



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 14 2012

MEMORANDUM

TO: Stephen Perkins, Director
Office of Ecosystem Protection, Region 1

FROM: Deborah G. Nagle, Director
Water Permits Division
Office of Wastewater Management

A handwritten signature in black ink, appearing to read "Deborah Nagle".

SUBJECT: NPDES Permit Quality Review for Region 1

I am pleased to provide you with the findings of the Regional National Pollutant Discharge Elimination System (NPDES) Program Review conducted for EPA Region 1.

The enclosed report summarizes the findings of EPA's Permit Quality Review (PQR). The PQR assessed topics across the NPDES program as they apply specifically to Region 1. We have included proposed action items for the region and states, based on findings of the various permit reviews. These reviews also help the EPA Headquarters (HQ) promote national consistency and identify areas where guidance and support is necessary.

The report includes a list of proposed action items to serve as the basis for ongoing discussions between Region 1 and your authorized states, as well as between Region 1 and EPA HQ. In order to facilitate these discussions, EPA HQ has divided the proposed Action Items into three categories according to the priority that should be placed on each Item:

- Category One - Most Significant: Proposed Action Items will address a current deficiency or noncompliance with a federal regulation.
- Category Two - Recommended: Proposed Action Items will address a current deficiency with respect to EPA guidance or policy.
- Category Three - Suggested: Proposed Action Items are listed as recommendations to increase the effectiveness of the state's or region's NPDES permit program.

The Category One and Category Two proposed Action Items should be used to augment the existing list of "follow up actions" currently established as an indicator performance measure and tracked under the EPA's Strategic Plan Water Quality Goals and/or may serve as a roadmap for modifications to Region 1 program management strategies. A complete description of the proposed Action Items is included in Section 4 of the report.

We believe the NPDES Permit Quality Review helped us to better understand the Region 1 NPDES program and identify strengths and opportunities for improvement for EPA HQ, Region 1 and its states.

Thank you for your cooperation and for the help of your staff in conducting the reviews, and in the development of the report and its findings. If you have any questions regarding this effort, please call me at (202) 564-9545 or Sharmin Syed of my staff at (202) 564-3052.

Attachments

REGIONAL NPDES PROGRAM REVIEW EPA REGION 1

December 14, 2012

Water Permits Division
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue N.W.
Washington D.C. 20460

CONTENTS

1.0 INTRODUCTION	1
2.0 REGION 1 REGIONAL REVIEW OVERVIEW	2
2.1 Select Accomplishments	2
2.2 Permit Issuance Status.....	2
2.2.1 Priority Permits.....	2
2.2.2 Backlog.....	3
2.2.3 10–Year Expired Permits	4
2.3 Power Plant Permitting.....	6
2.4 Upper Blackstone Water Pollution Abatement District Permit.....	6
2.5 Construction General Permit (CGP) and the National Historic Preservation Act (NHPA) and National Environmental Policy Act (NEPA).....	6
2.6 Watershed-Based Permitting for Nutrients	7
2.7 Stormwater and Municipal Separate Storm Sewer System (MS4) Permitting	8
2.8 Vermont Withdrawal Petition	8
3.0 PERMIT QUALITY REVIEW	10
3.1 Core Permit Reviews.....	10
3.1.1 Region 1 (Massachusetts and New Hampshire).....	11
3.1.2 Maine.....	16
3.2 Topic-Specific Reviews	20
3.2.1 Mercury Methods	20
3.2.2 Impaired Waters	22
3.2.3 TMDLs	23
3.2.4 Use of <i>E. coli</i> and <i>Enterococcus</i> Bacteria Standard.....	24
3.2.5 Antidegradation and Mixing Zones.....	26
3.2.6 Thermal Variances and Cooling Water Intake Structures (CWA §316(a) & (b)).....	28
3.2.7 Stormwater	30
3.2.8 Combined Sewer Overflows	34
3.2.9 Sanitary Sewer Overflows (SSOs) and Peak Flows.....	36
3.2.10 Concentrated Animal Feeding Operations	37
3.2.11 Whole Effluent Toxicity.....	39
3.2.12 National Pretreatment Program.....	43
3.2.13 Nutrients	49
4.0 SUMMARY OF FINDINGS AND PROPOSED ACTION ITEMS	59
4.1 NPDES Regional Program Review.....	59
4.1.1 Permit Issuance.....	59
4.1.2 Whole Effluent Toxicity (WET)	59
4.1.3 Stormwater	60
4.2 Permit Quality Review	60
4.2.1 Core Permit Review	60
4.2.2 Mercury Methods	61
4.2.3 Impaired Waters and TMDLs.....	61
4.2.4 Use of <i>E. coli</i> and <i>Enterococcus</i> Bacteria Standard.....	61
4.2.5 Thermal Variances and Cooling Water Intake Structures (CWA §316(a) & (b)).....	62
4.2.6 Stormwater	62

4.2.7 Combined Sewer Overflows65
4.2.8 Sanitary Sewer Overflows.....65
4.2.9 Concentrated Animal Feeding Operations65
4.2.10 Whole Effluent Toxicity.....66
4.2.11 Pretreatment Program.....69
4.2.12 Nutrient Action Items71

APPENDIX A – CENTRAL TENETS OF THE NPDES PERMITTING PROGRAM

APPENDIX B – CORE REVIEW CHECKLISTS

1.0 INTRODUCTION

This report presents findings of an EPA Office of Water (OW) Regional National Pollutant Discharge Elimination System (NPDES) Program and Permit Quality Review (PQR) conducted for EPA Region 1 in June 2010.

On a rotating basis, the Office of Wastewater Management, Water Permits Division (WPD) at EPA Headquarters (HQ) reviews Regional NPDES programs. Topics discussed during the review vary by Region, according to the needs and interest of the Region. EPA HQ reviews topics such as permit issuance backlog, Priority Permits, Action Items, and watershed-based permits before the review. A large component of each review is the PQR, which assesses whether a state adequately implements the requirements of the NPDES Program as reflected in the permits and other supporting documents (e.g., fact sheet, calculations). In this report, an entire section is devoted to the results of that PQR.

Through this review mechanism, EPA HQ promotes national consistency and identifies successes in implementing the NPDES program and opportunities for improvement in developing NPDES permits. The findings of the review may be used by EPA HQ to identify areas for training or guidance and by Region 1 to help identify or assist states in determining any needed action items to improve their NPDES programs.

EPA Region 1 oversees the NPDES Program for Connecticut, Maine, Rhode Island, and Vermont, and it implements the NPDES program in Massachusetts and New Hampshire. Connecticut, Maine, and Rhode Island are fully authorized (except for the Biosolids program). Vermont is not authorized to issue NPDES permits to federal facilities or to administer the Biosolids program.

The PQRs were performed during the third quarter of FY2010. WPD staff collected NPDES program information and permits from Regional and state staff, and a detailed PQR was performed for Maine and EPA Region 1 (Massachusetts and New Hampshire), including on-site visits from EPA HQ staff in June of 2010. WPD staff and managers traveled to Region 1 for the formal OW Regional Program Review in December 2010.

This report is organized as follows:

- Section 2—Region 1 Regional Review Overview
- Section 3—Permit Quality Review Summaries
- Section 4—Summary of Findings and Proposed Actions

2.0 REGION 1 REGIONAL REVIEW OVERVIEW

Regional Reviews assist in assessing the consistency and effectiveness of the Regional and state programs. The reviews also may include an analysis of the entire permitting workflow, progress on action items, progress on memorandum of understanding commitments or other legal arrangements, and progress on Government Performance and Results Act (GPRA) performance measures.

The Region 1 NPDES Regional Program Review explored several NPDES program accomplishments and issues, which are discussed briefly below.

2.1 Select Accomplishments

On the basis of the work conducted in preparation for the Regional Program Review, Region 1 deserves specific recognition for accomplishing the following:

- Generally, permits are well written and of high quality.
- Maine has a state toxics system, which caps the load of a water body at its existing load, and issues a waste load allocation (WLA) for each discharger and pollutant to that water body on the basis of the existing load. This is an extremely proactive approach to ensuring water quality is maintained in Maine.
- Overboard Discharge (OBD) permits: Maine has a number of straight pipe discharges from homes and small operations on the coast where subsurface systems are not feasible (generally because of rocky soil or lack of room for subsurface systems). These systems were treated as a separate category of permits during Maine's NPDES authorization, and are not tracked as NPDES permits. Maine has prioritized its OBD backlog and is actively working toward installing in-home treatment systems for these discharges.
- Backlog reduction: Region 1 has had high backlog rates and should be commended for increasing the percentage of current permits to 85.5 percent at the end of FY2010.

2.2 Permit Issuance Status

EPA tracks several permit issuance measures, including priority permit issuance, permit backlog, and 10-year expired permits. Priority permits and backlog are GPRA measures. The following permit issuance data for Region 1 were current as of September 30, 2010, reflecting the most recent data available at the time of the Regional Review.

2.2.1 Priority Permits

In FY2010, Region 1 continued to meet and exceed priority permits goals, with the exception of Vermont, which did not reach the state's commitment goal in FY2010, as shown below.

FY2010 Priority permit issuance

State	State-issued permits			All permits		
	Commitment	Issued	% Issued	Commitment	Issued	% Issued
Connecticut	6	6	100%	6	6	100%
Massachusetts	--	--	--	15	26	173.3%
Maine	2	3	150%	2	3	150%
New Hampshire	--	--	--	8	11	137.5%
Rhode Island	2	7	350%	2	7	350%
Vermont	2	0	0%	2	0	0%
Region total	12	16	133.3%	35	53	151.4%
National total	709	1,008	142.2%	792	1,097	138.5%

Overall, the number of priority permits Region 1 committed to issue in FY2011 was low, especially compared to the previous year. Primary candidates for FY2010 and FY2011 were permits expired greater than two years and permits associated with a total maximum daily load (TMDL) that are currently expired or will expire within the upcoming fiscal year. The table below details Region 1's priority permit commitments for FY2011.

FY2011 Priority permit selection and commitment

State	State issued permits			All permits		
	Candidates ^a	Selected	Commitment	Candidates	Selected	Commitment
Connecticut	36	28	6	37	28	6
Massachusetts	--	--	--	75	61	12
Maine	44	36	4	44	36	4
New Hampshire	--	--	--	24	21	4
Rhode Island	11	11	2	11	11	2
Vermont	37	10	1	37	10	1
Region total	128	85	13	228	167	29

^a Candidates in this table are permits that are expired two years as of the beginning of the fiscal year of reporting and any additional permits that will be eligible for re-issuance during the fiscal year that are designated in the National TMDL Tracking System (NTTS) as being associated with an approved TMDL.

2.2.2 Backlog

As part of GPRA, EPA measures nontribal permit backlog and tribal permit backlog. For nontribal backlog, as of the end of FY2010, Region 1 had not yet met the long-term national goal for current permits of 90 percent but did meet its FY2010 GPRA commitment of 80 percent. For tribal backlog, Region 1 achieved the national target for current permits of 90 percent. Both measures include facilities covered under non-stormwater individual, stormwater major individual, and non-stormwater general NPDES permits, and are presented in the table below. These figures also exclude discharges covered by the Vessels General Permit. The permits that tend to constitute the backlog are hydroelectric power, §316(b), and other more complicated permits.

Permit backlog status*

State	Tribal % current permits	Non-tribal % current permits
Connecticut	--	81.1%
Massachusetts	--	88.4%**
Maine	100.0%**	90.5%
New Hampshire	--	77.1%**
Rhode Island	--	81.3%
Vermont	--	80.2%
Vermont	--	100.0%**
Regional Total	100.0%	85.5%
National Total	87.8%	89.4%

*Table includes permit issuance status as of December 2009.

** indicates permits issued by EPA Region 1.

2.2.3 10-Year Expired Permits

According to data from September 2010, Region 1 has 10 individual major permits expired greater than 10 years and 23 individual minor permits expired greater than 10 years. Nationally (from March 2010 data), there are 292 individual permits expired greater than 10 years, 52 of which are majors and 240 of which are minors.

Permits expired greater than 10 years

State	Facility name	Type of facility	Expiration date	Status
Majors				
MA	Mirant Canal LLC	Electric Services	June 23, 1994	Issued, appealed, reissued, appealed again, then withdrawn. 316 changes, hundreds pages response to comments. Operating at less than 5% capacity.
MA	ENGC – Pilgrim Nuclear Power	Electric Services	April 29, 1996	Efforts being made for all power plants: 308 letters/data collection; requested contract support.
MA	Mount Tom Station	Electric Services	September 17, 1997	Efforts being made for all power plants: 308 letters/data collection. Sending second 308 letter for thermal model and CWIS BTA evaluation. ESA issues with NMFS.
MA	Somerset Power LLC	Electric Services	October 30, 1998	Converting system, plant sued on air issues. If coal gasification conversion not allowed, plant to close.
MA	Dominion Energy Salem Harb Sta	Electric Services	October 29, 1999	Efforts are being made for all power plants: 308 letters/data collection. May be closing based on ISO request to reduce electric generation.
ME	Holtrachem MFG. Company L.L.C.	Alkalies and Chlorine	July 29, 1997	No longer in business, waiting for watershed to come up - scheduled for early 2011
NH	P.S. of NH-Schiller Station	Electric Services	September 30, 1995	Efforts are being made for all power plants: 308 letters/data collection. Thermal sampling performed. Working on 316(b) draft permit.
NH	P.S. of NH-Merrimack Station	Electric Services	July 31, 1997	Efforts are being made for all power plants: 308 letters/data collection. Seeking OW acknowledgement of 316(b) and FGS BAT permitting approach. Draft permit goal of 12/31/10.
NH	P S N H – Newington Station	Electric Services	October 30, 1998	Efforts are being made for all power plants: 308 letters/data collection
RI	Dominion Energy Manchester St., INC.	Electric Services	October 19, 1996	RIDEM has been working with an EPA contractor to review permit application material. Comments issued on an impingement and entrainment technology evaluation report. Waiting for revised technology evaluation report and a thermal demonstration report. These reports are due to be submitted to RIDEM by 12/31/11. Permit reissuance goal is 9/30/12.

State	Facility name	Type of facility	Expiration date	Status
Minors				
CT	Greenwich Laurelton	Nursing Facility	April 6, 1995	Out in draft, but cannot Public Notice until facility pays several years of back fees
CT	Marianapolis Preparatory Sch	School	June 1, 1998	Planning to connect to the Thompson public sewer
CT	Tilcon, Connecticut, Inc.	Crushed & Broken Stone	June 1, 1999	Currently under litigation
MA	Fall River Marine Terminal	Petroleum Bulk Station	November 20, 1983	Legacy pollutants at site which is being redeveloped. Permit under development for FY11
MA	Billerica Jail and House of Co	Correctional Institution	September 30, 1989	Facility closed, will be terminated
MA	Milton Town of (Pumping Sta)	Sewerage System	August 27, 1991	Complications related to Upper Blackstone, want co-permittees
MA	Gosnold	Sewerage System	September 29, 1991	301(h)
MA	Invensys Systems	Electroplating	October 30, 1996	2 nd PN currently being drafted
MA	Marblehead W & S - Pump Station	Sewerage System	September 26, 1999	Co-permittee issue
MA	Biopure Corp	Pharmaceutical Preparations	December 31, 1999	RO permit. Permit under development for FY11.
MA	NAEA Energy, Massachusetts, LLC - Dwight Station	Electric Services	September 29, 2000	Covered under Hydro GP. Individual permit terminated
MA	Cabot Station	Electric Services	September 30, 2000	To be covered under Hydro GP.
MA	First Light Hydro Generating Co. Northfield	Electric Services	September 30, 2000	To be covered under Hydro GP.
MA	Riverside Station - NEUSC/HWPC	Electric Services	September 30, 2000	To be covered under Hydro GP.
MA	Chemical Station - NEUSC/HWPC	Electric Services	September 30, 2000	To be covered under Hydro GP.
MA	Hadley Falls Station - NEUSC	Electric Services	September 30, 2000	To be covered under Hydro GP.
ME	Cherryfield Foods INC	Canned Fruits, Vegetables, etc	June 30, 1996	
NH	P.S.CO. of NH-Jackman Hydro	Electric Services	September 1, 1983	To be covered under individual permit. To be noticed 2011.
NH	P.S.CO. of NH-Smith Hydro	Electric Services	September 1, 1983	To be covered under individual permit. To be noticed 2011.
NH	Conway Village Fire District	Sewerage System	July 17, 1991	Tying into town plant w/in 2 years
RI	Naval Station Newport - PW Dept. (PRNP4)	National Security	October 30, 1990	Facility is no longer active. RIDEM required that the facility submit a detailed map of its stormwater collection system and monitoring data of the discharge to demonstrate that there is no discharge of pollutants. Once this information is submitted, a formal decision on permit termination will be made. Termination decision goal 12/31/11.
RI	Chevron Env. Mgmt. Co.	Petroleum Bulk Station	September 21, 1992	Facility is no longer active. RIDEM Office of Water Resources is working with its Office of Waste Management to determine if there is a discharge of pollutants. Once this determination is made, a formal decision on permit termination will be made. Termination decision goal 12/31/11.
RI	Raytheon Company	Electroplating	March 30, 1995	Discharge has not been active for several years (facility has alternative wastewater disposal option). RIDEM is working to make a final decision to terminate permit (permittee objected to initial termination proposal). Termination decision goal 12/31/11.

2.3 Power Plant Permitting

The majority of 10-year expired major permits in the Region are power plants; Region 1 has been working to resolve this reissuance backlog with Clean Water Act (CWA) §316(a) best technology available (BTA) determinations and data collection from §308 letters sent to power plants. Region 1 would like EPA HQ to endorse its approach to best professional judgment (BPJ) BTA determinations for §316(b), generally and for Public Service of New Hampshire (PSNH) Merrimack Station in particular. EPA HQ generally agrees with the Region's §316(b) permitting actions, including for PSNH Merrimack Station. The Region also requests contractor support for §316(b) determinations, particularly for economic analyses.

2.4 Upper Blackstone Water Pollution Abatement District Permit

On May 28, 2010, the Environmental Appeals Board issued a decision related to an NPDES permit issued by Region 1 for the Upper Blackstone Water Pollution Abatement District (the District) for discharges from its publicly owned treatment works (POTWs) to the Blackstone River, an interstate water that flows through Massachusetts and Rhode Island. Eight parties filed petitions for review of various provisions of the permit, including limits for nutrients (nitrogen and phosphorus) and provisions adding satellite collection systems as co-permittees. The Board denied review of all challenges to the permit except one; the Board remanded the permit's provisions on co-permittees to the Region for further explanation of the legal and factual bases for regulating the separately owned municipal systems that discharge to the District. EPA HQ agrees with Region 1's proposed rationale for issuing POTW permits to co-permittees; the proposal is based on the need for proper operation and maintenance at indirect dischargers to the POTWs for the POTW to meet permit limits.

2.5 Construction General Permit (CGP) and the National Historic Preservation Act (NHPA) and National Environmental Policy Act (NEPA)

Region 1 is concerned with the ability of the Region and EPA HQ to promptly, accurately, and efficiently address NHPA compliance with respect to general permits. Region 1 requests guidance on handling NHPA issues and Endangered Species Act (ESA) issues that could come up related to CGP projects, and to ensure that the new CGP, which was under development at the time of the review, includes a systematic review for National Environmental Policy Act issues and does not lead to project-specific environmental assessments for individual construction projects. Two recent cases highlighted issues regarding authorization under the CGP and NHPA compliance:

- *Portsmouth Middle School Building Project (Portsmouth, NH)*: In September 2010, the federal Advisory Council on Historic Preservation (ACHP) requested records documenting the evaluation and determination of adverse effects to historic properties for the Portsmouth Middle School Building Project, including steps that EPA has taken or will take to comply with requirements of the state grant process. In response, Region 1 spoke to the New Hampshire Division of Historical Resources (NHDHR) and urged Portsmouth to follow NHDHR's recommendations to gain public input by making historical information about the affected schools available to the public. Methods could include a public session to develop an appropriate mitigation package for the impacts on

historic resources such as a curriculum on the history of the schools or signs explaining the historical significance of the schools, or both. Portsmouth followed NHDHR's recommendation, submitting Notices of Intent (NOIs) for coverage under the CGP in September 2010. The construction project has received CGP coverage.

- *Parade Mall Redevelopment (Portsmouth, NH)*: A similar situation arose for the Parade Mall Redevelopment Project in 2009; however, in this case, historic preservation concerns arose after CGP authorization and the beginning of construction. As of July 20, 2009, ACHP requested NHPA §106 documentation from EPA. The project submitted NOIs on October 12, 2007, and has since been covered under the CGP.

