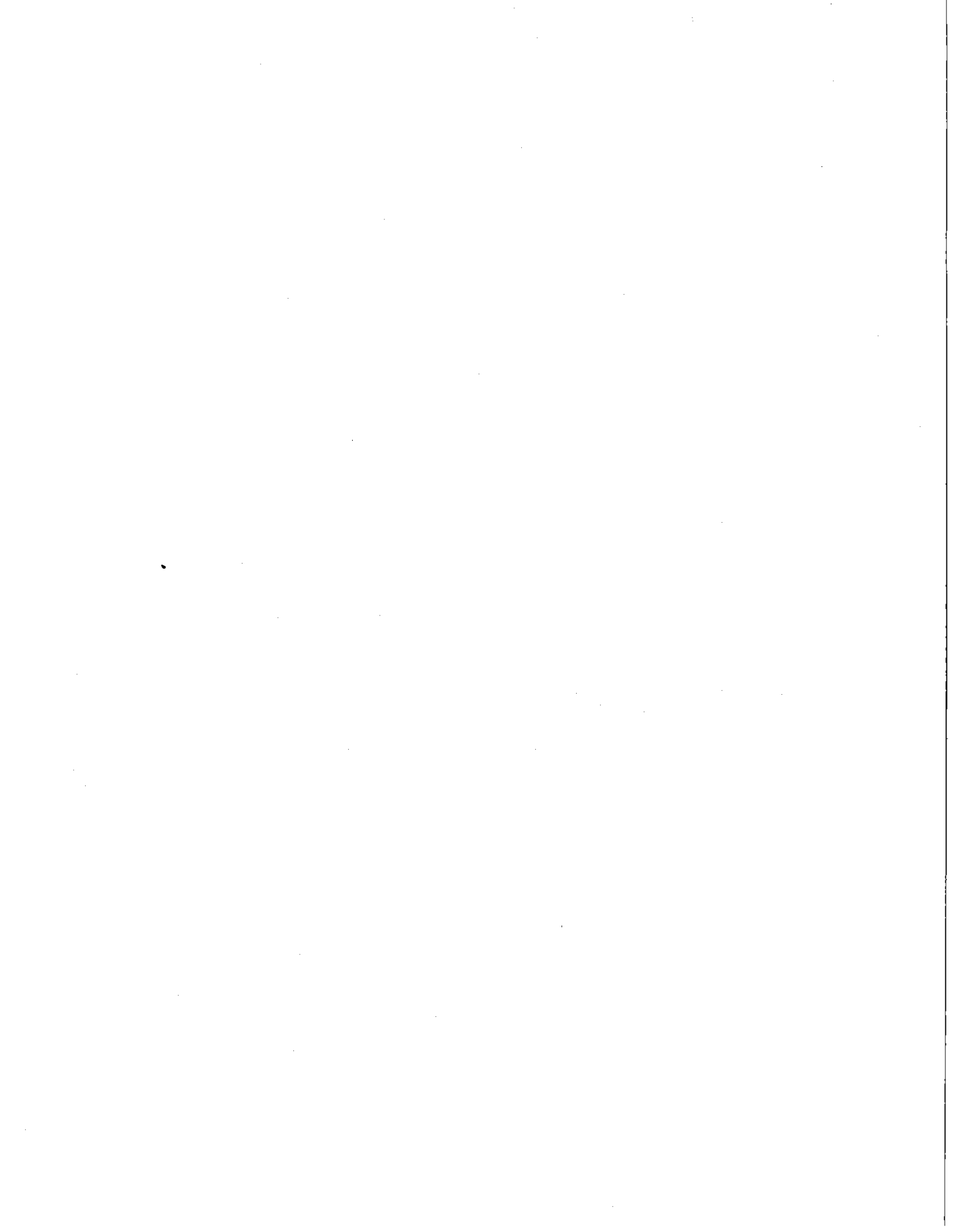
Description of Issue / Problem	Resolution / Schedule / Responsible Party	Correction Complete?
NONE TO REPORT		<input type="checkbox"/> Yes <input type="checkbox"/> No

SECTION C (cont.)

C. Report of Changes to Program/Project QAPP

Description of Necessary Change	When /by Whom	Has Change been made?
<p>A QAPP is required for the Site-Specific Cooperative Agreement for Credit - for Remedial Action at the Merriam Manufacturing Company Study Area, Durham Meadows NPL Site, Durham, CT.</p>	<p>In 2014, the CT DEEP funded (through the Cooperative Agreement) Legette, Brashears & Graham to develop the</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>

	<p>Site-Specific QAPP. With input from CT DEEP and EPA, the Quality Assurance Project Plan for Potable Water Monitoring Program Former Merriam Manufacturing Company Study Area Portion of Durham Meadows Superfund Site Durham, Connecticut 2015 was approved by EPA on January 20, 2015.</p>	
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Connecticut Department of Energy & Environmental Protection - 2014-2018 Quality Management Plan for Environmental Programs Funded by the U.S. Environmental Protection Agency
 Appendix C - Active DEEP Quality Assurance Project Plans (QAPPs), Revised 5/14/15