2.6 Watershed-Based Permitting for Nutrients

High-profile New England waters, including Long Island Sound, Lake Champlain, Great Bay, Narragansett Bay, and Buzzards Bay/Cape Cod suffer from severe nutrient impairments. Sources are different in New England from other parts of the country—urban stormwater and POTWs are often the most significant loads, while agriculture is a lesser issue than in the Midwest. The Region has been a leader in establishing stringent nutrient limits in permits, is grappling with nutrient reduction in stormwater, and is using a holistic, watershed-wide approach to address key impairments. All Region 1 states are moving forward to develop nutrient criteria, both to address existing impairments and prevent future degradation.

Some current issues and challenges for Region 1 are

- Stringent nutrient limits in POTW and municipal separate storm sewer system (MS4) permits are controversial because of cost to achieve the limits.
- In some cases, the best existing technology to reduce POTW discharges might not be sufficient to meet water quality standards (WQS) because of nonpoint source loads of nutrient pollution. This presents a challenge in writing a defensible permit because even if the discharge were eliminated, the water body would still not be meeting WQS.
- Need better understanding of effectiveness of stormwater best management practices (BMPs) for removing nitrogen.
- Need more effective regulatory tools to address nonpoint source loads from agriculture, septic systems, and other runoff.
- Cape Cod lawsuit seeks determination of whether septic systems and other groundwater discharges are CWA point sources.
- Proposal of Great Bay, New Hampshire NPDES permits with stringent nutrient limits will create local concern.

The Region would like visible support for its permit limits for both POTWs and MS4s where needed to meet WQS, because it is important for Region 1 stakeholders to understand this is part of a national effort on nutrients. The Region also would also like to ensure that any forthcoming stormwater regulation is sufficiently protective for impaired waters outside the Chesapeake Bay watershed.

2.7 Stormwater and Municipal Separate Storm Sewer System (MS4) Permitting

Stormwater contributes to two-thirds of the water quality impairments in Region 1. The Region has addressed this issue on a number of fronts, including numeric load targets in MS4 permits, residual designation of previously unregulated sources, support for municipal green infrastructure and low impact development (LID) work, and innovative TMDLs—including impervious cover TMDLs. The Region, however, is experiencing some challenges. One issue is that while residual designation authority can be an important tool for meeting WQS, it is resource-intensive and controversial. Also, MS4 permits raise difficult policy issues, and stringent requirements raise concerns among the regulated community. Municipalities face severe resource challenges in upgrading stormwater infrastructure as well. Finally, data to quantify reductions from LID/green infrastructure is not yet widely available, and the transition from permits focusing on BMPs to more stringent requirements based on water quality and TMDLs raises numerous policy and implementation issues.

Region 1 would like assistance from EPA HQ in resolving policy issues concerning MS4 permits, including such issues as the role of WQS requirements and when and how to develop numeric limits. It is important to the Region that any new stormwater regulation is a useful tool both to address existing impairments and prevent future degradation, is sufficiently protective for impaired waters outside the Chesapeake Bay watershed, and is compatible with other program areas, such as TMDLs and antidegradation.

2.8 Vermont Withdrawal Petition

In 2008 the Vermont Law School, on behalf of the Conservation Law Foundation (CLF), petitioned EPA to withdraw authorization of the NPDES program from Vermont for inadequate enforcement, failure to comply with public participation in enforcement requirements, lack of concentrated animal feeding operations (CAFO) permitting and enforcement, failure to have an antidegradation implementation procedure, failure to adequately conduct reasonable potential (RP) and antidegradation analyses in permit decisions, and failure to exercise its residual designation authority in administering its stormwater program. The most recent supplement also raises concerns about the Waterbury Treatment Plant's phosphorus discharges and a state statute that conditions municipal compliance on full state funding.

Discussions among Region 1, CLF, and Vermont have progressed on some issues, while others proved more difficult to resolve (e.g., public participation in enforcement and CAFO permitting). Region 1 and Vermont Department of Environmental Conservation are developing a draft corrective action plan and will be consulting with EPA HQ on some of the issues.

Secretary of the Vermont Agency of Natural Resources, Jonathan Wood, wrote to EPA Administrator Lisa Jackson and Region 1 Regional Administrator Curt Spalding on August 9, 2010, to request that EPA make a decision on the NPDES petition by October 15, 2010. EPA wrote a brief reply to this letter with a general update on October 14, 2010, which acknowledges some progress on several issues raised in the petition, but it states that a number of issues remain unresolved. Vermont committed to submit a draft CAFO permit to EPA for review by the end of December 2010. At least one of the outstanding issues will require action by state legislature to successfully address the issues raised by the petition.

At the time of the review, EPA planned to meet with senior leaders in Vermont to discuss a corrective action plan in January 2011, following political leadership transitions.

Region 1 would like support from EPA HQ to resolve these issues, develop a corrective action plan, provide national perspective, including information from other petitions on specific issues upon request, and work nationally to determine consequences for those states that fail to correct NPDES program deficiencies.

3.0 PERMIT QUALITY REVIEW

EPA has conducted NPDES PQRs since the mid-1980s and has revisited the review process periodically since then in an effort to promote permit quality to ensure a reasonable degree of national consistency with regard to core program requirements. Such reviews also serve to ensure that NPDES permits keep pace with developments in the NPDES program. Information developed during PQRs serves to inform broader Regional Reviews being conducted by EPA HQ.

PQRs are an evaluation of a select set of NPDES permits to determine whether permits are developed in a manner consistent with applicable requirements established in the CWA and NPDES regulations.

EPA's Region 1 PQR consisted of two components—a core review and a topic-specific review. The core review focused on core permit quality and included a review of the permit application, limits, monitoring requirements, special conditions, standard conditions, correspondence, documentation, and administrative process.

Topic-specific reviews target components or types of permits. The scope of a topic-specific review is determined in consultation with states on a case-by-case basis. Topic-specific reviews in Region 1 focused on the following areas: mercury methods and limits, discharges to impaired waters, TMDL implementation, use of *Escherichia coli* and *Enterococcus* standards, antidegradation and use of mixing zones, implementation of CWA §316(a) and (b), stormwater permitting, implementation of Long Term Control Plans (LTCPs) for combined sewer overflows (CSOs), sanitary sewer overflows (SSOs), implementation of CAFO requirements, implementation of whole effluent toxicity (WET) requirements, and pretreatment.

Objectives and Scope for the Region 1 PQR

The Region 1 PQR consisted of the following: a comprehensive core permit review in Maine and EPA Region 1 (permits for Massachusetts and New Hampshire) to provide an overall review of a sample of NPDES permits, and a topic-specific review of a sample of permits from all six Region 1 states to assess specific areas of concern. Information gathered from the Region 1 PQR will help guide discussions regarding making the permitting process more efficient. The results of the PQR also serve as a mechanism to provide information on the integrity of the NPDES Permit Program and to promote national consistency, in accordance with EPA's Permitting for Environmental Results initiative. Recommended action items are identified in Section 4 of this report. Details of the Region 1 PQR process and review results are provided below.

3.1 Core Permit Reviews

EPA conducted comprehensive core reviews with on-site visits in Augusta, Maine, and Boston, Massachusetts (EPA Region 1). The review team consisted of EPA HQ, Regional, and contractor personnel.

The core permit review process involves evaluating selected permits and support materials using basic NPDES program criteria. Reviewers complete the core review by examining selected

permits and supporting documentation, assessing these materials using PQR tools, and talking with permit writers regarding technical questions related to the permit development process. The following tools were primarily used for review, and are attached in Appendices A and B, respectively: (1) Central Tenets of the NPDES Permitting Program (developed during the 2000/2001 PQR); and (2) NPDES PQR Checklists for POTWs and Non-POTWs (developed during the 2000/2001 PQR and revised in 2008). Material reviewed as part of the Region 1 core review included NPDES permits, state WQS (including mixing zone provisions, bacteria standards, mercury standards and methods, and RP procedures), and various state permitting policy and guidance documents. In addition, discussions with Region 1 and state staff addressed a range of topics including program status, the permitting process, relative responsibilities, organization, and staffing.

The majority of the permits were chosen randomly from a list of permits issued after 2008 to ensure a review of recently issued permits. The remaining permits were selected on the basis of discussions with state and Region 1 staff, with an effort to primarily include major facilities, with an equal distribution of industrial and municipal permits. For the core review, a total of 14 permits were reviewed—4 permits each from Massachusetts and New Hampshire, and 6 from Maine.

3.1.1 Region 1 (Massachusetts and New Hampshire)

During the week of June 21, 2010, a PQR site visit was conducted at the EPA Region 1 Offices in Boston, Massachusetts. Within Region 1, NPDES permits are administered by the Office of Ecosystem Protection, primarily through the Industrial Permits Branch and the Municipal Permits Branch. EPA Region 1 issues all aspects of NPDES permits for Massachusetts and New Hampshire, and it oversees permitting for Connecticut, Maine, Rhode Island, and Vermont.¹

Personnel in the Region 1 office write the individual NPDES permits for Massachusetts and New Hampshire. In addition, the Region administers 11 NPDES general permits in Massachusetts (see <http://www.epa.gov/region1/npdes/mass.html>) and 9 general permits in New Hampshire (see <http://www.epa.gov/region1/npdes/newhampshire.html>). NOIs to be covered under these general permits are available on the Region 1 website.

Compliance monitoring and inspection support is provided by the Office of Environmental Measurement and Evaluation, and enforcement support is provided by the Office of Environmental Stewardship.

Universe of NPDES Permits: According to Integrated Compliance Information System (ICIS) data from September 2010, EPA Region 1 issues approximately 355 individual NPDES permits in Massachusetts and New Hampshire, with 265 permits issued in Massachusetts and 90 issued in New Hampshire. ICIS indicates that in Massachusetts 180 (68 percent) of these permits are current, while in New Hampshire 57 (63 percent) are current. When facilities covered under non-stormwater general permits are included, the numbers increase to 648/733 (88 percent) for

¹ Connecticut, Maine, and Rhode Island are authorized to administer the NPDES program, including issuing permits to federal facilities, and administering pretreatment and general permit programs (not biosolids). Vermont is authorized, but not to issue NPDES permits to federal facilities.

Massachusetts and 111/144 (77 percent) for New Hampshire. This is below the EPA goal of 90 percent of permits being current (i.e., not expired and administratively continued). The Region's NPDES permitting backlog percentage is decreasing as the Region issues general permits. With regard to priority permits, Region 1 met its goals in 2009 and finds the priority permit process useful (i.e., it helps focus resources).

Data Systems: Region 1 has a permit tracking system, and an internal network drive for tracking NPDES general permits. In addition, Region 1 permittees can submit discharge monitoring reports (DMRs) electronically via the Internet.

Permit Templates: Region 1 maintains a Web-based clearinghouse of permit development tools. The clearinghouse includes model fact sheets, model permit language, some statistical tools for calculating RP, letters, forms, and a range of other items. For example, the clearinghouse has several permit templates and copies of the most current permits and existing fact sheets. The Region indicated that templates are difficult to keep current. As a result, permit writers often use the most recent permit or fact sheet and update the requirements and basis. Team leaders review the most current language and note any changes.

In addition to the clearinghouse, Region 1 provides access to an extensive array of NPDES permit information for all Region 1 states (e.g., permits, fact sheets, response to comments, draft permits until a permit is final, general permits) on the EPA Region 1 website.

Permit Issuance Process: New facilities and new sources are relatively rare, and general permits are used to address many applicants. Region 1 staff monitor a printout of permits that need to be reissued and ensure that tracking system dates are correct. The Region sends out a reminder letter to permittees one year before permit expiration. Permit applications that are submitted are reviewed for administrative completeness. In addition, the administrative staff works with the permit writer to review the overall completeness of the application. The Region issues a notice of deficiency if it needs more information or if there is an administrative issue with the application. Applicants typically have 30 days to respond. If there is a data gap within the application, the Region may request additional data. Once the application is complete, the administrative staff enters a completeness date into the permit tracking system. Some facilities do not submit the appropriate testing data. The Region is working to improve data quality in NPDES permit applications (i.e., clarifying methods and detection and quantitation levels).

Permits are assigned to permit writers based on several factors (workload, specialty/knowledge of the facility, diversity of assignment). Between 5 and 14 permits are assigned to each permit writer at beginning of the year; however, not all of these are always completed because of competing priorities. For variety, permit writers might be asked to help develop general permits, stormwater permits, or 301(h) waivers. Because municipal permits in Massachusetts and New Hampshire differ in some respects, permit writers familiar with each state, and with the existing permit, might be asked to reissue particular permits. Specialists from other groups are assigned as needed for areas such as water quality, biology, standards, TMDL, although some water quality modeling is done by permitting staff.

Massachusetts signs on to the NPDES permit issued by Region 1, so the permit serves as a dual federal-state permit. After internal EPA review, the draft permit and fact sheet are provided to the state for review. The state personnel typically know the facility well and provide input to Region 1. A pre-draft version of the permit might also go to the state (and sometimes to the permittee for an informal factual review). The state has typically completed its review in one week; however, with recent reductions in its work force, the review times are now longer. Within Region 1, the offices responsible for DMRs submitted by facilities and ICIS also review the draft permit concurrently. Once the draft permit is ready, the draft permit and fact sheet are transmitted to the permittee and the state, and the public notice for the draft permit is published. state CWA section 401 certification must occur within 60 days of receipt of the draft permit. According to this timeline, it appears that the public has limited ability to comment on the state certification. Coastal zone certification is also required in Massachusetts, pursuant to Title 40 of the *Code of Federal Regulations* (CFR) 122.49. Until recently, permittees at times were not timely in providing the coastal zone certification, which is required at the time of permit application.

Most draft permits receive public comments. Region 1 has an outline that it uses to help organize the response to comment effort. A significant amount of resources are used to consider comments and develop responses.

Approximately four or five Region 1 NPDES permits are subject to hearing each year. These tend to be the complex or controversial permits (e.g., stormwater MS4, liquefied natural gas (LNG), power plants, environmental justice). The Region seeks to anticipate these issues and resolve them outside the court system if possible. Hearings require 30 days notice and are both time consuming and costly. Region 1's extramural funds are not sufficient to cover all the costs that can be associated with hearings.

Five to ten Region 1 NPDES permits are appealed each year. The Region has cleared many of these appeals. Often, permits with nutrient, stormwater, co-permittees, and power plant issues prompt appeals. These are generally labor-intensive permits to develop and issue.

Region 1 has only infrequently objected to state permits. Communication between the Region and the states is good and this tends to preempt any problems. The Region tends to focus on certain important or difficult issues, including water quality, nutrients, and power plants.

Permit Development: Permit writers are involved in developing the permit from beginning to end (draft, final, and appeal if needed). The administrative staff helps with processing the permit applications.

Permit writers consider data from numerous sources, starting with the permit application. In addition, WET test reports, water assessment reports, pretreatment reports, and even data from independent groups that have been trained in sampling are used to determine what is discharged and which pollutants are of concern. Although more background data are currently assessed than previously, data quality remains a concern. If the Region identifies gaps or has questions, it may use authority under CWA section 308 to obtain needed information. Permittees usually submit

all data if asked. Region 1 includes a standard reopener clause in its NPDES permits for cases in which modifications are needed after issuance.

Technology-based limits for industrial facilities are generally developed based on the applicable federal effluent limitations guideline (ELG), or, where no ELG exists, BPJ (the Region looks at best performance, similar ELGs, and other similar plants in assessing BPJ). For POTWs, technology-based limits are based on secondary treatment requirements.

The permit writer performs the water quality assessment in most cases. Region 1 has a few highly experienced permit writers who have developed a very good understanding of permit-related water quality data. These permit writers can informally assess water quality data and determine whether formal water quality assessment is needed. In certain situations, the permit writer might develop an analysis of the RP for a parameter to cause or contribute to an exceedance. This often is referred to as RPA (). If the permit writers need additional technical assistance, other Region 1 staff members with expertise in water quality are assigned. The Region also recently developed a spreadsheet tool that can be used to evaluate RP and to develop limits. Generally, the water quality assessment is included in the fact sheet.

Region 1 identifies pollutants of concern using several sources of information. As noted above, an RPA might be conducted in situations in which the receiving water is in non-attainment for a specific pollutant being discharged by a permittee. Permit writers review the data in the application and, if the pollutant levels are close to water quality criteria, RP is calculated. Permit writers also use the prior permit, in combination with an assessment as to whether any process changes have occurred, to determine whether a pollutant needs to be fully analyzed. Permit writers typically recognize when an analysis is needed to ensure that the limits are defensible.

The narrative conditions vary throughout the permits; some conditions are verbatim from the WQS, while some are BMPs (e.g., plans). Storm water permits often impose BMPs. Other conditions can include studies, or monitoring for power plants (e.g., thermal discharges, ichthyoplankton, and 316(b) cooling water intake velocity).

Standard conditions are included in Part II of the Region 1 permits, which is an attachment. These are consistent with federal requirements. State conditions are boilerplate unless certification conditions are included.

Monitoring must be representative of typical operating conditions. Permit writers confer with inspectors and can change the monitoring requirements if there is a reason to do so. Normally monitoring changes are based on new information.

If a facility has a pretreatment program, the Region 1 coordinator reviews the pretreatment provisions of the permit and indicates how to adjust the permit language for each facility. Region 1 asks that some application Form 2A information not be submitted.

Biosolids requirements are self-implementing. Permit writers use standard conditions with guidance to address biosolids.

For quality assurance, the Region uses a sign-off sheet for reviewers of draft and final permits. Team leaders for the industrial and municipal sections are part of the sign-off chain, as are ICIS and enforcement staff.

The following issues have proven challenging for Region 1 in NPDES permitting:

- Section 316(b) permits (because of unfinished regulations and the complexity involved in addressing the range of issues associated with 316(b) permits)
- Novel TMDLs (e.g., loading percent reductions)
- Nutrients
- Section 301(h) waivers
- Satellite systems
- Stormwater permits

Region 1 Findings—Massachusetts Permits

EPA reviewed four Massachusetts permits and fact sheets developed and issued by EPA Region 1. In general, these permits and fact sheets were of good quality. All permits appeared to meet federal requirements. Some observations regarding these permits are provided below.

Permit Documentation: In reviewing specific permits, certain documentation issues were identified. For example, in some cases, discussion of pollutants of concern and the RPA results could not be found in the administrative files. Discussion with Region 1 staff indicated that the Region's experienced permit writers at times use their experience and judgment to assess, according to a comparison of effluent data and relevant water quality criteria, when a water quality-based limit must be developed and that this is not always documented in the permit file (although the basis for any such limits is generally discussed in the permit fact sheet). In close cases, the permit writers calculate whether RP exists. Only recently has the Region developed a standardized spreadsheet tool to calculate RP and water quality-based limits.

In addition, in numerous permits, effluent limitations were simply carried forward from the previous permits with no discussion or explanation in the fact sheets of the technical basis for the limits. It is important to document either that no conditions have changed, and thus the earlier limits remain appropriate, or the basis for the limits in the current permit documentation. As permits are reissued, the basis for limits in prior permits becomes increasingly difficult to identify and review for both the permit writer and the public.

Region 1 Findings—New Hampshire Permits

EPA reviewed four New Hampshire permits and fact sheets developed and issued by EPA Region 1. Overall, the quality of the permits and fact sheets was good. All permits appeared to meet federal requirements. For all permits reviewed, better documentation of the process used to determine pollutants of concern, RPA, calculations, and the like, should be provided in the fact sheet/statement of basis. Additionally, the latitude/longitude of the discharge location(s) should be included. In most cases, the physical address of the facility was provided in the cover page, but it is possible for outfalls to be located elsewhere. A more thorough description of the water quality where the discharge is occurring should be provided. A more complete narrative of the designated uses of the receiving water should be included in either the permit or fact sheet.

3.1.2 Maine

Maine received NPDES program authorization in January 2001. The Division of Water Quality Management (DWQM), within the Department of Environmental Protection (DEP), issues NPDES permits and OBDs. Maine DWQM issues NPDES permits for approximately 165 POTWs (60 major permits) and 221 non-POTWs (77 major permits). Between 2000 and the summer of 2010, Maine DEP/DWQM reduced its NPDES backlog from 55 to 5 percent. The Environmental Assessment Division (monitoring, biomonitoring, geographic information system, WQS, water quality modeling, TMDLs, and such) and the Watershed Management Division (nonpoint source, stormwater, and such) also provide some support for NPDES permitting. Maine DEP has regional offices in Bangor, Portland, and Presque Isle.

DWQM has issued the following nine NPDES general permits:

- Antifouling Paint Contaminated Wash Water
- Aquatic Pesticides for the Control of Mosquito-borne Diseases
- Atlantic Salmon Aquaculture
- Construction Activity
- Large Commercial Passenger Vessels (LCPVs)
- Post Construction Discharge of Stormwater in the Long Creek Watershed
- Multi-Sector Stormwater General Permit (MSGP) (Industrial).
- Municipal Separate Stormwater Sewer System (MS4) permits
- Post Construction Discharge of Stormwater in the Long Creek Watershed

Maine DEP/DWQM also issues OBDs. These permits address the discharge of sanitary wastewater from homes and small operations on the coast where septic systems (i.e., subsurface systems) cannot be used because the soil is too rocky. OBD permits were treated as a separate category of permits (i.e., not NPDES permits) during NPDES authorization. The state has a separate law that addresses OBD permits and a state law that requires the removal of these discharges over time (i.e., 50 are removed each year).

Maine is not authorized to administer the biosolids program. A separate group within DEP addresses biosolids management. Pretreatment requirements are included in Maine NPDES permits. At least two Maine delegation issues remain. First, Maine's authority to issue NPDES permits on tribal lands continues to be a subject of judicial action. The most recent tribal permits were issued by EPA in 2005. Second, at the time of authorization Maine did not yet have state authority for issuing permits regulating cooling water intake structures (CWISs) under §316(b) of the CWA. Maine now has that state authority but has not applied for 316(b) authorization; as of December 2010, Region 1 has not written any 316(b) permits in Maine, and 316(b) regulations are not being implemented in Maine.

Permit Issuance Process: Each fall, DWQM develops a list of permits to be issued in the upcoming year including preliminary identification of permit writer, inspector, and enforcement staff assignments. The list is circulated internally and sent to EPA around November 1 for input regarding new issues or data; it is then finalized by December 1. Once the schedule has been finalized, the permitting section head coordinates with DWQM administrative staff to compile

the information and documentation necessary to develop each permit. The information and documentation generally consists of:

- A copy of the most current permit (and any modifications or revisions).
- A Permit Compliance System (PCS)/ICIS data retrieval for the most recent three years
- A printout of WET test results, mercury test results, and the priority pollutant and analytical chemistry dates in which testing was conducted for the most current 60-month period
- A printout of the Chapter 530 statistical evaluation conducted on the WET data
- The status of the receiving water
- A copy of the application or NOI
- Other information that is site-specific or involves water quality issues.

DWQM sends out permit applications four to five months before permit expiration. Completed permit applications are submitted before permit expiration; Maine does not have a requirement to submit NPDES permit applications 180 days before expiration. Generally, the applications are processed in a two-month period. Maine uses EPA NPDES application forms 2C, 2D, 2E, and 2F. The state has its own general application form (and its own POTW form). These forms identify outfalls for use in modeling. Once complete applications are received, relevant information is entered in the state's Application Tracking System, and the permits are assigned to permit writers.

Permits are assigned to permit writers by group/category and to build redundancy in staff knowledge. An internal meeting is held to coordinate permit development and to give relevant parties the opportunity to identify data gaps, trends, compliance problems, and other issues that could affect permit terms. This meeting is used to develop a timeline for needed activities (site visits, filling data gaps, and such). A 10-day internal comment period is provided. Follow-up meetings are coordinated as necessary.

Once the permit writer has the relevant information, the compliance inspector is notified that the permit is under development. Meetings are scheduled as needed to discuss the information or any concerns. Three types of draft permits might be developed:

- **Internal Draft**—An informal working draft document that fleshes out issues and permit language and builds consensus before sharing with external parties. An internal draft might not be needed if there are no significant issues or changes (this is communicated in the internal meeting and via email). Following distribution of the internal draft, a 14-day internal comment period is provided, and the permit writer must consult with the commenter and address (accept or reject) the comments.
- **Preliminary Draft**—An informal working draft document that is intended to build consensus between the department, EPA, the permittee, and any interested parties. This draft helps to address personnel changes, new policies, new boilerplate language, and new source and/or process descriptions. A preliminary draft might not be needed if there are no significant issues or changes to the permit. Following distribution of the preliminary draft, a 14-day internal comment period is provided, and the permit writer must consult with the commenter and address (accept or reject) the comments.
- **Proposed Draft**—A formal document that provides the permittee, state and federal agencies, and other parties who have notified the department of their interest an

opportunity to comment on the draft permit (DWQM maintains an interested parties list). A 30-day comment period is provided for interested parties, and the permit writer must consult with the commenter and address (accept or reject) the comments. Meetings can be conducted as needed. Comments that result in changes to the permit, or that are rejected but would have resulted in such changes, must be addressed in the response to comment section of the permit record. If comments warrant significant revisions to the permit, another draft permit will be prepared; otherwise, the final permit is prepared for signature. The permit sign-off sheet is attached to the proposed draft, and includes signature from the permitting staff and various other staff, including compliance, enforcement, and the Division of Environmental Assessment.

Permit writers might draft some permit provisions before all the relevant data is received (to avoid delay) and will complete the permit once the requisite information and analyses are completed.

Overall, the DWQM receives significant comment on eight to 10 permits a year. This is because DWQM shares information with stakeholders while maintaining a professional relationship and works to eliminate surprises at each stage of permit development.

Once all comments have been addressed, the permit writer formats the document for electronic signature by the Commissioner. Once signed, the permit is distributed to the permittee (a facility can receive a hand-signed permit if requested), and an electronic copy is sent to the compliance staff. The tracking system form is completed. DWQM maintains PDF and Word versions of each permit. The Word version is often used as the template for the next permit. Delivery and read receipts are maintained because the appeal schedule starts once the permit is received.

Very few permits are appealed (perhaps one per year; six have been appealed in the past 18 years). Again, this is because DWQM encounters relatively few highly contentious issues and works to address and resolve these issues during the permit development process. Maine provides for hearings at the permit application stage. The state allows anyone to appeal an NPDES permit (there is no need to comment on the permit to preserve the ability to appeal). For the few new discharges each year, a public meeting must be held for each application.

DWQM generates a monthly report of permit actions, several state reports, and an annual report to the legislature. DWQM is diligent about retiring inactive permits (facilities are notified by letter). The state does not want to perpetuate inactive or expired permits. The DWQM staff members talk with permittees before retiring a permit, but they make these actions effective immediately.

DWQM implements a very rigorous toxics program under Chapter 530 (section 4F) of the Code of Maine Rules (CMR). Under this program, DWQM evaluates discharges of toxic pollutants into freshwater systems to prevent both local impacts and cumulative impacts from multiple dischargers. DWQM uses a software program named De-Tox to implement this program, which essentially evaluates three aspects of each wastewater facility in a watershed: (1) the facility's history of discharges; (2) the potential toxicity at the point of discharge on an individual permit basis; and (3) the facility's contribution to the cumulative toxicity within a river segment (i.e., assessed from the foot of the relevant river segment). The value that is most protective of

water quality is used as an allocation for the specific facility and pollutant. DWQM has used the De-Tox program since 2005, and this approach is based on a complete reassessment of its toxics regulations.² The approach previously did not address background or include any reserve for assimilative capacity. Under the new approach, DWQM reserves 10 percent for background, and 15 percent for assimilative capacity (i.e., the permittee is allocated 75 percent of ambient water quality criteria (AWQC) and must meet the water quality criteria). This system uses a five-year rolling data window. Four levels of testing requirements are specified in permits under the current approach: (1) WET (surveillance); (2) WET (screening); (3) analytical chemistry; and (4) priority pollutants (once per permit term).

Maine also has an advanced biomonitoring program. Maine initiated a statewide Biological Monitoring Program in 1983 that looks at the macroinvertebrate communities in rivers and streams. In 1986 a revised water quality classification law was passed that requires that the DEP consider the ecological health of the resident biological community when assigning water quality classifications. These impact-based standards require that defined levels of biological integrity be maintained. More information on this program is at <http://www.maine.gov/dep/blwq/docmonitoring/biomonitoring/index.htm>.

DWQM has developed several permit templates and a detailed fact sheet template. However, permit writers often use the most recent permit and fact sheet as templates, because these reflect the most current permit language. Standard conditions, which were updated in 2000, are developed by the state Attorney General's office, and are attached to the permit.

DWQM's data management system is in transition. DWQM adopted a data management system used in North Carolina (Environmental Facility Information System, or EFIS). Data moves from the DMR to EFIS to PCS. The administrative staff and the permit writer initiate information collection as outlined above. Permit files are kept in the DEP/DWQM offices. The compliance staff have separate files.

Atlantic salmon and shortnose sturgeon are listed as endangered species. DWQM works with the National Oceanic and Atmospheric Administration (NOAA) to ensure that NOAA understands the permitting process and may send NOAA internal drafts of permits (NOAA is often slow to comment). The DWQM also encounters novel issues such as hatcheries where Maine has numeric WQS that are more stringent than EPA's ELG.

Maine does not have many TMDLs (most impairment is due to nonpoint sources). Receiving water quality information is available in the state's water quality assessments (303(d)/305(b)), and TMDLs are developed if needed. Permit writers have access to this water quality and impairment information through various reports and meetings.

² DWQM evaluated 2000 WET tests and 800 priority pollutants tests, and found that lower dilution ratios (e.g., 0-20/1) resulted in some parameters causing a water quality problem.

Maine Core Review Findings

The core review was based on an examination of six Maine NPDES permits. Overall, permit quality appeared to be good. Significant findings regarding these permits are discussed below.

High Quality Permits and Fact Sheets: In general, Maine's DEP has very good fact sheets and permits. Fact sheets are very descriptive and in general do a good job of explaining the basis for the permits. In addition, the permit history and list of similarities to and differences from the previous permit(s) are very helpful. Overall, the permits reviewed appear to be generally consistent with core NPDES tenets. The quality of the fact sheets and permits appear, in part, to be a function of the state's good organization, written policies and procedures, effective communication, and focus on schedule and quality.

Documentation of Permit Basis: DWQM's fact sheets are very good; however, certain aspects could be strengthened. First, the fact sheets reviewed do not include a clear discussion of which pollutants were evaluated and why, other than to state that they were carried forward from the previous permit, regulated by ELGs, or detected in the effluent. Additional discussion of how pollutants of concern are selected would help to document that all relevant pollutants were considered and evaluated where appropriate. Also, when limits are carried forward from the prior permit, DEP should document or reference the technical basis for such limits, and document that relevant conditions at the facility have not changed since the limits were originally calculated. DEP should also document in additional detail which effluent limitation guidelines apply to a facility.

File Documentation: Although permit file documentation was generally good, in some cases permit files do not include expected items. For example, it was not always clear what data were submitted with state POTW application forms.

3.2 Topic-Specific Reviews

3.2.1 Mercury Methods

EPA's regulations require that measurements included on NPDES permit applications and on reports required to be submitted under the permit, generally be made using analytical methods approved by EPA under 40 CFR Part 136. See 40 CFR 122.21(g)(7), 122.41(j), 136.1, 136.3, and 136.6. Four analytical methods for mercury in wastewater have been approved for use under Part 136: Method 245.1, Method 245.2, Method 245.7, and Method 1631E. Methods 245.1 and 245.2, approved by EPA in 1974, can achieve measurement of mercury to 200 nanograms per liter (ng/L). Method 245.7, approved March 12, 2007, has a quantitation level of 5.0 ng/L. EPA also approved Method 1631 Revision E in 2002, with a quantitation level of 0.5 ng/L. Most state mercury water quality criteria adopted for the protection of aquatic life and human health generally are in the range of 1 to 50 ng/L, which is well below the measurement level possible with Methods 245.1 and 245.2. In contrast, Methods 245.7 and 1631E do support the measurement of mercury at these low levels.

An August 23, 2007, memorandum from EPA's Office of Wastewater Management Director, James A. Hanlon, to the Regional Water Division Directors clarifies and explains that, in light of

existing regulatory requirements for NPDES permits, only the most sensitive methods, such as Methods 1631E and 245.7, are appropriate in most instances for use in deciding whether to set a permit limitation for mercury and for establishing sampling and analysis requirements in a permit. See *Analytical Methods for Mercury in National Pollutant Discharge Elimination System (NPDES) Permits*, at http://www.epa.gov/npdes/pubs/mercurymemo_analyticalmethods.pdf.

This portion of the review looked at the analytical methods or quantitation levels, or both, specified for monitoring requirements in permits following promulgation of the more sensitive methods and whether permits reflect consideration of method quantitation levels for analytical methods approved by EPA under 40 CFR Part 136.

EPA reviewed eight permits (two each for Massachusetts, Maine, Rhode Island, and Connecticut) to determine whether justifications for the mercury limits, monitoring conditions, and appropriate analytical methods are provided in the permit or fact sheet.

Massachusetts regulations specify that sampling procedures for 314 CMR 4.00 must be approved by the DEP, and several approved procedures are listed; the list does not include 40 CFR Part 136, although that is not required because Massachusetts is not an NPDES-authorized state (314 CMR 4.03(6)). Maine has interim effluent limitations and controls for the discharge of mercury that aim to limit the discharge of mercury to surface waters of the state through implementation of pollution prevention plans, effluent testing, and the establishment of interim effluent limits for some permittees (Chapter 519). Chapter 519 requires the use of EPA methods 1669 and 1631.³ Rhode Island regulations specify the use of methods in accordance with 40 CFR Part 136 (Water Quality Regulations, Rule 22). Connecticut's WQS specify methods consistent with 40 CFR 30 or other equivalent methods approved in writing by the Commissioner (WQS, 28).

A Northeast Regional Mercury TMDL was finalized in 2007. This TMDL is a plan to reduce mercury concentrations in fish so that WQS can be met. The plan covers Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont and was developed in cooperation with the New England Interstate Water Pollution Control Commission (NEIWPCC). This TMDL relies on mercury minimization plans rather than WLAs. It also addresses in-region and out-of-region contributions of mercury. See <http://www.neiwpcc.org/mercury/mercurytmdl.asp> and <http://www.mass.gov/dep/water/resources/tmdlfac.htm>.

Mercury Methods Findings

All eight permits reviewed contain mercury monitoring requirements, and six contain effluent limitations. Five of those with limits specify a method, quantitation limit, detection limit, or required reportable value of 200 ng/L (i.e., less stringent than the levels achieved by methods 245.7 or 1631E). This is below the mercury limits for one Massachusetts permit and one Connecticut permit, and above the mercury limit for one Rhode Island permit and two Maine permits. However, the one Massachusetts permit with mercury limits (with a minimum detection level (MDL) of 200 ng/L) and the two Maine permits (with reportable limits of 200 ng/L) specify

³ 38 MRS §420(1-B), and 413(11) also address mercury regulation in the state, as do regulations at 06-096, Ch. 584.

the use of 1631E and 1631, respectively. All six permits specify the use of methods in 40 CFR Part 136.

Of the two permits that require only monitoring for mercury, both specify the use of methods that are consistent with 40 CFR 136, and one Rhode Island permit includes an MDL of 200 ng/L:

- Massachusetts: One permit with mercury limits specifies MDL of 200 ng/L (below limit) and the use of 1631E. One permit with monitoring only specifies methods pursuant to 40 CFR Part 136.
- Rhode Island: One permit with mercury limits specifies a quantitation level of 200 ng/L (above the limit). One permit that requires monitoring only specifies an MDL of 200 ng/L.
- Maine: Both permits include mercury limits (imposed by regulation), reporting limits of 200 ng/L, and specify the use of 1631.
- Connecticut: Permits include mercury limits and minimum test levels of 200 ng/L.

3.2.2 Impaired Waters

CWA section 303(d) requires states to identify and establish a priority ranking for waters not attaining WQS despite implementation of technology-based requirements (i.e., impaired waters). For these priority waters, the states must establish TMDLs for pollutants causing impairments. The focus of the impaired waters review was to verify that permits and fact sheets acknowledge the 303(d) status of receiving waters and to verify that impairing pollutants are being addressed in NPDES permits before TMDLs are completed. With regard to the findings below, note that in some cases a facility might discharge to a water segment that is impaired but may not discharge a pollutant of concern. Additionally, it is possible that an impairment was considered but that documentation was not included in the fact sheet.

Impaired Waters Findings

For impaired waters, EPA examined 10 permits, two each from Massachusetts, New Hampshire, Rhode Island and Connecticut, and one each from Maine and Vermont. Of these 10 facilities

- The two Connecticut permits (CT0026794; CT0003701) are industrial facilities that discharge to waters impaired for unknown causes and *E. coli*. The fact sheets do not discuss the impairments and the permits do not include limits for *E. coli* (note: the facilities are not likely to discharge *E. coli*).
- The two Massachusetts permits and fact sheets (MA0100994; MA0101800) discuss the relevant impairments including dissolved oxygen (DO), nutrients, turbidity, and noxious weeds, and the permits include limits for nutrients and TSS. The Northeast Regional Mercury TMDL discussed above includes Massachusetts.
- The two New Hampshire fact sheets (NH0100153; NH0100595) discuss impairments (including *E. coli*, phosphorus, DO, chlorophyll *a*) but do not discuss impairment for mercury (atmospheric deposition). The permits include limits for relevant pollutants (e.g., *E. coli*, phosphorus, DO), but not for mercury (note: the Regional Mercury TMDL includes New Hampshire).
- For the two Rhode Island permits (RI0000043; RI0100064), one fact sheet contains an antibacksliding discussion that is structured to discuss impairments that apply to the

facility's receiving water body, but the discussion does not address the two specific impairments (*Enterococcus* and benthic-macroinvertebrate integrity). The permit includes a fecal coliform limit and toxicity monitoring, as well as limits for metals, nutrients and other parameters. The second fact sheet does not expressly discuss impairments (e.g., DO, fecal, eutrophication). The permit includes effluent limitations for fecal coliform and total nitrogen, but not for DO or nutrients other than total nitrogen.

- The Maine permit and fact sheet (ME0100501) discusses DO impairment immediately downstream, but the permit does not include limits for nutrients. The fact sheet indicates that total phosphorus was monitored seasonally in the prior permit and such monitoring was being removed based on BPJ. The receiving water is also impaired for *E. coli*, and the permit includes limits and monitoring requirements for *E. coli*.
- The Vermont permit (VT0100374) was issued in 2001 and mentions impairments that existed at the time of issuance. The fact sheet cites the 2000 303(d) listing for the Black River due to nutrient enrichment. The permit includes a seasonal monthly average limit for phosphorus that is linked to a compliance order, which (per the fact sheet) makes the effective date of the limit 9/30/2004 (amended permit effective 9/10/01; expiration 9/30/2003). The permit includes a seasonal limit for phosphorus to take effect following the facility upgrade. The fact sheet explains the basis for these requirements. It also notes that the permit includes a reopener clause that can address changes in conditions of the receiving water.

3.2.3 TMDLs

A TMDL is a calculation of the maximum quantity of a given pollutant that may be added to a water body from all sources without exceeding its applicable water quality standard. States must establish TMDLs for all impairing pollutants—those pollutants that prevent waters from attaining WQS after implementation of applicable technology based requirements. Where a TMDL has been established for a water body and approved by EPA, water quality-based effluent limits (WQBELs) should be consistent with the assumptions and requirements of any WLA for the discharge.

The focus of the TMDL review has been to verify that final TMDLs applicable to point sources are being implemented in NPDES permits. For the TMDL review, EPA examined 12 permits, two each for Massachusetts, New Hampshire, Rhode Island, Maine, Connecticut and Vermont.

TMDL Findings

Applicable final TMDLs were identified for 11 of the 12 permits reviewed (for one Rhode Island permit no applicable final TMDL was identified). Of these 11 permits, seven fully implement the applicable WLAs (two in Massachusetts, two in Vermont, and one each in New Hampshire, Rhode Island, and Maine). Of the four that do not

- One New Hampshire permit includes interim limits and a compliance schedule with a two-year period of phased limits to achieve compliance with the TMDL for phosphorus, five-day biochemical oxygen demand (BOD5), total suspended solids (TSS), and ammonia; final limitations for BOD5, TSS, and ammonia fully implement the TMDL as outlined in the 2003 permit modification.

- One Maine permit fully implements the TMDL for BOD, ammonia nitrogen, total phosphorus, aluminum, and copper. Of the toxic substances included in the TMDL (silver, arsenic, selenium, copper, lead, zinc, aluminum), the fact sheet discusses the removal of limitations for arsenic, lead, silver and zinc but does not discuss why selenium limitations are not applicable or implemented from the TMDL.
- Two Connecticut permits include monitoring and limits for toxicity, although a fact sheet was unavailable for review, so it was unclear if these limits are in compliance with the WLA included in the TMDL.

3.2.4 Use of *E. coli* and *Enterococcus* Bacteria Standard

In its 1986 *Ambient Water Quality Criteria for Bacteria* document, EPA determined that *E. coli* and *Enterococcus* are the most reliable indicators of bacteria in surface waters and recommends that these two indicators serve as the basis for bacterial WQS. *E. coli* is recommended as an indicator criterion for fresh waters, and enterococci is recommended as an indicator criterion for fresh waters and marine waters.