Water Protection and Land Reuse Bureau (WPLR)

Bureau	Division	Project Title	Work ongoing for update. Overdue. Program continues with no major changes. Program SOPs updated regularly, and effort ongoing to separate QAPPs/SOP content. EPA, NCA, and NCCA QAPPs active and overlapping content with regular monitoring program.	2009	Specific	Christine Olsen - QA lead	Johanna Hunter - Project Officer; Ash Clark - QA Officer	04303 02209
WPLR	PSD	Long Island Sound Study/ Long Island Sound Monitoring	Work ongoing for update. Overdue. Program continues with no major changes. Program SOPs updated regularly, and effort ongoing to separate QAPPs/SOP content. EPA, NCA, and NCCA QAPPs active and overlapping content with regular monitoring program.	2015 Dec.	Specific	Christine Olsen - QA lead	Johanna Hunter - Project Officer; Ash Clark - QA Officer	09023
WPLR	PSD	Long Island Sound Study/ Long Island Sound Monitoring	Update drafted; EPA review expected 2015.	2008 Dec.	Specific	Christine Olsen - QA lead	Johanna Hunter - Project Officer; Ash Clark - QA Officer	11025 (Emergency 07180)
WPLR	PSD	Long Island Sound Study/ Long Island Sound Monitoring	Update drafted; EPA review expected 2015.	2017 Dec.	Specific	Christine Olsen - QA lead	Johanna Hunter - Project Officer; Ash Clark - QA Officer	n/a
WPLR	PSD	Long Island Sound Study/ Long Island Sound Monitoring	Updated 2012. 11/26/2012: EPA review/approval with 2 minor comments to original submission.	2019 Aug.	Specific	Chris Bellucci - Project Officer	David McDonald - Biology Lab/Lead; Toby Stover - Project Officer; Steve DiMattei - QA	n/a
WPLR	PSD	Monitoring and Assessment	Approved by EPA 08/12/2014	2017 Nov.	Specific	Mary Becker - PI		07133
WPLR	PSD	Monitoring and Assessment	Approved by EPA 11/20/2012	N/A	Specific	Meghan Lally		03066
WPLR	PSD	Monitoring and Assessment	Finalized 02/02/2013	2015 Aug.	Specific	Guy Hoffman Tracy Lizotte	Mart Liebman Am Rodney	
WPLR	PSD	Monitoring and Assessment	Overdue for 5-year update; revision underway with plan to submit to EPA by April 2015.	2008 May	Specific	Meghan Lally		
WPLR	PSD	Monitoring and Assessment	Update due to EPA.		Specific	Guy Hoffman	William Nuzzo	
WPLR	PSD	Monitoring and Assessment	SOP Final Draft pending internal and partner agency review.	N/A	Specific	Meghan Lally, Chris Bellucci, Tracy Lizotte	TBD, DEEP FFD Representative; TBD,	
WPLR	PSD	Monitoring and Assessment	Development underway. Draft for EPA review expected late 2015 or early 2016.		Specific	Tracy Lizotte		
WPLR	PSD	Municipal Water Pollution Control	Final. Approved 10/10/2006. 1/29/2015: Update due but not yet submitted.	2011 Sep.	Specific	Craig Koszky	Charles Forcier	06618
WPLR	PSD	Non Point Source (319) Program	DEP/EPA approved. Grant program guidelines. 2015: new program supervisor; to undergo program review.	2011 Apr.	Specific	Chuck Lee	Steve DiMattei Steve Wiant	06152 N/A

Water Protection and Land Reuse Bureau (WPLR), Continued

Bureau	Division	604(b) Grant Program (previously funded through Non Point Source (NPS) Program)	Pecunook River Ecol	DEP/EPA approved.	Revised to	Specific	Chris Malik	Steve DiMattei Steve Winnert	Nick Cantatore	08-17 09/09/151
WPLR	PSD	Watershed Management Program & Non Point Source Program	March 2015: No longer funded via CWA Section 319; however QAPP is still active. Aspetuck River Watershed Quality Monitoring Project, Harbor Watch River Watch Program, Nature Center for Environmental Activities. Updated/revised QAPP, formerly approved with RFA#03325.	EPA approval, via email, 7/20/2010.	2015 Apr.	Specific	Chris Malik	Steve DiMattei Steve Winnert	Dick Harris, NCEA	10/159
WPLR	PSD	Watershed Management Program & Non Point Source Program	March 2015: No longer funded via CWA Section 319; however QAPP is still active. Seso Brook Watershed Water Quality Monitoring, Harbor Watch River Watch Program, Nature Center for Environmental Activities. Updated/revised QAPP, formerly approved with RFA#05154	EPA approval. Grouped with three other similar QAPPs all from HWRW - all share same RFA# as per EPA email 9/16/2010.	5/30/2019	Specific	Chris Malik	Steve DiMattei Steve Winnert	Nick Cantatore	08-16 10/160
WPLR	PSD	604(b) Grant Program (previously listed as Watershed Management Program & Non Point Source Program)	Norwalk River Watershed Quality Monitoring Project, Harbor Watch River Watch Program, Nature Center for Environmental Activities.	New updated QAPP	2/28/2018	Specific	Chris Malik	Steve DiMattei Steve Winnert	Nick Cantatore	10/160
WPLR	PSD	Watershed Management Program & Non Point Source Program	Five Mile River Watershed Quality Monitoring Project, Harbor Watch River Watch Program, Nature Center for Environmental Activities. (Updated/revision same RFA# as per EPA email 9/16/2010. of formerly approved QAPP)	EPA approval. Grouped with three other similar QAPPs all from HWRW - all share same RFA# as per EPA email 9/16/2010.	2/28/2018	Specific	Chris Malik	Steve DiMattei Steve Winnert	Nick Cantatore	10/160
WPLR	PSD	Watershed Management/CT Dept Health Ag. Visibility Grant	Harbor DO Profiling	New	2019 Apr.	Specific	Chris Malik		Nick Cantatore Harbor Watch	
WPLR	PSD	Watershed Management/EPA Urban Waters	Storm Drain System Lower Norwalk River	New	2017 Feb.	Specific	Chris Malik		Nick Cantatore Harbor Watch	