The EPA-recommended recreational water quality standard (WQS) for *E. coli* is based on two criteria: (1) a geometric mean of 126 organisms/100 mL based on several samples collected during dry weather conditions; or (2) a single sample maximum based on designated use (e.g., 235 organisms/100 mL for designated beach). The EPA-recommended recreational WQS for enterococci also is based on two criteria: (1) a geometric mean of 33 organisms/100 mL (fresh water) or 35 organisms/100 mL (marine waters); and (2) a single sample maximum based on designated use. EPA published approved test methods for *E. coli* and enterococci in wastewater on March 26, 2007 (72 FR 14220), which were added to 40 CFR Part 136.

Massachusetts has fecal coliform standards for drinking water intakes and uses *E. coli* or enterococci at bathing beaches; these standards are consistent with federal criteria (314 CMR 4.05(3)(a)4). The same *E. coli* or enterococci standards are also used for other waters and during non-bathing season, except the sampling requirements are more flexible.

Maine regulations specify that Class B waters must meet seasonal *E. coli* levels that are more stringent than federal criteria, and Class C waters must meet seasonal *E. coli* levels that are as stringent as federal criteria. Class AA and A must meet natural background levels. Maine is subject to 40 CFR 131.41, bacteriological criteria for those states not complying with CWA section 303(i)(1)(A), except for SA waters, and SB and SC waters with human sources of fecal contamination.⁴

Connecticut uses *E. coli* criteria that appear consistent with the federal criteria for Classes AA, A and B waters with designated swimming, non-designated swimming, and all other recreational uses. Connecticut uses enterococci at SA and SB waters with designated swimming and all other recreational uses (CT WQS, 12/2002, Appendix B).

Rhode Island has standards for primary contact recreational swimming for fresh water and sea waters for both fecal coliform and enterococci. These appear consistent with their federal

⁴ Title 38 of the Maine Revised Statute describes the classes of surface waters in sections 465 through 465B.

counterparts (Rhode Island Water Quality Regulations, Table 1 – 8.D.(2); Table 2 – 8.D.(3)). Rhode Island is subject to 40 CFR 131.41, bacteriological criteria for those states not complying with CWA section 303(i)(1)(A).

Vermont has established standards for *E. coli* that are at least as stringent as federal requirements (VT WQS sec. 3-02 to 3-04).

New Hampshire law specifies *E. coli* standards for Class A and B waters, and enterococci standards for tidal waters. The state requirements appear to be as stringent as federal criteria (NH Revised Statutes Annotated (RSA) 485-A:8).

Select permits were reviewed to assess implementation of *E. coli* standards.

***E. coli* and Enterococcus Bacteria Standards Findings**

In general, the 10 permits reviewed include pathogen limits that reflect state WQS. Of these permits, all include *E. coli* limits except for two, one of which focuses on shellfish sanitation protection and the second of which includes a fecal coliform limit. The two Massachusetts permits reviewed are transitioning from fecal coliform limits to *E. coli* within the permit term.

The two Massachusetts permits reviewed, Easthampton WWTF (MA0101478) and Athol WWTF (MA0100005), include seasonal limits for fecal coliform (200/400 colony forming units per 100 milliliters (cfu/100 mL)) effective for one year, and for *E. coli* (126/409 cfu/100 mL) for the second through fifth years with monitoring for *E. coli* in year one. The fact sheet explains that the 409-cfu limit is the 90 percent distribution of the geometric mean of 126 cfu/100 mL.

The two New Hampshire permits reviewed, Town of Jaffrey (NH0100595) and Littleton WWTF (NH0100153), include *E. coli* limits similar to those above (126/406 cfu/100 mL, but not seasonal), based on state WQS for Class B waters. The fact sheet for Jaffrey includes effluent data but no explanation of the *E. coli* limits. The fact sheet for Littleton discusses the basis of the *E. coli* limits.

The Maine permit for Van Buren (ME100684) includes limits for *E. coli* (126/949 col/100 mL). The fact sheet explains the limits (including that dilution will allow the daily maximum limit to meet state standards (236 colonies per 100 mL). The permit for Biddeford (ME0100048) includes limits for fecal coliform (15/50 colonies per 100 mL). The fact sheet explains that these limits are consistent with the National Shellfish Sanitation Program.

One Connecticut permit, Pfizer (CT0000957), includes requirements to monitor for fecal coliform and *E. coli*. The fact sheet explains this is to address concerns raised by a fecal coliform study conducted by the permittee. The second permit, Dow Chemical (CT0003131), includes seasonal limits and monitoring for fecal coliform (200/400 per 100 mL). The fact sheet for this permit was not available for review.

The two Vermont permits reviewed, Town of Richmond (VT0100617) and Town of Northfield (VT0100242), include limits for *E. coli* (instant maximum, 77/100 mL). This meets state requirements for Class B waters.

3.2.5 Antidegradation and Mixing Zones

The implementation of antidegradation policy and mixing zone procedures were reviewed as part of the core review (i.e., based on a review of four permits each from Massachusetts and New Hampshire and six from Maine).

Massachusetts' antidegradation regulation has four tiers: existing uses (Tier 1), which must be protected; high quality waters (Tier 2), with limited degradation allowed where specific requirements are met; outstanding resource waters (Tier 2.5), to which new or increased discharges are prohibited except for the express purpose of maintaining or enhancing the resource for its designated use; and special resource waters (Tier 3), for which only temporary and short term changes in water quality that continue to maintain uses are allowed (314 CMR 4.04). Massachusetts also has developed an antidegradation implementation policy.

Maine requires the protection of in-stream uses, that waters that meet higher standards be protected at those higher levels, and that outstanding national resources must be maintained and protected. In addition, DEP can issue a permit or certification where a receiving water does not meet standards of classification only if the discharge does not cause or contribute to the failure of the water body to meet such standards. A permit or certification that lowers water quality is allowed only where necessary to achieve important economic or social benefits to the state and when the action is in conformance with the restrictions on causing or contributing to a failure to meet standards above (MRS Title 38, sec. 464(4)(F)).

Vermont's antidegradation regulations reflect the federal antidegradation requirements (VT WQS sec. 1-03). The state does not have, but is in the process of developing, an antidegradation implementation policy.

New Hampshire has Marginal Quality Waters (Tier 1),⁵ which allow no increase in pollutant load that would cause impairment; High Quality Waters (Tier 2),⁶ for which a significant increase in pollutant loading would require a demonstration that the lowering of water quality is necessary to accommodate important economic or social development; and Outstanding Resource Waters (Tier 3), which are required to have no additional loading of any pollutants from a proposed activity that would result in long-term, permanent impacts. Impaired waters must be restored through a TMDL or other means (NH CAR Env-Wq 1700, 1708).

Rhode Island's antidegradation requirements reflect the federal requirements, except that Rhode Island also has a Tier 2.5 (Special Resource Protection Water), which can have no measurable degradation (RI WQS Rule 18).

Connecticut provides that Outstanding Natural Resource Waters must meet Standard 5 (lowering of water quality is prohibited except for insignificant and temporary changes). In AA, A, and SA waters,⁷ existing uses must be protected. High quality B and SB waters must be maintained, unless the Commissioner finds after adequate opportunity for intergovernmental and public

⁵ Less than 10 percent assimilative capacity remains for the parameter of concern.

⁶ Greater than 10 percent assimilative capacity remains.

⁷ Connecticut's surface water classes are defined in Connecticut's Water Quality Standards, available at http://www.ct.gov/dep/lib/dep/water/water_quality_standards/wqs.pdf

participation that allowing lower water quality is necessary to accommodate overriding state economic or social development. Connecticut also requires compliance with specified hypoxia management action in the DO TMDL for Long Island Sound. (CT WQS, Appendix E)

With regard to mixing zones, Massachusetts' mixing zone regulations are at 314 CMR 4.03(2). Massachusetts' mixing zone regulations specify in part that mixing zones must be as small as feasible, must result in no lethality to organisms passing through, must minimize impacts to aquatic life and designated uses, must allow migration, and must not create nuisance conditions or accumulate pollutants in toxic amounts.

Maine authorizes the use of mixing zones in MRSA Title 38, sec. 451. New Hampshire authorizes mixing zones in NH CAR Env-Wq 1707. These provisions include multiple criteria that must be satisfied. Mixing zones must be established in accordance with the procedures in EPA's *Technical Support Document* (TSD). Vermont authorizes mixing zones subject to specific criteria at VT WQS 2-04. Mixing zones may not extend more than 200 feet from the point of discharge. Rhode Island authorizes mixing zones subject to specific criteria in its Water Quality Regulations, Rule 8, D.1.(e) & (f). Connecticut provides for mixing in zones of influence, including criteria, at CT WQS, Surface WQS, 10.

Findings on Application of Antidegradation and Mixing Zones

The fact sheets for the Massachusetts permits generally include either standard language regarding antidegradation requirements or discussion of the antidegradation goal for the receiving water. The fact sheets for the New Hampshire permits typically include an antidegradation heading and discussion of relevant antidegradation requirements and statements that the permit meets the antidegradation requirements (generally because there will be no lowering of water quality). The fact sheets for Maine permits typically include discussion that the permit requirements will meet applicable antidegradation requirements because the permit meets the several substantive elements (specified in the fact sheets) in the state's antidegradation provisions. In new permits, the Region establishes the tier of the receiving water so the policy can be implemented. Massachusetts and New Hampshire review antidegradation implementation, and Region 1 considers any state input on this subject. Vermont needs to develop an antidegradation implementation policy (and is in the process of doing so).

The use of mixing zones is not consistently discussed in the fact sheets for Massachusetts, New Hampshire, and Maine. Rather, only the fact sheets for select permits expressly discuss the use of mixing zones in evaluating the need for, and developing, permit limits. For ocean and complex scenarios, Region 1 uses CORMIX to model mixing (Region 1 indicates that the discontinuation of EPA HQ' support for CORMIX poses a hardship). In some cases, the permittee or its consultants may conduct some mixing zone water quality modeling. The Region also has tools to address low-flow situations in its modeling.

3.2.6 Thermal Variances and Cooling Water Intake Structures (CWA §316(a) & (b))

CWA §316(a) addresses thermal variances from effluent limitations and §316(b) addresses impacts from CWISs. The goal of this permit review was to identify how the permitting authority incorporated §316 provisions into permit requirements.

The universe of potential NPDES permits for review was determined using EPA's PCS and ICIS databases and the lists of facilities developed during the rulemaking for the 316(b) Phase II and Phase III rules. EPA selected 17 permits in consultation with Region 1 (three in Connecticut; four in Massachusetts, three in Maine, four in New Hampshire, one in Rhode Island, and two in Vermont).

Note that as a result of litigation, on July 9, 2007 (72 FR 37107), EPA suspended the Phase II 316(b) regulation and announced that, pending further rulemaking (ongoing), permit requirements for cooling water intake structures at Phase II facilities should be established on a case-by-case, BPJ basis (see §125.90(b)).

§316(a) and §316(b) Findings

Connecticut

Four permits in Connecticut were reviewed: Millstone (CT0003263), New Haven Harbor (CT0003760), Dexter, CT0000434) and Pfizer (CT0000957). The permit for Millstone was a draft permit.

- *§316(a)*: The fact sheet for Millstone explains that a §316(a) variance is not required. The permits for New Haven Harbor and Dexter do not indicate that a §316(a) variance has been granted but require the maintenance of a “balanced indigenous population,” the standard for thermal variances. The permit for Pfizer does not grant a thermal variance.
- *§316(b)*: The permit for Millstone requires flow reduction and the installation of variable speed pumps, but the permit also states that the BTA determination will be revised during the next permit cycle based on study materials requested under this permit. The permit for New Haven Harbor contains requirements based on the now-suspended Phase II rule and requests new biological studies, but it does not contain a BTA determination or §316(b) permit conditions. The permit for Pfizer requires that the facility conduct inspection and evaluation (I&E) monitoring and conduct a study to evaluate options for achieving BTA, but there is no current BTA determination or §316(b) permit conditions.

Massachusetts

Four permits in Massachusetts were reviewed: Kendall (MA0004898), Canal (MA0004928), Russell Biomass (MA0040371), and Neptune LNG (MA0040258).

- *§316(a)*: The permit materials for Kendall and Canal provide a detailed rationale for the approval of their thermal variances. The Russell Biomass and Neptune LNG permits do not grant thermal variances.
- *§316(b)*: All four permits establish BTA with detailed rationales and include §316(b) permit conditions.

Maine

Maine is not authorized for §316(b) permitting. As noted in the *Federal Register*:
Maine is not being approved at this time to regulate cooling water intake structures under CWA section 316(b). Thus the state is being approved to operate a partial permit program, pursuant to CWA section 402(n)(4). The state program will cover all NPDES permitting responsibilities other than under CWA section 316(b). Sources with cooling water intake structures subject to CWA section 316(b) will need to obtain permits from the state regulating their discharges (including thermal discharges regulated under CWA section 316(a)), but also will need to obtain supplemental permits from the EPA regulating their cooling water intake structures pursuant to CWA section 316(b). (68 FR 65053)

Four permits in Maine were reviewed: Wyman (ME0000272), Verso Bucksport (ME0002160), Maine Energy Recovery (ME0023141) and Sappi Fine Paper (ME0002321).

- §316(a): The permit materials for Wyman and Verso Bucksport indicate that the permits were modified at one point to allow for less stringent discharge limits for temperature, but they do not specify the rationale or what supporting documentation was provided. Neither Maine Energy Recovery nor Sappi Fine Paper contain a thermal variance.
- §316(b): None of the four permits reviewed address 316(b) requirements.

New Hampshire

Four permits in New Hampshire were reviewed: Fraser Paper (NH0000655), Wausau Paper (NH0001562), Newington (NH0001601), and Seabrook (NH0020338).

- §316(a): The permits for Fraser Paper and Wausau do not contain thermal variances. The Newington permit contains a §316(a) variance, and the rationale for renewal of the variance is included in the fact sheet. The permit for Seabrook contains a §316(a) variance and the rationale for renewal of the variance is included, along with biological monitoring requirements.
- §316(b): The Fraser Paper, Seabrook permit, and Newington establish BTA and include §316(b) permit conditions. The permit for Wausau Paper required the facility to reduce its intake velocity and establish an impingement monitoring program.

Rhode Island

One permit in Rhode Island was reviewed: Manchester Street (RI0000434).

- §316(a): The permit approves a §316(a) variance that was reviewed again in this permit term and described in the fact sheet.
- §316(b): The permit includes §316(b) permit conditions and requires impingement and entrainment monitoring.

Vermont

Two permits in Vermont were reviewed: Vermont Yankee (VT0000264) and Ryegate Biomass (VT0020893).

- §316(a): The permit for Ryegate does not contain a thermal variance. The Vermont Yankee fact sheet details the §316(a) variance approval and requests more biological sampling to justify the §316(a) variance for the next permit cycle.

- §316(b): Both permits indicate usage of cooling water but do not have any §316(b) permit conditions.

3.2.7 Stormwater

The NPDES program requires stormwater discharges from certain MS4s, industrial activities, and construction sites to be permitted. Generally, EPA and NPDES-authorized states issue individual permits for medium and large MS4s and general permits for smaller MS4s, industrial activities, and construction activities.

Municipal Stormwater

Municipal stormwater is commonly transported via MS4s and often discharged into local water bodies. The stormwater regulations require that operators of medium/large (Phase I) and small (Phase II) MS4s obtain an NPDES permit and develop a stormwater management program to protect water quality.

For this PQR, EPA reviewed several draft and final MS4 permits that were provided by the Region. These permits cover areas where states are the permitting authority and areas where EPA is the permitting authority and are listed below:

- City of Worcester, Massachusetts (Draft 6/2008)
- Maine, General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (Effective 7/1/08)
- Rhode Island, Pollutant Discharge Elimination System, Stormwater Discharge from Small Municipal Separate Storm Sewer Systems and From Industrial Activity at Eligible Facilities Operated by Regulated Small MS4s (Effective 2003)
- Connecticut, Reissuance of the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (without modification) (Effective January 12, 2009)

Worcester, Massachusetts

EPA is the permitting authority in Massachusetts. EPA's individual permit specifies requirements for Worcester. The permit's water quality provisions integrate requirements for WQS, discharges into impaired waters with and without TMDLs, and antidegradation provisions. The public education component includes a provision requiring that material be tailored to non-English-speaking residents and that public meetings be offered once a year. The public education component is not very specific about program evaluation and effectiveness. The permit also lacks detailed requirements on training for inspectors and municipal staff. It is unclear whether the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Management Standards include requirements for sediment and erosion controls on construction sites. The permit does, however, include detailed information on particular pollutants of concern and particular locations of concern. The permit includes a comprehensive set of requirements on monitoring and analysis and a detailed and comprehensive timeline. Finally, the permit requires the municipality to review its codes and ordinances and eliminate barriers to LID.

Maine

Maine's permit includes a mix of required strategies, suggested strategies, and notes. It includes a lot of unenforceable or unclear language throughout, such as "recommended," "may wish," "suggested," "could," and "should" instead of specific requirements. It includes requirements in several places that specify program evaluation throughout the permit term. It also requires indicators that relate to the execution of the program itself (process indicators) and those related to the goals/objectives of the program (impact indicators). The permit specifies deadlines for most of the minimum measure activities. The reliance on either the Maine Construction General Permit (MCGP) or Chapter 500 Stormwater Management, to fulfill all of the MS4's regulatory requirements is unclear. Specifically, the permit states:

4. The program must include, but not be limited to, the development and implementation of:
 - a. Required Strategies. If the permittee chooses to rely on either the Maine Construction General Permit ("MCGP") or Chapter 500, Stormwater Management, the program must include the development and implementation of:
 - i. Procedures for notifying construction site developers and operators of the requirements for registration under the Maine Construction General Permit or Chapter 500, Stormwater Management for the discharge of stormwater associated with construction activities; and
 - ii. Document every construction activity that disturbs one or more acres within the UA.
 - iii. Implement site inspections procedures to ensure projects are in compliance with the MCGP and Chapter 500, Stormwater Management. In watersheds of Urban Impaired Streams, and in the permittee's highest priority watershed, inspect the construction activity at least three times with one inspection at project completion to ensure that all post construction BMPs were properly installed, and that final stabilization of the site has been completed. All construction inspections must be properly documented. For other watersheds, inspect the construction activity a minimum of twice, with one inspection at project completion to ensure that all post construction BMPs were properly installed, and that final stabilization of the site has been completed.⁸

The provisions for public availability of the stormwater management plan do not mention the general public, but rather discuss other MS4s and the commissioner of the department.

Rhode Island

Rhode Island's general permit addresses a variety of permittees and tailors permit requirements to the type of permittee (e.g., federal, state, and department of transportation). The permit allows other entities to share in the implementation of minimum measures, but it does not state that the permittee bears ultimate responsibility for permit compliance. Comprehensive water quality provisions address WQS, impaired waters with and without TMDLs, and antidegradation. Public education requirements are also comprehensive, requiring the permittee to identify target

⁸ General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, pp 17-18.

audiences and pollutant sources, customize outreach for target audiences, inform the public of how to become involved, and evaluate outreach and education measures.

The general permit does not require that the Illicit Discharge Detection and Elimination (IDDE) program publicize the reporting of illicit discharges. The permit also does not specify what constitutes “adequate training” for the permittees’ inspection staff or address specific tracking of construction activities, inspections, or enforcement. The construction section provides MS4s with an option to rely on the state’s site plan and stormwater pollution prevention plan (SWPPP) reviews, but it is unclear whether the state’s review covers all the required elements for MS4 program review. The state specifies in the MS4 permit that,

The operator of the MS4 may accept the reviews from [the Coastal Resources Management Council], RIDEM Wetlands Program and RIDEM Water Quality Certification Program. The operator of the MS4 may also accept approvals from RIDEM RIPDES Program from dischargers of stormwater associated with construction activity.

It is unclear if reviews completed by the entities specified always include stormwater considerations and whether they are able to fully meet the site plan and SWPPP review requirements in the federal regulations specified at 40 CFR 122.34(b)(4).

The post-construction requirements contain some innovative provisions—including a provision requiring that post-construction programs develop and implement strategies to reduce runoff volume, and a provision requiring communication with developers in the design phase. Though the permit includes implementation deadlines for each of the minimum measures, these deadlines are distributed throughout the document and are sometimes difficult to follow.

Connecticut

As stated at the top of the permit, Connecticut reissued the 2004 general permit without modification. Connecticut’s general permit automatically authorizes permittees to discharge and separates requirements applicable throughout the municipality from those applicable within the urbanized area only. Water quality provisions require permittees to address TMDLs but neglect WQS, antidegradation, and pre-TMDL impaired waters. Some of the minimum measure requirements are excerpts from EPA regulations without further details. The IDDE component includes detailed requirements for development of outfall system maps, but it does not require permittees to prioritize areas most likely to have illicit discharges, track illicit sources, follow up with detected sources, or evaluate their IDDE programs. The construction component of the general permit contains few requirements for site inspections, inspector training, and tracking. The permit does not require permittees to develop evaluation procedures to track progress toward measurable goals, and generally contains very little on program evaluation.

Industrial and Construction Stormwater

The NPDES stormwater program requires construction site operators engaged in clearing, grading, and excavating activities that disturb one acre or more, including smaller sites in a larger common plan of development or sale, to obtain coverage under an NPDES permit for their stormwater discharges. Connecticut, Maine, Rhode Island, and Vermont are all authorized to

implement the stormwater components of the NPDES permitting program. In areas in Vermont, operators must meet the requirements of the Vermont CGP.

To minimize the impact of stormwater discharges from industrial facilities, the NPDES program includes an industrial stormwater permitting component that covers 10 categories of industrial activity that require authorization under an NPDES industrial stormwater permit for stormwater discharges. For industrial facilities in Vermont, coverage is available under the Vermont MSGP.

EPA reviewed eight stormwater permits in Region 1, including the state-issued CGPs and MSGPs from Connecticut (draft MSGP permit), Maine, Rhode Island, and Vermont.

Connecticut

- *CGP*: This permit, with an expiration date of October 1, 2011, is adequate but missing a few important items. While it has some good innovations (toxicity monitoring; special provisions to protect groundwater; special tidal wetland restrictions (retain 1” of rainfall); inspection requirements for three months post construction; mandatory review of SWPPPs for 10-acre projects), the permit needs more specificity and details regarding BMPs and SWPPP requirements and improved impaired waters/TMDL language.
- *MSGP*: This draft permit, proposed May 7, 2009, is progressive with some innovations: comprehensive site evaluations required twice per year; more comprehensive benchmark monitoring than required by EPA regulations; comprehensive NOI requirements; good public access to NOIs; good impaired waters requirements; and requirements for toxicity monitoring. However, some aspects need more robust or detailed language, including TMDL requirements; inspection requirements; site map information requirements; information about where to put BMPs, and sources that might need BMPs. The permit is also missing all ELGs except steam electric coal and asphalt and numerous standard conditions.

Maine

- *CGP*: This permit, which expired January 20, 2008, has some very good provisions, including no discharge to water bodies drained by less than 10 square miles, submittal of photos and map with NOI, and requirement for approval from state wildlife agency if project is in “essential habitat” before proceeding. The state also reviews SWPPPs within 14 days. However, the permit could improve specificity, clarity and details with regard to some BMP options and permit language to be more effective.
- *MSGP*: This permit expired October 11, 2010, but was not expired at the time of review. It is identical to EPA’s MSGP, and therefore considered to be a good permit.

Rhode Island

- *CGP*: This permit expires September 25, 2013, and overall is a very good permit with innovative requirements including different levels of requirements based on project risk assessment, post-construction requirements, well-developed and easy-to-use methodology to find impairment status of receiving waters, requirements to ascertain effectiveness of BMPs and justify their selection, and a requirement that the NOI information submitted be comprehensive. Some minor improvements could be introduced, such as more depth and clarity regarding potential sources of pollutants and BMP options, a detailed pollutant and source list in the SWPPP, more comprehensive

TMDL language and requirements, a requirement to post NOI on site, and requirement for more detail in the site map.

- *MSGP*: This permit, which expired April 30, 2011, but was not expired at the time of the review, is overall a good permit. It mirrors EPA's 2006 MSGP. Some upgrades are needed with additional documentation of impaired waters/TMDL requirements, and additional detail should be required on the site map.

Vermont

- *CGP*: This permit, which expires February 5, 2013, is a very good permit, with clear, comprehensible language and guidance. It is mostly complete and contains many innovations, including different levels of requirements based on environmental risk assessment of project; public comments taken on NOIs; extensive information requirements for NOIs including risk score; requirement to report to state if bad discharges persist and do sampling (benchmark: 25 NTU—measure of turbidity); more stringent winter requirements; very good stabilization requirements; requirement for inspector certification of on-site activities compliance with SWPPP/permit; and good TMDL language. A few minor improvements that could be made, such as requiring identification of receiving water impairment pollutants and whether the project discharges the impairing pollutant, and requiring employee training.

MSGP: This permit expired August 18, 2011, and is very similar to EPA's MSGP. It is a very good and comprehensive permit. BMP guidance is very good and rainfall information is provided for the entire state.

Overall, Region 1 stormwater industrial and construction permit quality is good. Region 1 and Vermont had exemplary CGPs, and only the Maine CGP needs substantial improvements. All MSGPs are of high quality, with Maine, Rhode Island, and Vermont closely mirroring EPA's MSGP. Region 1 should ensure that the next generation of region- and state-issued permits adequately addresses impaired waters and TMDLs.

3.2.8 Combined Sewer Overflows

On the basis of the experience with the FY2007 Water Safe for Swimming (SS) performance measure, EPA's OW, Office of Enforcement and Compliance Assurance (OECA), and Regional offices worked together to revise the measure for FY2008. The FY2008 revised measure incorporates a revised baseline to account for 59 CSO communities that are not required to develop LTCPs. The resulting measure also ensures that reporting is consistent across all the Regions. OW and OECA have provided guidelines describing the various elements of the new SS Measure to promote a better understanding of the measure itself. The revised SS measure is the number and national percent, using a constant denominator, of CSO permits with a schedule incorporated into an appropriate enforceable mechanism, including a permit or enforcement order, with specific dates and milestones, including a completion date consistent with Agency guidance, which requires one of the following:

- Implementation of an LTCP that will result in compliance with the technology and water quality-based requirements of the CWA
- Implementation of any other acceptable CSO control measures consistent with the 1994 CSO Control Policy

- Completion of separation after the baseline date

As part of this review, EPA assessed the Water SS Measure in Region 1, and conducted a comprehensive review of LTCPs in Region 1. The LTCP review was based on the expectations of the CWA and 1994 CSO Control Policy.

Water Safe for Swimming (SS) Measure Performance

The Water SS Measure sets goals to address the water quality and human health impacts of CSOs. The measure tracks incorporation of an implementation schedule with specific dates and milestones for approved projects into an appropriate enforceable mechanism, including a permit or enforcement order.

As of November 2010, Region 1 has a total of 82 CSO communities. From FY2008 to FY2010, Region 1's SS commitment has remained at 76 (93 percent). The Regional FY2011 SS commitment was also 76.

CSO Permit and Long-Term Control Plan Review

EPA HQ has reviewed two NPDES permits: one has a related consent decree, and both contain provisions for LTCPs. Both permits were issued by Region 1 for combined sewer systems in Massachusetts.

The Chicopee, Massachusetts, permit (MA0101508) is written in generic permit language and is missing required minimum LTCP elements, including water quality objectives (no numeric performance standard in terms of unit reductions or estimated level of control anticipated and demonstrated) and other necessary components (permit fails to identify sensitive areas). The reopener clause is also missing. Additionally, the related consent decree does not establish the CSO LTCP requirements. However, the CSO LTCP itself is technically well developed, with good requirements for monitoring, modeling, and sewer system characterization, and it effectively addresses sensitive area issues. In spite of this, there are also a few areas of concern for the LTCP. It is unclear whether bypass related control plans are for anticipated or unanticipated bypasses, and the LTCP does not include language concerning bypass justifications as required by the bypass regulation (40 CFR 122.41(m)) requirements. In addition, the post-construction compliance monitoring program lacks detail.

The Greater Lawrence Sanitary District permit (MA0100447) is written in generic permit language and is missing a reopener clause. Additionally, it is missing required minimum LTCP elements, including the requirement of numeric performance standards in terms of unit reductions or estimated level of control anticipated and demonstrated, identification of sensitive areas in the regulatory requirements, and post-construction compliance monitoring requirements. However, this CSO LTCP does effectively evaluate alternatives enabling the permittee (in consultation with the NPDES permitting authority, WQS authority, and the public) to select CSO controls that will be the most cost-effective to meet CSO policy and CWA requirements. This LTCP lacks discussion of whether CSOs affect inventoried sensitive areas. If CSOs do not affect these areas, it should be explicitly stated in the plan. In addition, a post-construction compliance monitoring program verifying compliance with water quality-based CWA requirements and

ascertaining the effectiveness of CSO controls was not addressed, there is no documentation of benefits derived from Nine Minimum Controls (NMC) implementation, and the plan does not have any specific operational plan.

3.2.9 Sanitary Sewer Overflows (SSOs) and Peak Flows

A critical step in controlling wet-weather discharges from municipal wastewater sources is to ensure reporting of overflows to the NPDES authority. EPA believes that most CSOs and bypasses at treatment plants are being adequately reported. However, information obtained in developing the 2004 Report to Congress on the Impacts and Control of CSOs and SSOs, indicates that some NPDES authorities need to improve permittee reporting of SSOs.

Sewage overflows and bypasses at sewage treatment plants can endanger human health. Appropriate third party notification can reduce health risks associated with these releases. Permits can establish a process for requiring the permittee or the NPDES authority to notify specified third parties of overflows that could endanger health from a likelihood of human exposure, or to notify third parties of unanticipated bypass and upset that exceeds any effluent limitation in the permit or that could endanger health from a likelihood of human exposure.

In April 2005, EPA's WPD distributed a draft fact sheet describing NPDES permit requirements for SSOs. The draft fact sheet is at

http://www.epa.gov/npdes/pubs/sso_fact_sheet_model_permit_cond.pdf. The draft fact sheet addresses how NPDES permits should be clarified to ensure that SSOs and unanticipated bypasses and upsets are reported, along with other issues.

Peak Flows at Treatment Facilities: Discharges from POTWs must meet effluent limitations based on the secondary treatment regulations (which establish 7-day and 30-day limits for TSS, biochemical oxygen demand (BOD) and pH) and more stringent WQBELs as necessary to attain WQS. In addition, the NPDES regulations establish standard permit conditions that apply to all NPDES permits. One standard condition that is important to peak wet-weather diversions is the bypass provision at 40 CFR 122.41(m).

During heavy wet-weather events, most municipal sewer collection systems and treatment facilities receive increased flows that can cause sewage overflows and backups in the collection system and create operational challenges at the plant. To maximize treatment of flows at the plant, minimize overflows of raw sewage in the collection system, and avoid plant damage and operating problems, during wet weather, many POTWs route the portion of flow exceeding the capacity of the secondary units around the units.

EPA addressed peak wet-weather bypasses at POTWs that serve combined sewers in the CSO Control Policy.

On December 22, 2005, EPA proposed a policy for implementing requirements for wet-weather discharges at POTWs served by sanitary sewers. The December 2005 draft policy specifies that the bypass provision would apply to wet-weather diversions at POTWs serving separate sanitary sewer collection systems under all circumstances. Under the draft policy, NPDES authorities would be able to approve—in the NPDES permit—wet-weather diversions around secondary

treatment based on a demonstration that, among other things, there are “no feasible alternatives” to the anticipated bypass.

SSO and Peak Flow Findings

No permits for POTWs serving sanitary sewer collection systems exist in the Region that approve or authorize bypasses.

The Region has worked with several states to update their permit language addressing SSO reporting, but needs to work with several other states to ensure permits require reporting of SSOs that do not discharge to waters of the U.S. and SSOs from municipal satellite collection systems. Permits in Maine, Connecticut, Massachusetts, and New Hampshire have specific language for SSO reporting. The permits in Maine and Connecticut include requirements to report SSOs that do not discharge to waters of the U.S., including basement backups. The EPA-issued permits in Massachusetts and New Hampshire do not require reporting of SSOs that do not discharge to waters of the U.S., including basement backups. Rhode Island relies on state requirements other than NPDES permits to require reporting of SSOs. Both Rhode Island and Vermont rely on the noncompliance reporting standard permit condition in their NPDES permits to require SSO reporting. Neither state requires reporting of basement backups or SSOs that do not discharge to waters of the U.S.

Municipal satellite collection systems in Massachusetts and New Hampshire are generally required to be co-permittees and are required to report SSOs under their permits. Municipal satellite collection systems in Connecticut and Rhode Island are not required to obtain NPDES permits, but they are required to report SSOs under non-NPDES state requirements. Municipal satellite collection systems in Maine and Vermont are generally not required to obtain permit coverage and are not required to report SSOs from their systems that do not reach the waters of Maine. However, they are required to report the SSOs that do reach the waters of Maine, which is required under 38 MRSA §413. One municipal satellite system in Vermont that has reported SSOs in the past is a co-permittee and required to report SSOs under the noncompliance provision of the permit.

The Region needs to work with some of its states to ensure permits provide notification to potentially affected drinking water facilities of SSO events. In Maine, Connecticut, and Rhode Island, permittees are not required to notify downstream drinking water facilities of SSOs, although the state can provide such notification. Most permits in Massachusetts and New Hampshire do not require SSO notification to downstream drinking water facilities. Vermont also does not require such notification.

3.2.10 Concentrated Animal Feeding Operations

EPA reviewed general permits issued by the states in Region 1 for CAFOs. These general permits cover all animal sectors in the Region and were chosen because of their widespread applicability. The following sections includes background and permit review findings for each state.

Massachusetts and New Hampshire: Region 1 would issue any permits to CAFOs in Massachusetts and New Hampshire. At the time of the PQR, no NPDES CAFO permits were in Massachusetts or New Hampshire.

Connecticut: Connecticut is authorized to administer the NPDES program. The Connecticut Department of Environmental Protection (CDEP) administers the regulatory program that addresses waste management issues associated with agricultural operations. According to the information provided to EPA HQ by the Region, six CAFOs are in Connecticut, primarily in the dairy sector, and none have NPDES permit coverage.

Connecticut reports there is no need to update its regulations to comply with the revised CAFO regulations. Connecticut has not issued any NPDES permits to CAFOs; rather, the state issues individual agriculture permits to problem facilities. According to the Connecticut Nonpoint Source Management Program, CDEP was to establish and implement an Animal Feeding Operation (AFO)/CAFO permitting system consistent with the new NPDES AFO/CAFO strategy by January 31, 2005. Additionally, CDEP will coordinate the development and implementation of nutrient management plans (NMPs) for agricultural operations not subject to the state's Coastal Nonpoint Pollution Control Program or NPDES AFO/CAFO permitting requirements. The plan includes a goal of 50 percent coverage by December 31, 2004, and 100 percent by December 31, 2014.

Maine: Maine is authorized to administer the federal NPDES program. The Office of Agricultural, Natural, and Rural Resources addresses environmental issues associated with agricultural activities. According to the information provided to EPA HQ by the Region, six CAFOs are in Maine, and all are covered under an NPDES permit. These are primarily in the dairy sector.

Maine reports there is no need to update its regulations to comply with the 2008 revisions to EPA's CAFO regulations. The following issues were found during a review of the Maine Pollutant Discharge Elimination System (MEPDES) permit issued to Rogers Farm on May 8, 2009 (ME0037125):

- The permit requires the development and implementation of an NMP; however, the NMP must be submitted with the permit application, and the fact sheet reads that this was done. A permit should require the implementation of the terms of the NMP, and the terms of the NMP must be specified in the permit itself but does not need to require the development of a NMP because it should have already been developed when submitted with the permit application.
- Page 2, CONCLUSIONS - "4. The discharge will be subject to effluent limitations that require application of best practicable treatment (BPT)" The BPT effluent limitations are not longer applicable. The current ELG requires the application of the best available technology economically achievable (BAT). As a result the effluent limitations for this permit for a medium CAFO must be based on BPJ. The first BPJ determination starts with the BAT requirements. If these technology-based requirements are not protective of water quality then BPJ will be based on water quality-based requirements for the reach of the stream receiving the discharge.

- Page 4, SPECIAL CONDITIONS, A. DISCHARGE LIMITATIONS—“1. There shall be no discharge of process generated waste waters to surface waters or adjacent wetlands. See Special Condition H(1) of this permit for a definition of process waste waters.” This requirement is more stringent than the CAFO regulations found at 40 CFR 122.23(b)(6), which, in part, defines a medium CAFO as one where, “pollutants are discharged into waters of the United States through a man-made ditch, flushing system or other similar man-made device.”

The following CAFO regulations were missing from the permit:

- Conservation practices to control nutrient loss [40 CFR 122.42(e)(1)(vi)]
- Protocols for manure and soil testing [40 CFR 122.42(e)(1)(vii)]
- Protocols for land application of manure and process wastewater [40 CFR 122.42(e)(1)(viii)]
- NMP terms incorporated as conditions of the permit [40 CFR 122.23(h)(1) and 122.42(e)(5)]
- Requirement to submit annual report [40 CFR 122.42(e)(4)]
- Criteria defining an agricultural storm water discharge [40 CFR 122.23(e)]

Rhode Island: Rhode Island administers the NPDES program through the issuance of Rhode Island Pollution Discharge Elimination System (RIPDES) permits. The Rhode Island Department of Environmental Management (RIDEM) is the lead agency regarding CAFOs. According to information provided to EPA HQ by the Region, no CAFOs are in Rhode Island.

Vermont: The Vermont Department of Environmental Conservation, under the Agency of Natural Resources, is authorized to administer the federal NPDES program and is the lead state agency for CAFOs. The Vermont Department of Agriculture, Foods, and Markets administers the Large Farm Operations Rules. According to information provided to EPA HQ by the Region, there are 17 CAFOs in Vermont.

Vermont has updated its CAFO regulations to comply with the 2008 revision to the CAFO regulations. The state is also drafting a general permit for medium CAFOs. No current NPDES CAFO permits exist in Vermont.

3.2.11 Whole Effluent Toxicity

EPA reviewed 12 permits: one industrial and one municipal permit per state. The WET WQS for each state were reviewed carefully before reviewing the permits and fact sheets to see if the permit requirements adequately and correctly implemented the NPDES WET permit requirements. EPA reviewed the following in the permit and fact sheet: general permit references to 40 CFR Part 136 procedures and/or more specific permit test provisions for WET test methods; adequacy of monitoring frequencies to be representative of the effluent, and whether an adequate basis and/or rationale was provided in the permit fact sheet for other WET requirements contained or not contained in the permit documentation.

Regulations at 40 CFR 122.44(i)(1)(iv) require permits to include monitoring according to test procedures approved under 40 CFR Part 136 , which can be done by either specific current WET

test method reference or by incorporating the general reference to 40 CFR Part 136. The permit and special conditions were checked for consistency between incorporation by reference to current WET test methods in the permit WET test conditions, and the more date-specific citations to EPA's WET test methods.

Regulations at 40 CFR 122.44(d) require several factors to be considered when determining WET RP. The WET monitoring data used to determine RP should be representative of the effluent, including ensuring that effluent variability is considered and addressed. Regulations at 40 CFR 122.48(b) require permits to establish monitoring requirements to yield data representative of the monitored activity, and 40 CFR 122.44(i)(1) requires that monitoring requirements ensure compliance with permit limitations. Monitoring frequencies are based on the nature of the facility, similar facilities, and, if applicable, existing and/or previous permit's monitoring results or compliance history. In addition, EPA's 1991 TSD for Water Quality-Based Toxics Control (EPA/505/2-90-001) recommends conducting toxicity tests quarterly for one year to adequately assess the variability of toxicity observed in effluents. Below this suggested initial minimum frequency, the chance of missing toxic events increases. The toxicity test result for the most sensitive of the tested species is considered to be the measured toxicity for an effluent sample.

WET General Findings

Permit Documentation: Several permit fact sheets do not include adequate documentation of the rationale and basis supporting permit WET requirements, such as monitoring frequencies, reductions, and triggers. In addition, multiple permits lacked adequate explanation of the relevant implementation procedures such as WET test duration, sample collection method, specified dilutions, and test type (i.e., static or renewal). Some permits also fail to include information about the required reference toxicant testing.

EPA WET Test Method Citations: EPA WET test methods specifically cited in some permits are outdated or improper for the test type required (e.g., acute methods cited when chronic limits required). Some permits have acute limitations but allow acute endpoints to be obtained from the chronic tests at the 48 hour interval. Although EPA guidance indicates that the 48-hour endpoint of the chronic test can give an indication of the acute toxicity, this is not the preferred or recommended approach because of differences in test design, feeding, and renewing of test solutions, which can result in missed toxicity, (i.e., metals) or an incorrect interpretation of the evaluation of the effluent sample for toxicity especially with respect to compliance for acute limits.

Permit Conditions and Monitoring: Maine, Massachusetts, and New Hampshire permits fail to detail what the permittee is to do if a WET test shows a toxic effect or if a limit is exceeded (i.e., accelerated monitoring, conducting a toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE), or a follow-up WET test).

Connecticut Findings

Permit Documentation: Both the municipal and industrial permits (The Town of Stratford, CT0101036 and New Albertsons, Inc., CT0030406, respectively) do not include a specified

WET test dilution series based on their calculated in-stream waste concentrations (IWC) and require only single concentration “Pass/Fail” acute test to be performed. EPA WET methods require multi-concentration testing to meet the Test Acceptability Criteria (TAC) and to be considered a valid test.

EPA WET Test Method Citations: Both permits reference the proper EPA WET test methods.