Materials Management and Compliance Assurance Bureau (MMCA)

Bureau	Division	Site Assessment & Support Unit	Conneticut Department of Environmental Protection Site Assessment and Support Unit QAPP	Approved by EPA (Region 1) June 2011.	June 2016	Specific	Gil Richards, Program QA Officer, James Flinnig, QAPP author	Claire Wiltschko & Steve DiMatteo	N/A
MMCA	ERSPD ¹								
MMCA	WPED ⁴	Industrial Permitting and Enforcement, Field Compliance	NPDES Industrial Compliance Monitoring Program QAPP	Last revised August, 2011. Approved by EPA February, 2012.	2016 Aug.	Generic	Ed Finger	Dave Webster	
MMCA	E&ED ¹	Pesticide Program	Cooperative Pesticide Enforcement Program QAPP	Last revised December, 2010. Approved by EPA May, 2011.	2015 Dec.	Generic	Diane Jorsky	Robert Koethle	

Bureau of Air Management (BAM)

BAM	PSD	Photochemical Assessment Monitoring Station (105)	QAPP for PAMS Volatile Organic Carbon State of Connecticut DEEP, May 2001	Final - QAPP approved 5/31/01; updated 5/02, 5/03, 5/04, 12/04 and 12/05. Five year revision due 5/31/06, submitted 5/25/06. Updated 1/07, Approved 6/12/07. Updated 4/08. Updates are done annually in November since 2010.	N/A annual updates only		Peter Babich	Bob Judge	Author Steve Bailey
BAM	PSD	Particulate Monitoring (103)	QAPP For Particulate Matter Sampling and Analysis CTDEEP, August 2005	Final - Approved date 12/30/99. QAPP updated in 8/03, 12/03, 6/04; Revision submitted 12/04. EPA's comments addressed and resubmitted 6/05 and 8/05; approval 8/05. Updated 6/06, 8/07 & 8/08. Updates are done annually in November since 2010.	N/A annual updates only		Reid Matusek	Bob Judge	
BAM	PSD	Criteria Gas Monitoring (105)	QAPP for the Sampling and Analysis of Gaseous Criteria Air Pollutants, CTDEEP, April 2006	Final - EPA approval 4/25/06. Updated 6/07 & 5/08. New revision 5/26/09. Approved March 2010. Updates are done annually in November since 2010.	N/A annual updates only		Reid Matusek	Bob Judge	
BAM	PSD	Black Carbon (103)	QAPP for Black Carbon: Sampling & analysis for black carbon, & organic carbon species related to wood smoke, CTDEEP, Feb 08	Original approval 1/21/04, amended 1/31/05 & 2/16/06. Annual updates 2/07 & 2/08. Rewritten & approved 2/09. Updates are done annually in November.	N/A annual updates only	Specific	Reid Matusek	Bob Judge	
BAM	PSD	Mercury (105)	QAPP for Meteorological parameters: WS, WD, OT, IT, RE, RH (DP), SR, CTDEEP, Nov 10	Original approval 1/21/04, amended 1/31/05 & 2/16/06. Annual updates 2/07 & 2/08. Rewritten & approved 2/09. Updates are done annually in November.	N/A annual updates only	Specific	Robert Salls	Bob Judge	
BAM	PSD	Particulate Lead (103)	QAPP For Particulate Lead Sampling CTDEEP, May 2012	Original approval May 2012. Updates are done annually in November.	N/A annual updates only	Specific	Randall Semagin	Bob Judge	

¹ PSD = Planning & Standards Div., (WPLK, BAJM) ² Rem = Remediation Div. (WFLR) ³ ERSPD = Emergency Response and Spill Prevention Div. (MMCA) ⁴ WPED = Water Permitting and Enforcement Div. (MMCA) ⁵ E&ED = Enforcement and Enforcement Div. (MMCA)