Permit Conditions and Monitoring: The municipal permit contains no WET limitations, but it requires acute monitoring, while the industrial permit contains acute WET limitations and requires acute and chronic monitoring. Both permits indicate accelerated monitoring and eventual TIE/TRE if two consecutive test results or three test results in a 12-month period indicate toxicity.

Maine Findings

Permit Documentation: Neither the municipal permit (Brunswick Sewer District, ME0100102) nor the industrial permit (S.D. Warren Company, ME0021521, a pulp and paper plant) includes an adequate explanation of relevant detailed WET test methods required under the permit (i.e., WET test duration and test type such as static or renewal). Neither permit includes details about required reference toxicant tests. Documentation to substantiate the basis or rationale for permitting decisions is needed in the permit or fact sheet (40 CFR 124.56).

Permit Conditions and Monitoring: Neither the municipal nor industrial permit indicates what the permittee is required to do when a WET test shows a toxic effect, or if a limit is exceeded in accelerated monitoring, TIE/TRE, or a follow-up WET test. The industrial permit requires a period of “screening level” monitoring of two WET tests each year during the fifth year of the permit term and a period of reduced “surveillance level” monitoring with one WET test every two years during the first four years of the permit term. In addition, the municipal permit requires only one WET test every year. These monitoring frequencies are representative only when the effluent is known to be continuously stable. Therefore, these monitoring frequencies might not be a true representation of the discharged effluent as required by 40 CFR 122.44(d) and 122.44(i)(1).

Massachusetts Findings

Permit Documentation: While not documented in the permit reviewed (The City of Marlborough, MA0100480), Region 1 shared that its approach to RP determinations is that RP is assumed for municipal discharges because the municipal effluent is believed to be complex and variable. The permit or fact sheet for municipal discharges should include discussion to support this rationale, or by reference, if based on prior permits, the administrative record, state policy or regional guidance (40 CFR 124.56). A valid explanation of RP determination should also be included in the permit or fact sheet for industrial discharges, but it is not in the permit reviewed (L.S. Starrett Company, MA0001350)

EPA WET Test Method Citations: Both the municipal and industrial permits reference out of date EPA WET methods for acute toxicity testing. The municipal permit did not reference EPA WET chronic testing methods, though chronic testing was required. The industrial permit included a

reference to the WET test methods for *Pimephales promelas* testing, but did not require this WET test under the permit.

Permit Conditions and Monitoring: Neither permit indicates what the permittee is required to do when a WET test shows a toxic effect or if a limit is exceeded (i.e., accelerated monitoring, TIE/TRE, or a follow-up WET test). The municipal permit states that a “modified acute” test is to be conducted, but does not document whether the modification was approved by EPA (40 CFR 136.5) or what the modification was. The industrial permit requires only one WET test every year, which might not be frequent enough to characterize potential effluent toxicity from this type of industrial facility (i.e., metal industry). The municipal permit contains acute and chronic WET limitations but requires only chronic monitoring. The municipal permit states that acute endpoint values for both species can be recorded at the 48-hour mark using chronic tests, but this approach for acute toxicity could actually result in missing acute toxicity. Although EPA guidance indicates that the 48-hour endpoint of the chronic test can give an indication of acute toxicity, a permit with acute limits should not require that 48-hour chronic test monitoring data be used to determine compliance with an acute WET limit. The industrial permit contains only acute WET limitations.

New Hampshire Findings

Permit Documentation: Both the municipal and industrial permits (The Town of Greenville, NH0100919 and Tyco Electronics Integrated Cable Systems, NH0001490, respectively) should contain documentation of WET RP determination and testing specifications required under permit conditions for WET test duration and test type, such as static or renewal. Region 1’s approach to WET RP determinations is that all major POTWs are believed to have RP because their effluents are considered complex and variable. The permit or fact sheet should include discussion to support this rationale, or by reference if based on prior permits, administrative record, state policy or regional guidance (40 CFR 124.56). The municipal permit states that a “modified acute” test is to be conducted but does not document what the modification was or whether it was approved by EPA (40 CFR 136.5). Neither permit specifies a particular WET test dilution series based on IWCs.

EPA WET Test Method Citations: The industrial permit referenced outdated EPA WET methods for acute marine toxicity testing, and the municipal permit does not reference EPA WET methods for the required acute testing.

Permit Conditions and Monitoring: Neither permit includes what the permittee is required to do when a WET test shows a toxic effect or if a limit is exceeded (i.e., accelerated monitoring, TIE/TRE, or a follow-up WET test). The industrial permit requires only one WET test every second year, and the municipal permit requires only one WET test each year. These monitoring frequencies are representative only when the effluent is known to be continuously stable. The municipal permit contains acute and chronic WET limitations and requires acute monitoring and chronic monitoring. The industrial permit contains only acute WET limitations and requires acute monitoring.

Rhode Island Findings

Permit Documentation: Both the municipal and industrial permits (The Town of Westerly, RI0100064, and Bradford Printing and Finishing, LLC., RI0000043, respectively) contain adequate testing requirements, including WET test duration, sample collection method, static or renewal test type, and reference toxicant tests.

EPA WET Test Method Citations: Although both permits reference outdated EPA WET methods, both permits also include caveat language of “or most recent version,” which would have the effect of requiring the permittee to use EPA’s most current WET test methods.

Permit Conditions and Monitoring: The municipal permit contains both acute and chronic WET limitations and requires acute and chronic marine monitoring. The industrial permit contains only acute WET limitations and required chronic monitoring. The industrial permit states that acute endpoint values for both species can be recorded at the 48-hour mark using the chronic tests. Although EPA guidance indicates that the 48-hour endpoint of a chronic test can give an indication of acute toxicity, this is not the preferred or recommended approach because differences in test design, feeding, and renewing of test solutions can result in missed toxicity (i.e., metals) or an incorrect interpretation of the evaluation of effluent samples for toxicity with respect to compliance for acute limits.

Vermont Findings

Permit Documentation: Neither the municipal nor industrial permit (Harbor Road WWTF, VT0100820, and International Business Machines Corporation, VT0000400, respectively) includes adequate testing specifications (i.e., WET test duration and static or renewal test type). Neither permit specifies a particular WET test dilution series based on calculated IWCs.

EPA WET Test Method Citations: The industrial permit references an outdated EPA WET test method, and the municipal permit does not include a reference for any EPA WET test methods. Vermont updated the EPA WET test method references sometime shortly after these two permits were issued. Therefore, subsequent permits now have the updated WET test method references.

Permit Conditions and Monitoring: Although permits might be amended to require additional testing or TRE, the permit does not require any immediate action upon a limit exceedance, such as test failure.

3.2.12 National Pretreatment Program

General Pretreatment Regulations at 40 CFR Part 403 establish responsibilities of federal, state, and local government; industry; and the public to implement pretreatment standards to control pollutants from the industrial users (IUs), which might not be effectively treated, interfere with POTW treatment processes, or contaminate sewage sludge. The goal of this pretreatment program PQR was to assess the status of the pretreatment programs in Region 1 and assess specific language in POTW NPDES permits and IU permits.

The Connecticut permits were issued to IUs, rather than POTWs. These permits were evaluated to determine whether they contain control mechanism components required at 40 CFR 403.8(f)(1)(iii)(B).

This PQR also summarizes which states have approved pretreatment programs; the number of audits and inspections conducted; the numbers of significant IUs (SIUs) in approved pretreatment programs; the numbers of categorical IUs (CIUs) discharging to municipalities that do not have approved pretreatment programs; the status of streamlining rule implementation; the status of 40 CFR 403.10(e) state oversight; and the adequacy of pretreatment program requirements in NPDES permits.

Connecticut, Maine, Rhode Island, and Vermont have approved state pretreatment programs. Massachusetts and New Hampshire do not have approved state pretreatment programs; Region 1 oversees these pretreatment programs and issues these NPDES permits. Because Connecticut and Vermont are classified as a 40 CFR 403.10(e) states and oversee their SIUs directly, Region 1 audits Connecticut and Vermont performance in the same manner as it does POTW Pretreatment Programs. However, Region 1 does not perform audits at its traditional delegated state programs, Maine and Rhode Island, because in these cases the states perform audits at the POTWs. The Region most recently performed audits at its 40 CFR 403.10(e) states as follows: Connecticut in May 2005 and Vermont in March 2009. NPDES data for Connecticut, Massachusetts, New Hampshire, and Rhode Island are reported via ICIS, whereas Maine and Vermont have not migrated to ICIS and are still reporting via PCS. For the permit review, EPA selected 26 permits from Region 1: eight in Connecticut, two in Maine, eight in Massachusetts, four in New Hampshire, one in Rhode Island, and three in Vermont.

POTW Programs, SIUs, Control Mechanisms, POTW Flows Findings

According to data retrieved from ICIS and PCS, 47 approved pretreatment programs are in Massachusetts, 11 in Maine, 13 in New Hampshire, 15 in Rhode Island, and zero in Connecticut and Vermont (where the state implements pretreatment requirements). Data in ICIS and PCS also indicates Connecticut has no SIUs, Massachusetts has 391 SIUs, Maine has 0, New Hampshire has 61, Rhode Island has 94, and Vermont has 0.

The numbers of SIUs pulled from PCS and ICIS are much lower (approximately 50 percent lower) than the numbers of SIUs reported by the Regional coordinator when data were collected for the GPRA for 2006. The table below shows the discrepancy in reported numbers. This is likely due to vast under-reporting of data into PCS and ICIS. The Region 1 coordinator stated that the Region inputs data for Massachusetts and New Hampshire, the respective states input data for Rhode Island and Maine, and that to his knowledge neither Connecticut nor Vermont performs any current data entry for their pretreatment programs. For the FY2010 Commitments for SIUs in Approved Pretreatment Programs with Control Mechanisms matrix, the Regional coordinator said that the FY2010 projected number of SIUs in approved pretreatment programs was 1,396. ICIS and PCS data from 2009 account for a total of only 424. The 2006 GPRA information for each state has a total number of 1,465 SIUs.

Comparison of reported number of SIUs

	2009 ICIS	2009 PCS	2006 GPRA
Connecticut	0	--	204
Maine	--	0	109
Massachusetts	391	--	782
New Hampshire	61	--	112
Rhode Island	94	--	240
Vermont	--	0	18
Total	424		1,465

When using ICIS and PCS data to compare the number of SIUs across Region 1 with the number of POTWs that have unexpired control mechanisms, 99 percent of the total SIUs have unexpired control mechanisms. The Regional coordinator stated that the percentage of SIUs with control mechanisms is 94 percent for FY10 Commitments for SIUs in Approved Pretreatment Programs with Control Mechanisms. The discharge flows for the 19 POTWs reviewed range from 0.22 million gallons per day (mgd) to 11.5 mgd. Only two of the eight IU permits from Connecticut have flow data in the fact sheets (1,600 gallons per day and 35,000 gallons per day).

Audits/Inspections: On the basis of available PCS and ICIS data, Region 1 conducted 6 Pretreatment Compliance Inspections (PCIs) and 4 audits in Massachusetts in 2009 (13 percent and 9 percent of the total programs). According to PCS data, Maine had not conducted any audits or PCIs from 2005 to 2009; Maine DEP states that it has tracked pretreatment audits and inspections in its internal database. This data has not been transferred to PCS, but at the time of this PQR, the state was correcting this. The state system shows that 2 audits and 10 inspections were conducted at the 11 POTWs that have pretreatment programs. Region 1 conducted 2 PCIs and 2 audits in New Hampshire in 2009 (15 percent of the total programs). Rhode Island conducted 1 inspection and 3 audits in 2009 (7 and 20 percent, respectively). Audits and inspections of POTWs are not conducted in Connecticut and Vermont because of their 40 CFR 403.10(e) status.

CIUs in Nonapproved Programs: According to 2006 GPRA data, the number of CIUs in non-pretreatment POTWs that have control mechanisms in place are as follows: 0 in Connecticut, 13 (all) in Massachusetts, 8 (all) in Maine, 22 (all) in New Hampshire, 1 in Rhode Island, and zero in Vermont.

Compliance Monitoring Strategy Goals: ICIS and PCS data were used to determine whether oversight agencies are meeting Compliance Monitoring Strategy (CMS) goals. CMS goals are that one principal component analysis (PCA) and two PCIs are conducted per five-year NPDES permit term. This PQR does not look at each POTW's NPDES permit term, but it looks at the period of 2005 through 2009. ICIS and PCS do not contain audit or inspection information for Connecticut and Vermont, respectively. The CMS goal was met in Massachusetts, with at least one audit and two inspections within five years at one of its 47 POTWs, or 2 percent. Although PCS data do not show that Maine has met the CMS goal, the state says that it met the CMS goal of at least 1 audit and 2 inspections within five years at 8 of its current 11 POTWs with pretreatment programs (or 73 percent). The remaining 3 POTWs (27 percent) lacked one inspection each within the five-year period. The CMS goal was not met in New Hampshire or Rhode Island.

Special Programs: A website search was conducted to determine whether the Region 1 states have adopted/implemented *Special Programs* such as mercury; dental amalgam; pharmaceutical take-back; fats, oil, and grease; or removal credits. All states have implemented some type of mercury reduction or information dissemination programs. All Region 1 states have posted information about dental amalgam and mercury on their websites. Maine has a dental amalgam separator law that required dental offices to install amalgam separators by December 2004. Massachusetts has a regulation to install separators. New Hampshire requires dentists to provide to patients comparative information on restorative dental materials, and it has rules for the proper management of mercury amalgam waste. Rhode Island's Mercury Reduction and Education Act requires dentists to use BMPs, with a goal of 95 percent of dentists using amalgam separators by 2010. Vermont requires use of amalgam separators at dental facilities. Each state's websites, except for Rhode Island's, contained information about pharmaceutical product disposal. Maine has enacted the Act Regarding the Unused Pharmaceutical Disposal Program and has a pharmaceutical take-back program. All states except Maine and Rhode Island have information on their websites about fats, oil, and grease (FOG) disposal. Connecticut has a General Permit for Food Processing Wastewater and a FOG Model Program. New Hampshire offers FOG training through its Department of Environmental Services. According to state websites, only Maine has adopted the removal credits provision of the streamlining rule.

Streamlining Rule: Maine has adopted streamlining rule regulations into its state codes to come into compliance with federal revisions that went into effect November 14, 2005. At the time of this review, Connecticut and Vermont had not yet acted to incorporate streamlining requirements into state codes. Massachusetts, New Hampshire, and Rhode Island have incorporated the federal regulations by reference and are therefore in compliance. Maine adopted a separate provision, which includes all required and optional provisions, except for the authority to classify certain CIUs as nonsignificant CIUs (NSCIUs). Though this regulation revision contains several flexibilities for POTWs and IUs, several provisions in the regulation are more stringent than the previous regulation and need to be addressed.

Permit Review Findings

Most of the permits reviewed include fact sheets. Massachusetts and New Hampshire permits (issued by Region 1) are consistent in content. Most permits (except Rhode Island) include requirements to update programs per the streamlining rule and a timeline for meeting this requirement. All permits for POTWs required to have pretreatment programs include requirements to develop and implement local limits and include a timeline to complete the local limits evaluations. All permits also include required components of 40 CFR Part 403, and/or incorporate the requirements by reference.

Connecticut: Eight IU permits from Connecticut were reviewed. The Connecticut IU permits, and the General Conditions (Section 22a-430-3) and Procedures and Criteria (Section 22a-430-4), are thorough and contain all requirements for IU permits at 40 CFR Part 403. None of the permits contain requirements to develop a slug discharge control plan. It is not possible to confirm whether there is a need for a slug discharge control plan at these facilities given the information provided for the PQR. 40 CFR 403.8(f)(1)(iii)(B)(6) requires that if a slug plan is deemed necessary the requirements must be in the permit. EPA recommends that the state revise

the General Conditions to state that a slug plan can be required if deemed necessary; EPA notes that Connecticut must have the legal authority to include this requirement in permits.

The Connecticut IU permits contain a requirement that is more stringent than the federal requirements at 40 CFR 403.12 (g)(2). The permits state, “If any sample analysis indicates that an effluent limitation specified in Section 4 of this permit has been exceeded, a second sample of the effluent shall be collected and analyzed for the parameter(s) in question and the results reported to the Bureau of Materials Management and Compliance Assurance within 30 days of the exceedance.” The federal requirements at 40 CFR 403.12 (g)(2) require that results be reported within 30 days of *becoming aware of the violation*.

The fact sheets for the IU permits designate whether the IU pretreats its discharge, whether it is an SIU/CIU, nature of business, and process and treatment descriptions.

Maine: Two permits from Maine were reviewed, and neither POTW is required to have a pretreatment program (Oakland and Dover-Foxcroft). Neither of the permits directly states that a program was not required; however, the fact sheet for Oakland says the facility receives only residential discharges and that its sole CIU closed down in 1997. The fact sheet for Dover-Foxcroft does not mention pretreatment or industrial discharges. The permits prohibit nondomestic source discharges that cause pass through or interference and contain the required statements at 40 CFR 122.42(b) regarding notification of the state director. The permits do not contain requirements at 40 CFR 122.44(j)(1) to identify SIUs. The permits also do not require the POTWs to conduct industrial waste surveys (IWSs) during the life of a permit to continually monitor potential nondomestic discharges to their systems. Neither permit contains the authority to reopen the permit if it is determined that a pretreatment program is warranted. The reopener clauses in both permits simply refer to reopening permits to modify effluent limits.

Massachusetts: Eight permits from Massachusetts (issued by Region 1) were reviewed. Five of the eight require pretreatment programs (Montague, Attleboro, Easthampton, Westfield, Gardner). The fact sheets and permits for these five POTWs clearly state that a pretreatment program is required. The five permits contain most of the required elements except the permits do not include the statement at 40 CFR 122.44(j)(1) that requires POTWs to “[i]dentify, in terms of character and volume of pollutants, any Significant Industrial Users.” The fact sheets for these permits, however, say that the POTWs are required to administer a pretreatment program based on authority granted at 40 CFR 122.44(j). Incorporation of the specific language at 40 CFR 122.44(j)(1) in the permits, however, would strengthen the state’s or Region’s authority to enforce should the POTW fail to do it. The fact sheets for four of these five permits contain information about contributions from SIUs including name, type of industry, and flows. The fact sheet for Attleboro does not contain this information; it was focused only on its phosphorus limit. Four of these permits for POTWs with pretreatment programs contain requirements for the POTWs to develop, enforce, and reevaluate local limits. Westfield, however, does not contain the “Local Limits and Industrial Pretreatment” section that the others have. Later in the permit, it refers back to the local limits section, which was likely intended to be included. All five of the fact sheets state that the POTWs are required to develop and reevaluate local limits. The fact sheets for these permits (except for Attleboro) have information about types of industrial dischargers (business names and discharge flows).

For the three POTWs not required to have programs (Oxford-Rochdale, Hudson, and Athol) the fact sheets or permits do not specify that a program is not required. The permits for these three POTWs include the requirement for notification regarding new or changed pollutants at 40 CFR 122.42(b). The fact sheet for Hudson says the POTW has 10 IUs (with no description), and the fact sheet for Athol says the POTW has two CIUs and includes their names and type of industry. The flows for these two POTWs are 3 and 1.75 mgd, respectively, which are below the numeric threshold above which a local pretreatment program is required. None of them contain a reopener clause to require a pretreatment program if deemed necessary. The permits also do not require the POTWs without pretreatment programs to conduct IWSs during the life of a permit to continually monitor potential nondomestic discharges to their systems. The permit for Hudson does not specify an effective date or expiration like the other permits do. The Hudson permit states that it becomes effective 60 days from signature and expires five years from the effective date; however, there is no signature date.

New Hampshire: Four permits from New Hampshire (issued by Region 1) were reviewed. The permits and fact sheets for all four POTWs clearly state whether a pretreatment program is required. Two of the POTWs were required to have pretreatment programs (Winnepesaukee and Jaffrey). The permits contain most of the required elements except for the statement at 40 CFR 122.44(j)(1) that requires POTWs to “[i]dentify, in terms of character and volume of pollutants, any Significant Industrial Users.” Incorporation of the specific language at 40 CFR 122.44(j)(1) into the permits would strengthen their authority. The two permits for POTWs with pretreatment programs contain requirements for the POTWs to develop, enforce, and reevaluate local limits. The fact sheets for Winnepesaukee and Jaffrey do not describe types of IUs.

The permits for the POTWs not required to have pretreatment programs (Lancaster and Littleton) contain the requirements at 40 CFR 122.42 and a section called Limitations for Industrial Users that prohibits discharges that cause pass through and interference, requires POTWs to report to EPA and New Hampshire Department of Environmental Service (NHDES) any CIUs and other SIUs with discharges of greater than 25,000 gallons per day or with RP to adversely affect the POTW, and baseline monitoring report submittal requirements. The fact sheets, however, only say that the POTWs are required to report CIUs.

The permits for the POTWs not required to have pretreatment programs do not include 40 CFR 122.44(j)(1) verbatim. Although they require reporting of potential industries of concern, the permits do not specifically require identification of character and volume of pollutants, they say simply report the name of the industry. Incorporation of the specific language at 40 CFR 122.44(j)(1) into the permits would strengthen their authority. The permit for Littleton contains a general reopener clause. Although not specific to reopening the permit to require a pretreatment program, it is very general and provides the authority to do so saying the permit may be reopened if new information indicates that the discharge causes or has the RP to cause or contribute to an exceedance of the New Hampshire Surface WQS. The Lancaster permit does not contain any reopener clause.

Rhode Island: One permit for Rhode Island was reviewed (Westerly), and the POTW is required to have a pretreatment program. Both permit and fact sheet are clear on this requirement. Although the permit actually contains many of the 40 CFR Part 403 requirements and incorporating them by reference, it does not include requirements at 40 CFR 122.42(b)(1) to

report the new introduction of pollutants into the POTW from an indirect discharger or 40 CFR 122.42(b)(2) to report “any substantial change in the volume or character of pollutants being introduced into the POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.” The Westerly permit requires that annual reports include “a summary list of any notifications received by the permittee of any substantial change in volume or character of pollutants being introduced in to the POTW by new or existing IUs.” This does not fully meet the intent of 40 CFR 122.42(b)(2) because this notification would not occur *at the time of issuance of the permit*. The permit does not specifically require the POTW to update its program per the streamlining rule but states in the definitions section that reference to 40 CFR Part 403 includes revisions.

The Westerly permit includes requirements for a local limit monitoring plan to be implemented at all times and requires that “At the time of renewal of this permit and in accordance with 40 CFR 122.21(j)(4) as revised, the permittee shall submit to the DEM with its permit renewal application a written technical evaluation of the need to revise local limits.” The citation of 40 CFR 122.21(j)(4) is incorrect because that section is called Effluent Monitoring for Specific Parameters; therefore, this is likely a typographical error and should be changed to 40 CFR 122.44(j)(2). The fact sheet for Westerly does not contain information about numbers or types IUs.

Vermont: Three permits for Vermont were reviewed (Springfield (2.2 mgd), Northfield (1 mgd), Richmond (0.22 mgd)). None require a pretreatment program because Vermont is a 40 CFR 403.10(e) state and the state permits IUs directly. A fact sheet was reviewed for only one of the permits (Springfield), and it does not mention whether there are any IUs. All permits contain the requirements at 40 CFR 122.42(b) and include requirements that sewer use ordinances be in effect to prohibit listed discharges.

3.2.13 Nutrients

The NPDES regulations at 40 CFR 122.44(d)(1) govern development of WQBELs and require that all pollutants or pollutant parameters that cause, have RP to cause, or contribute to an excursion above any state WQS, including narrative criteria, must be controlled through limitations (40 CFR 122.44(d)(1)(i)). States must develop procedures for making this determination, often called an RPA, for both numeric and narrative criteria.

The regulations require effluent limitations for every individual pollutant for which the RPA demonstrates an actual or potential excursion above a numeric criterion for that pollutant (40 CFR 122.44(d)(1)(iii)). Furthermore, the regulations require that if a state has not established numeric criteria for a pollutant present in the effluent in concentrations at which an RPA demonstrates an actual or potential excursion above a narrative criterion, the permitting authority must establish effluent limitations using one or more of the options listed in 40 CFR 122.44(d)(1)(vi).

Finally, the regulations require that WQBELs ensure that the level of water quality to be achieved is derived from and complies with all applicable WQS and are consistent with the assumptions and requirements of any available WLA for the discharge prepared and approved under 40 CFR 130.7 (i.e., the TMDL regulations) (40 CFR 122.44(d)(1)(vii)).

The primary goal of this review was to identify if and how the permitting authority incorporated nitrogen and phosphorus limits into permits. EPA reviewed 16 permits across all 6 states in Region 1. EPA's review included an examination of how well the permitting authority documented decisions about whether to include nitrogen and phosphorus limits. Permitting decisions reviewed included RPA documentation, identification of receiving water body characteristics, identification of applicable WQS (narrative and/or numeric) and uses, identification of impairments, water quality concerns or existing TMDLs, limit expression and WQBELs calculations.

Nutrient Findings

Connecticut: Connecticut has adopted a statewide narrative criterion for phosphorus that applies to all waters and a numeric total phosphorus criteria that applies to lakes. In addition, the state has adopted statewide numeric surface water criteria for DO, and numeric lake criteria for total nitrogen, chlorophyll *a* and secchi disk transparency. In February 2011 EPA approved changes to the state's nutrients WQS; these revised WQS will need to be applied during permit reissuance. There are numeric DO criteria for coastal waters. In addition, in 2001 the Connecticut General Assembly authorized the development of a Nitrogen Credit Exchange Program and established a framework for achieving the nitrogen WLA using innovative approaches such as water quality trading and issuing a watershed-based general permit for nitrogen. This framework entailed the creation and implementation of a general permit for nitrogen that served as an overlay permit for individually permitted dischargers.

EPA reviewed four Connecticut municipal permits. The selected permits do not have detailed fact sheets. The derivation and rationale/justification for the WQBELs and the other permit terms and conditions were not provided in the permits. None of the permits that were reviewed included a description of how RP was determined for the pollutants of concern. Additionally, there was no discussion of whether there was a determination for each of these facilities that the discharge of the various nutrient pollutants were not being done at levels that would "cause or contribute" to the violation of WQS. None of the permits contain WQBELs and each instead includes monitoring requirements for nutrient pollutants. The inclusion of monitoring requirements in lieu of numeric WQBELs was not justified in the permit terms for any of the permits. The applicable WQS are not included or outlined in any way, so it is unclear how the RP determinations were made in light of the applicable WQS.

The *City of Asonia* (CT0100013) permit includes monthly monitoring requirements for phosphorus, nitrogen, and total Kjeldahl nitrogen, as well as quarterly monitoring requirements for total nitrogen and other forms of nitrogen (nitrate, nitrite, ammonia).

The *Town of Vernon* (CT0100609) permit includes average monthly concentration limits for nitrogen (ammonia) for April through November. These limits range from 1.5 mg/L in July to 10.0 mg/L in November. Final effluent monthly monitoring requirements are included for nitrogen, nitrate, and total Kjeldahl nitrogen. Final effluent monthly monitoring requirements are also included for total phosphorus and orthophosphate.

Like the other permits reviewed in Connecticut, the permit for the City of Meriden's wastewater treatment facility (CT0100315) does not include WQBELs for all the nutrient pollutants discharged by the facility. Instead, it includes final effluent monitoring requirements. Monthly monitoring is required for both nitrate and nitrite (which are both reported as nitrogen), total Kjeldahl nitrogen, and total nitrogen. Monthly monitoring is also required for phosphorus and orthophosphate.

The *City of Torrington* (CT0100579) wastewater treatment permit includes average monthly limits for nitrogen (ammonia) discharged in the final effluent. These monthly limits range from 1.7 mg/L in June through September to 12.7 mg/L in April. Monthly effluent monitoring requirements are included in the permit for nitrate and nitrite (both reported as nitrogen), total nitrogen, and total Kjeldahl nitrogen. There are also monitoring requirements for orthophosphate and total phosphorus.

Rhode Island: Rhode Island has adopted narrative criteria prohibiting nutrient pollution in concentrations that would impair uses and atrophic conditions. The state also has adopted numeric surface water criteria for phosphorus of 0.025 mg/L for lakes, ponds, reservoirs and tributaries to these water body types. In addition, the state has adopted numeric DO criteria for both fresh and salt water bodies. The state has not adopted any criteria specifically for nitrogen. EPA reviewed two municipal permits in Rhode Island.

The *City of Woonsocket Waste Water Treatment Plant* (RI0100111) permit includes seasonal concentration-based monthly average limits for total phosphorus of 0.1 mg/L from April through October and 1.0 mg/L November through March. The permit also includes monthly average limits for total nitrogen of 10 mg/L in April and 400 lb/d and 3.0 mg/L from May through October. In addition, the permit requires weekly monitoring for total phosphorus, total nitrate (as nitrogen), total nitrite (as nitrogen), and total nitrogen three times per week from April to October and monthly from November to March. The permit mentions that there is a TMDL for the Blackstone River and that the phosphorus effluent limit would ensure the Blackstone River does not violate the Rhode Island WQS in Scott Pond.

The Woonsocket permit does not provide a clear explanation of how standards were interpreted to ensure the nitrogen effluent limit would also ensure attainment of WQS. A compliance schedule contained in a consent agreement is referenced in the permit cover sheet, and both the schedule and agreement are mentioned in the fact sheet. The permit does not reflect any milestones contained in the agreement for total nitrogen, total phosphorus, and cadmium, and it includes only the final limit without any indication that the limits for these pollutants are not effective at the time of permit issuance. The consent agreement was not provided for review.

The *City of Burrillville Waste Water Treatment Plant* (RI0100455) permit includes monthly average limits for total phosphorus of 1.0 mg/L, but no nitrogen limits are included. The permit does not include a discussion about the interpretation of standards, nor does it discuss whether the permit limits ensure attainment of state WQS. In addition, the permit requires monitoring of total phosphorus, total nitrogen, total nitrate (as nitrogen) and total nitrite (as nitrogen) once a week from November to April and three times a week from May to October.

The Burrillville permit does not discuss whether an RPA was conducted and the procedure followed to determine a need for phosphorus limits and not for nitrogen limits. Calculations are not included for developing the phosphorus limits; however, the conditions used to calculate the limits are included. The permit fact sheet does not mention the characteristics of the receiving water body and watershed.

Maine: Maine has adopted narrative criteria for all class A waters for plant nutrients and DO. The state has not adopted numeric nutrient criteria. EPA reviewed two municipal permits in Maine.

The *Town of Pittsfield Waste Water Treatment Plant* (ME0100528) permit does not contain any nutrient-based effluent limits and no monitoring-only requirements for nutrients were found. No information related to RPA or effluent and receiving water quality is in the permit or fact sheet. However, because this facility is discharging to a Class C water, there are no nutrient-specific WQS. Upon further research and conversations with permit writers in Maine during the site visit, there seem to be no water quality concerns related to nutrients in this watershed that would make it necessary for the permitting authority to require phosphorus and/or nitrogen limits in this permit.

The *Town of Oakland Waste Water Treatment Plant* (ME0100463) permit includes a seasonal mass-based weekly average limit for phosphorus of 3.0 lbs/week and a seasonal mass-based daily maximum limit for phosphorus of 10 lbs/week from July through September. The permit includes weekly monitoring for phosphorus July through September and provides a description of the proper procedures for collecting phosphorus samples in an appendix. During the site visit, the permitting authority explained that limits are not expressed as average monthly limits because the permitting authority believes that maximum daily and average weekly limits are more protective of water quality.

The permit also references that the discharge to Rice Rips River impoundment will be eliminated within the term of the permit because of historical reports of algal blooms. Nitrogen limits were never considered for this freshwater discharge.

Massachusetts: Massachusetts has adopted narrative criteria for nutrients to protect uses and prevent cultural eutrophication in Massachusetts surface waters. The state has not adopted numeric nutrient criteria. EPA reviewed two permits in Massachusetts, which were issued by Region 1.

The *City of Westfield Water Pollution Control Plant* (MA0101800) permit includes a seasonal concentration-based monthly average limit for total phosphorus of 0.46 mg/L, applicable in October and from April through June 30. The permit requires seasonal monthly monitoring of dissolved orthophosphate from November through March. In addition, the permit requires monitoring of nitrogen in the form of total nitrogen, total Kjeldahl nitrogen, ammonia as nitrogen (NH₃-N), and nitrite-nitrate as nitrogen (NO₂⁻&NO₃²⁻-N) at a weekly frequency. The permitted pollutant units are expressed in concentration, with the exception of total nitrogen. The permit requires the reporting of total nitrogen in both concentration and mass units.

The permit stipulates that the total phosphorus winter seasonal (November 1–March 31) limit becomes effective November 1, 2011. In the interim, the discharger is required to report only between November 1 and March 31. The condition is not explicitly justified in the fact sheet or made part of a compliance schedule in the permit. However, the flexibility was given in the response to Mr. David Billups, superintendent of the Westfield Water Pollution Control Plant, concern that the facility lacked proper storage facilities for coagulants to comply with the total phosphorus permit limits. EPA delayed the total phosphorus permit limit effective date by two years to allow the facility to plan, design, and build the necessary storage tanks, without providing the appropriate documentation and/or permit modification.

A special condition under the permit addresses controlling nitrogen discharge loading by the permittee. The permit requires the discharger to evaluate alternative methods on facility operation practices to optimize nitrogen removal. The permittee must submit its findings and recommended operational changes on technological approaches to maintain the existing mass loading of total nitrogen (643 lbs/day) within one year of the permit's effective date. The provision further requires the permittee to implement these recommendations and submit annual reports to EPA and MassDEP summarizing loading trends and the facility's progress toward optimizing nitrogen removal. This is part of an effort to reduce aggregate out-of-basin nitrogen loadings by 25 percent to meet the CDEP TMDL for Long Island Sound.

While the fact sheet does provide narrative language explaining RP determination, no RPA calculation proving or disproving RP for applicable pollutants was provided. For phosphorus, the fact sheet cites state narrative criteria that require dischargers to remove levels of nutrient concentration that promote nuisance algal and plant growth with best practicable treatment. The fact sheet confirms the presence of green filamentous algae according to findings in the *Westfield River Watershed 2001 Water Quality Assessment Report* along upstream and downstream waters of the facility. This finding appears to have triggered an RP finding. The receiving water body is not listed as a 303(d)-listed (impaired) water body for nitrogen or phosphorus. Both approaches do not provide any numerical-based determination in the fact sheet.

Water quality-based permit limit derivations are provided for ammonia and phosphorus. However, since Massachusetts has not adopted state numeric criteria for phosphorus, EPA Region 1, the permitting authority, applied the Gold Book recommended criteria for total phosphorus. The fact sheet explains that once the state adopts numerical criteria for phosphorus or additional data proves that more stringent limits are needed, the permit will be reopened, and total phosphorus limits will be modified. Regarding ammonia, the fact sheet states the *1999 Update of Ambient Water Quality Criteria for Ammonia* was used to determine the average monthly ammonia limit. The permit writer determined the appropriate chronic ammonia criteria of 3.78 mg/L based on a pH of 7.2 and a temperature of 20 °C and considered a 30-day every 10 years low-flow (30Q10) dilution factor. The fact sheet mentions that the selected pH and temperature were based on WET sampling data.

The *Gardner Wastewater Treatment Facility* (MA0100994) discharges into the Otter River. A fact sheet was not provided for review. WQBELs are included for nutrients: DO, total phosphorus, and total ammonia nitrogen. An RP determination is not included in the permit for

each of the nutrient pollutants discharged by the facility. WQBEL calculations were also not included in the permit.

The Gardner permit includes seasonal concentration average limits for phosphorus of 0.12 mg/L from April through October and 1.0 mg/L from November through March. The permit also includes seasonal, mass-based average limits for phosphorus of 5.0 lbs/day from April through October and 41.7 lbs/day from November through March.

Seasonal concentration-based limits are included for total ammonia nitrogen and a weekly and an average monthly reporting requirement is also included. From June through October the concentration limit for total ammonia nitrogen is 1.0 mg/L. From November through May the concentration limit for total ammonia nitrogen is 4.4 mg/L.

The permit includes weekly monitoring and monthly reporting requirements for total nitrogen both in concentration and mass. Weekly monitoring and monthly requirements are also included for nitrate+nitrite in concentration units. The permit includes a concentration-based limit of not less than 6.0mg/L at any time for DO that is applicable from April 1-October 31.

There is a compliance schedule for phosphorus in the Special Conditions Section. Provisions 1 and 2 in the Special Conditions Section, respectively, allow for the delayed effectiveness of the calculated WQBEL. These provisions require the evaluation of existing treatment facilities to achieve the calculated monthly average total phosphorus limitation and the submission of a report that summarizes the evaluation by December 1, 2010. This evaluation would then result in the application of the more stringent WQBELs (0.12 mg/L) for April through October, if it is concluded that the limit is achievable. If it cannot be met (and EPA concurs), the limit becomes effective two years later, on April 1, 2013. The schedule requires the submission of annual progress reports but does not include milestones related to the potential planning, design and construction of the treatment facilities. A similar compliance schedule for total nitrogen provides that by December 1, 2010, the permittee will have evaluated alternative methods of operating to optimize nitrogen removal. The permittee is also required to submit annual reports summarizing the nitrogen removal optimization activities and the annual nitrogen discharges.

New Hampshire: Under Section Env-Wq 1703.14, the New Hampshire Surface Water Quality Regulation for nutrients contains narrative criteria and no explicit numeric-based water quality criteria that apply to non-specific water body types. EPA reviewed two municipal permits in New Hampshire.

The *Town of Greenville Waste Water Treatment Plant* (NH0100919) permit includes seasonal concentration-based effluent limits for total phosphorus (TP) at 0.43 mg/L, from April 1 to October 31, and 1.0 mg/L, from November 1 to March 31. These limits are set as monthly averages and are monitored weekly. In addition, the permit requires weekly effluent monitoring for orthophosphate from November 1 through March 31. No monitoring for nitrogen-based nutrients was included in the permit. The fact sheet explains that Souhegan River is a listed 303(d) impaired water body for aquatic life (aluminum, benthic-macroinvertebrate assessments, DO, and pH) and primary contact recreation (*E. coli*). No impairment from total phosphorus was mentioned; however, the DO (a response variable) does allude to nutrient-related impacts. A

TMDL has not been prepared but sampling data along the Souhegan River and in Greenville have been collected. Last, the permit contains language stating that the discharge will not violate WQS in the receiving water body.

The fact sheet provided narrative language explaining the RP determination, but no supplemental RP calculations proving or disproving RP for applicable pollutants is included. Rather, under the phosphorus section of the fact sheet applies and compares both Gold Book and Ecoregion VIII in-stream total phosphorus criteria of 0.1 and 0.0010 mg/L, respectively. The fact sheet notes that all sample data points at and downstream from the Greenville POTW exceeded both Gold Book and Ecoregion VIII TP recommended criteria. The section further demonstrates that virtually all ambient chlorophyll *a* exceeded recommended numeric criterion concentration for chlorophyll *a*. As a result, the water body was deemed susceptible to eutrophication from nutrient loading contributed by the discharger. This assessment triggered an RP for harmful effects caused by eutrophication. The fact sheet justifies using the Gold Book criterion.

The fact sheet includes its total phosphorus permit limit derivation as an attachment. The permit limit of 0.43 mg/L was calculated and set for April 1 to October 31. During the winter (November 1 to March 31), the permit applies a limit of 1.0 mg/L. The fact sheet does not contain its numerical derivation but provides an explanation of its necessity “to ensure that the higher levels of phosphorous discharged in the winter do not result in the accumulation of phosphorous in downstream sediments.” In addition, the fact sheet justifies the application of Gold Book criteria as opposed to ecoregional criteria because of the Gold Book’s effects-based approach as opposed to the ecoregional criteria’s basis of reference conditions. Because the receiving water body is an impaired water body, the permit writer deemed the Gold Book more appropriate; the limits were carried forward from the previous permit.

The permit provides narrative conditions that require the permittee to not violate the WQS of the receiving water. Also, the permit includes “free-from” conditions that required the discharger to adequately treat its effluent in such a way that it will protect the surface waters from pollutants that produce color, taste, turbidity that is not naturally occurring and that can affect its designated uses. Another condition is that the discharge is adequately treated for pollutants in concentrations or combinations that settle to form harmful deposits float as scum, debris, or other visible pollutants. The narrative does not provide approaches to determine compliance with this narrative.

The fact sheet also describes calculation of available dilution on the basis of the facility’s design flow of 0.23 mgd and a 7-day mean low flow at every 10 years (7Q10). According to more current stream flow data, the available dilution yielded 5.6 as its factor. This dilution also factors in New Hampshire’s assimilative 10 percent capacity reserve rule. The calculation of this dilution is in the appendix of the fact sheet.

The *City of Jaffrey Waste Water Treatment Plant* (NH0100595) permit includes seasonal, mass-based, monthly average limits for total phosphorus of 1.67 lbs/day applicable October and April through June and 10.4 lbs/day applicable from November through March. The permit also includes seasonal, concentration-based monthly average limits for total phosphorus of 0.16 mg/L, applicable October and April through June, and 1.0 mg/L, applicable November through March. In addition the permit includes ammonia as nitrogen (NH₃-N) seasonal permit limits set

at monthly average, weekly average, and daily maximum frequencies. The permit limits for NH₃-N are as follows:

Ammonia as Nitrogen (NH₃-N) Effluent Limitation			
Period	Monthly average	Weekly average	Daily maximum
Nov 1-Apr 30	7.0 mg/l (73 lb/d)	7.0 mg/l (73 lb/d)	25 mg/l (260 lb/d)
May	5.3 mg/l (55 lb/d)	7.0 mg/l (73 lb/d)	8.6 mg/l (90 lb/d)
June	1.1 mg/l (11.5 lb/d)	1.1 mg/l (11.5 lb/d)	2.8 mg/l (17.5 lb/d)

In addition, the permit requires weekly effluent monitoring for total phosphorus, NH₃-N, and orthophosphate year-round by grab sampling. Total nitrogen was not included in the permit for monitoring. While the fact sheet provides narrative language explaining RPA determination, no RPA calculations proving or disproving RP for applicable pollutants are supplied. Rather, the fact sheet states that the average total phosphorus concentration in the effluent is 2.9 mg/L, and the total phosphorus concentration range from January 2004 through April 2006 was 1.78 to 4.99 mg/L. The fact sheet explains that the permit writer considered the lowest bound total phosphorus concentration (1.78 mg/L) and applied a dilution factor of 1.78 to yield a total phosphorus concentration exceeding both Gold Book and Ecoregion VIII in-stream criteria of 0.1 mg/L and 0.0010 mg/L, respectively. The section further demonstrates that ambient chlorophyll *a* concentrations in the Contoocook River exceeded concentration levels recommended in the ecoregional criteria for chlorophyll *a* numeric criteria. Therefore, the water body was deemed susceptible to eutrophication from nutrient loading contributed by the discharger. This assessment triggered an RP for harmful effects caused by eutrophication.

The receiving water body is listed as a 303(d) impaired water body for aquatic life (DO, DO saturation, and total phosphorus) and primary contact recreation (chlorophyll *a*, *E. coli*, and total phosphorus). As of the date of the review, the TMDL has not been finalized but extensive data collection and work has been done toward the draft. Last, the permit contains language stating that the discharge will not violate WQS in the receiving water body.

The fact sheet explains that the New Hampshire Surface Water Quality Regulation contains only narrative criteria for total phosphorus. Despite the lack of adopted numeric criteria, NHDES considered receiving water levels exceeding 0.05 mg/L for total phosphorus a concern. This concern was substantiated by using in-stream total phosphorus ambient data collected for the draft Contoocook River TMDL. The recommended Gold Book criterion of 0.1 mg/L is used to derive a WQBEL for April through October, during the expected algal growth season. The fact sheet includes its derivation as an attachment. In the winter (November through March), the permit applies a limit of 1.0 mg/L but the fact sheet does not contain its numerical derivation. An explanation of its necessity “to ensure that the higher levels of phosphorus discharged in the winter do not result in the accumulation of phosphorus in downstream sediments” is included. Also, the fact sheet justifies the application of Gold Book criteria, as opposed to ecoregional criteria, because of the Gold Book’s effects-based approach, as opposed to the ecoregional criteria’s reference conditions approach. Because the receiving water body is an impaired water body, the permit writer deemed the Gold Book more appropriate; therefore, the limits are carried forward from the previous permit.

A thorough derivation and rationale with NH₃-N permit limits was not provided. The fact sheet indicates that the limits were carried over from the previous permit. Additionally, the fact sheet does not provide an explanation as to why total nitrogen effluent monitoring was not included in the permit. The permit does not require ambient monitoring for total nitrogen, NH₃, or other forms of nutrients.

Vermont: EPA reviewed four permits in Vermont. Vermont has adopted both numeric and narrative standards for phosphorus and nitrates. The numeric criteria for phosphorus apply to upland streams; Lake Champlain and Lake Memphremagog; and other select lakes, ponds and reservoirs. The numeric criteria for nitrates relate to all waters in the state. Numeric WQS reflecting these criteria were adopted in 2008 while all the permits reviewed were issued before these new standards. It appears that the permits EPA reviewed in Vermont were written to implement standards under Vermont Statute 10 V.S.A section 1266a.

All the Vermont permits reviewed include a section titled *Waste Management Zone*, which states that this permit “hereby establishes a waste management zone (WMZ) that extends downstream from the outfall,” and includes the detail of the distance and receiving water body. This waste management zone is established in Section C of the permit.

In addition, all the permits lack a detailed fact sheet documenting decisions about whether to include limits for nutrient parameters and, when included, how the permitting authority calculated these limits.

The *City of Rutland Waste Water Treatment Plant* (VT0100871) permit includes both a mass-based monthly average limit of 45.4 lbs/day and concentration-based limit of 0.8 mg/L for total phosphorus year round and a seasonal (June 15 through September 30) concentration-based requirement for total Kjeldahl nitrogen that will be limited so as not to exceed the Ultimate Oxygen Demand of 2,250 lbs/day (daily maximum). The permit also requires effluent monitoring for total phosphorus twice a month from October 1 through June 14 and weekly effluent monitoring for total phosphorus and total Kjeldahl nitrogen from June 15 to September 30.

The fact sheet does not provide any RPA or calculation for how nutrient limits were developed for this permit. It simply states that the limits were carried forward from the previous permit. There is no discussion about whether the water body is impaired for nutrient pollution, however Otter Creek is a tributary to Lake Champlain, which is impaired and has a phosphorus TMDL. The permit seems to be setting end-of-pipe limits in accordance with 10 V.S.A. section 1266a; however, the permit does not reference these state regulations.

The *City of Newport Waste Water Treatment Plant* (VT0100200) permit includes both mass-based average weekly limits of 8 lbs/day and concentration-based average weekly limits and 0.8 mg/L for total phosphorus. The permit requires monitoring of total phosphorus once a week, and DO, nitrate/nitrite, and total Kjeldahl nitrogen annually.

The permit appears to contain end-of-pipe limits for phosphorus in accordance with 10 V.S.A. section 1266a, although it does not reference these state regulations. The permit does not include any limits for nitrogen, nor does it include a comprehensive and clear discussion on whether an

RPA was conducted, and the procedure followed to determine a need for phosphorus limits and not for nitrogen limits. The fact sheet does not mention the characteristics of the receiving water body or the applicable WQS on which permit limits are based. Furthermore, the permit does not make reference to downstream impairments or if any TMDLs are applicable.

The *Rainbow Mine* is in Ludlow, holds an industrial permit (VT0001163), and is owned and operated by Luzenac America, Inc. The permit does not contain any effluent limits or monitoring requirements for nutrients. Because this is a minor facility, no fact sheet is required nor prepared, and, therefore no information relates to RPA, effluent and receiving water quality, derivation of permit limits, and monitoring requirements on all pollutants was available. Additionally, this permit does not contain language addressing assurance of attaining and maintaining state WQS.

This industrial permit, without confirmation from a supplementary fact sheet, appears to be based solely on technology-based effluent limits. However, the permit does not mention or reference any effluent limitations guidelines and standards or specific industrial categories related to Rainbow Mine. The permitted effluent parameters exclusively include flow, arsenic, turbidity, total nickel, and pH. WQBELs do not appear to have been incorporated.

The *Town of Randolph Waste Water Treatment Plant* (VT0100285) discharges into the White River, and the permit does not have a detailed fact sheet. The derivation and rationale/justification for the WQBELs and the other permit terms and conditions are not provided in the permits. The fact sheet does not describe how RP was determined for the pollutants of concern. Additionally, there is no discussion of whether there was a determination for each of these facilities that the discharge of the various nutrient pollutants were not being done at levels that would “cause or contribute” to the violation of WQS.

The permit does not include nutrient limits. There are annual monitoring requirements for nitrogen (ammonia), DO, nitrate/nitrite, total Kjeldahl nitrogen, and total phosphorus.

4.0 SUMMARY OF FINDINGS AND PROPOSED ACTION ITEMS

The NPDES Regional PQR identified areas where the Region and its states were doing well and recommended areas where improvement is needed. This section provides a summary of the main findings of the review and provides proposed Action Items to improve NPDES permit programs in Region 1. This list of proposed Action Items will serve as the basis for ongoing discussions between Region 1 and its authorized states, and between Region 1 and EPA HQ. These discussions should focus on eliminating program deficiencies to improve performance by enabling timely issuance of good quality, defensible permits.

The proposed Action Items are divided into three categories to identify the priority that should be placed on each item and facilitate discussions between the Region and states.

- Category 1—Most Significant: Proposed Action Items address a current deficiency or noncompliance with a federal regulation.
- Category 2—Recommended: Proposed Action Items address a current deficiency with EPA guidance or policy.
- Category 3—Suggested: Proposed Action Items are listed as recommendations to increase the effectiveness of the state's or Region's NPDES permit program.

The Category 1 and Category 2 proposed Action Items should be used to augment the existing list of “follow up actions” established as an indicator performance measure and tracked under EPA's Strategic Plan Water Quality Goals and/or may serve as a roadmap for modifications to Region 1 program management.

4.1 NPDES Regional Program Review

4.1.1 Permit Issuance

In FY2010, Region 1 as a whole continued to exceed its goal of priority permit issuance.

- Region 1 should closely examine the priority permit universe and designate a realistic issuance goal. (Category 3)

Region 1 has improved its backlog but has yet to meet the national target of 90 percent of facilities covered by current permits.

- Region 1 should continue to reduce its NPDES permit backlog for Massachusetts and New Hampshire. (Category 2)

4.1.2 Whole Effluent Toxicity (WET)

Vermont has an overdue action item related to WET, which was to be completed in 2007. Limited monitoring data are required to assess WET RP, and WET limits are not being included in permits.

- The Region should continue to work with Vermont to resolve this issue. (Category 1)

4.1.3 Stormwater

Proposed action items:

- Region 1 should make use of milestones and incremental measures instead of calling for five-year compliance schedules in permits and engaging the states to develop appropriate plans to address stormwater issues. (Category 3)
- To foster public support related to stormwater control in Region-issued permits in Massachusetts and New Hampshire, the region should work with EPA HQ to develop a public message to help improve understanding of stormwater regulations and their importance. (Category 3)

4.2 Permit Quality Review

4.2.1 Core Permit Review

In general, the core review indicated that permits reviewed are largely consistent with state and EPA rules, guidance, and policy pertaining to NPDES permits. Recommendations for addressing issues or concerns that were identified for each state are presented below.

Region 1

Proposed Action Items to help the Region strengthen its NPDES permit program are the following for the permits it issues in Massachusetts and New Hampshire:

- Provide appropriate documentation of data considered and any pollutants of concern in the fact sheet (or permit file), including discussion of where available data warrant RPA. (Category 2)
- Where RPA is conducted, provide appropriate documentation in the fact sheet or administrative record. (Category 2)
- Where effluent limitations are carried forward from the previous permit, document or reference the technical basis of such limits, and whether no relevant conditions have changed and, therefore, earlier limits remain appropriate for the current permit. (Category 2)

Maine

Overall, MEPDES permit quality appeared to be quite good. Proposed Action Items to help the state strengthen its NPDES permit program are the following:

- Maine should require applications for permit reissuance to be submitted no later than 180 days before permit expiration. (Category 1)
- DEP should consider adding more discussion of how pollutants of concern are selected to fact sheets, because such documentation helps to ensure that all appropriate pollutants were considered and evaluated. (Category 2)
- When permit limits are carried forward from the prior permit, DEP should document or reference the technical basis for such limits, and document that relevant conditions at the facility have not changed since the limits were originally calculated. (Category 2)
- DEP should continue to work at reducing its OBD permit backlog. (Category 2)

4.2.2 Mercury Methods

Proposed Action items for Region 1 and its states are the following:

- Region 1 should ensure that the states are aware of the most current mercury methods and should verify that each state is incorporating sufficiently sensitive analytical methods into relevant permits. See *Analytical Methods for Mercury in National Pollutant Discharge Elimination System (NPDES) Permits*, at http://www.epa.gov/npdes/pubs/mercurymemo_analyticalmethods.pdf. (Category 2)
- All states in Region 1 should implement policies and procedures to evaluate which mercury methods are appropriate for application data and for monitoring during the permit term. (Category 2)

4.2.3 Impaired Waters and TMDLs

Ten permits were reviewed for dischargers to impaired waters. In most cases the impairment is discussed to some extent in the fact sheet, and the permit requirements appear to have been developed accordingly. Proposed Action Items for Region 1 and all states are the following:

- The fact sheet or permit file should include consistent documentation regarding whether the receiving water is listed as a 303(d)-listed (impaired) water body. (Category 3)
- The fact sheet or permit file should discuss whether the facility discharges pollutants of concern (identified from the application, integrated list of waters, and other sources) and, if so, how the permit conditions were developed consistent with state requirements to account for such impairments. (Category 3)

The TMDL review indicated that for 8 out of 11 permits, the TMDL allocations that were applicable and final when the permits were issued were implemented in the respective permits. Additional documentation is needed to clarify the status of the three remaining permits. Proposed Action Items for Region 1 and states are the following:

- Region 1 and all states should continue to document the status of relevant TMDLs in the fact sheet or permit files, including how permit conditions reflect applicable TMDL results. (Category 3)

Rhode Island

- The Rhode Island permit should ensure that relevant impairments are identified in fact sheets. (Category 3)

4.2.4 Use of *E. coli* and *Enterococcus* Bacteria Standard

In general, the permits reviewed include pathogen limits that reflect state WQS. The two Massachusetts permits are transitioning from fecal coliform limits to *E. coli*. Of the 10 permits reviewed, all include *E. coli* limits except for two. One focuses on shellfish sanitation protection; the other includes a basic fecal coliform limit.

4.2.5 Thermal Variances and Cooling Water Intake Structures (CWA §316(a) & (b))

With regard to temperature variances under CWA §316(a), several of the permits reviewed indicate that the temperature limits in the permits were based on variances, although in some cases the existence of a variance was not clear. In addition, some of the permits reviewed do not include permit conditions implementing §316(b). Region 1 and Region 1 states should implement the following proposed Action Items to improve implementation of §316(a) & (b) requirements in permits:

- Connecticut and Vermont permits should include §316(b) cooling water intake structure permit conditions and a determination of BTA for existing facilities on a BPJ basis, and the basis for the BTA determination should be documented in the fact sheet. (Category 1)
- Connecticut and Maine should reevaluate any §316(a) thermal variances and §316(b) requirements at each permit renewal and document the basis in the permit fact sheet. Prior determinations should also be documented in the fact sheet and reflected in the current permit, as appropriate. (Category 1)
- Maine must obtain authorization to regulate cooling water intake structures under CWA §316(b). (Category 1)
- The Region, until 316(b) delegation, and Maine, after 316(b) delegation, should include §316(b) cooling water intake structure permit conditions in its applicable permits and a determination of BTA for existing facilities on a BPJ basis (Category 1)

4.2.6 Stormwater

MS4 Action Items

Region 1 and states should implement the following proposed Action Items to improve implementation of municipal stormwater requirements in permits:

Maine

The MCGP states that MS4s may rely on the MCGP to fulfill their requirements under the construction minimum measure specified in the federal stormwater regulations. However, it is unclear whether the MCGP fulfills all the federal requirements specified in 40 CFR 122.34(b)(4).

- Maine should provide documentation explaining how the MCGP or Chapter 500, Stormwater Management fulfills federal MS4 regulatory requirements. (Category 1)
 - For instance, whether the state increased required inspection frequencies to fulfill federal requirements and public comments processed on behalf of the MS4.
 - If a community relies on the MCGP or Chapter 500, what provisions address requirements for (1) site plan review (40 CFR 122.34(b)(4)(ii)(D)) [Note: this may be taken care of in the construction site application process, but clarification would be helpful], and (2) procedures for receipt and consideration of information submitted by the public (40 CFR 122.34(b)(4)(ii)(D))
 - If a community chooses not to rely on the MCGP or Chapter 500, what provisions in the general permit account for the enforcement of erosion and sediment control requirements.

Other Action Items for Maine related to MS4s are the following:

- Maine should eliminate vague phrases such as “recommended,” “may wish,” “suggested,” “could,” and “should” because they result in inconsistent implementation by permittees and difficulties in permit authority oversight and enforcement. (Category 1)
- Maine should ensure that members of the public are able to identify MS4 permittees to promote accessibility of stormwater management plans. (Category 2)
- Maine should describe why there are no inspection requirements for owners/operators of post-construction control who hire a “qualified third party inspector.” (Category 3)
- Maine should consider requiring a formal agreement between the entities who share responsibilities that clearly defines each entity’s roles. (Category 3)

Massachusetts

- Region 1 should ensure specific training requirements related to construction site inspections and municipal operations are included. (Category 3)
- Region 1 should ensure strong evaluation provisions for the public education component of permits by requiring permittees to evaluate the effectiveness of their outreach activities throughout the permit term. (Category 3)

Rhode Island

- Rhode Island should document its ability to fulfill the federal MS4 regulatory requirements specified in the federal regulatory requirements for site plan and SWPPP reviews. (Category 1)

Other Action Items for Rhode Island related to MS4s are the following:

- Rhode Island’s MS4 permits should specify that, even when implementation of minimum measures is shared with other entities, the permittee bears ultimate responsibility for compliance. (Category 1)
- Rhode Island should require tracking of construction activities, inspections, or enforcement. (Category 2)
- Rhode Island should consolidate all implementation deadlines in one section for ease of understanding. (Category 3)
- Rhode Island should describe what constitutes an “adequately trained” construction site inspector. (Category 3)

Connecticut

- Connecticut should revise the water quality provisions of the permit to strengthen the connection between the permit and WQS (including antidegradation policy). (Category 2)
- Connecticut should strengthen the IDDE component of the permit by requiring permittees to prioritize areas most likely to have illicit discharges, track illicit sources, follow-up with detected sources, and evaluate their IDDE programs. (Category 2)
- Connecticut should strengthen the construction component by inserting requirements for site inspections, inspector training, and tracking. (Category 2)
- Connecticut should strengthen the post-construction component of the permit by requiring tracking of BMP performance and evaluation of the post-construction program. (Category 2)

Industrial and Construction Stormwater Action Items

Region 1 and states should implement the following proposed Action Items to review implementation of construction and industrial stormwater requirements in permits:

Region 1

- The Region should improve its monitoring and oversight of state permits. (Category 2)

Connecticut

- The CGP, expiring March 15, 2011, in the next permit term needs more specificity and details regarding BMPs and SWPPP requirements, and improved impaired waters/TMDL language. (Category 2)
- The MSGP should have more robust language and/or detail on the following: (Category 2)
 - TMDL requirements/language
 - Inspection requirements
 - Site map information requirements
 - Information about where to put BMPs and sources that might need BMPs
 - All ELGs except steam electric coal and asphalt
 - Numerous standard conditions

Rhode Island

- The CGP should have additional detail on the following elements: (Category 2)
 - More depth and clarity regarding potential sources of pollutants and BMP options
 - SWPPP should contain detailed list of potential pollutants on-site and potential sources
 - More comprehensive TMDL language and requirements
 - Requirement to post NOI on-site
 - Site map should require more detail
- The MSGP should have additional detail with the following elements: (Category 2)
 - Documentation of impaired waters and/or TMDLs
 - Additional detail on the site map, as required

Vermont

- The CGP should have additional detail on the following elements: (Category 2)
 - Require identification of pollutants impairing receiving waters and whether the project discharges the impairing pollutants
 - Required employee training

Maine

- Maine should reissue its CGP as soon as possible (expired 1/20/08). In the interim, Maine is not authorized to allow additional coverages under the expired CGP. (Category 1)
- The CGP should have additional detail on the following element:
 - Needs to substantially improve details and many important facets of construction permits; the current permit allows too much to be inferred by permittees. (Category 2)

4.2.7 Combined Sewer Overflows

Region 1 and its states should implement the following proposed Action Items to improve implementation of CSO requirements in permits and LTCPs:

- Region 1 should work with the states to ensure NPDES permits are written with site-specific rather than generic language and include nine minimum controls and CSO LTCP-specific language. (Category 2)

4.2.8 Sanitary Sewer Overflows

Region 1 should implement the following proposed Action Items to improve implementation of SSO requirements in permits:

Region 1

- The Region should improve permits in Massachusetts and New Hampshire to ensure that permits specifically require reporting of SSOs that do not discharge to Waters of the U.S., including basement backups. (Category 3)

Connecticut

- Connecticut should ensure that permits provide notification to potentially affected drinking water facilities of SSO events. (Category 2)

Maine

- Maine should ensure that permits provide notification to potentially affected drinking water facilities of SSO events. (Category 2)

Rhode Island

- Rhode Island should ensure that permits provide notification to potentially affected drinking water facilities of SSO events. (Category 2)
- Rhode Island should ensure that permits specifically require reporting of SSOs that do not discharge to Waters of the U.S., including basement backups. (Category 3)

Vermont

- Vermont should ensure that permits provide notification to potentially affected drinking water facilities of SSO events. (Category 2)
- Vermont should ensure that permits specifically require reporting of SSOs rather than relying on the noncompliance reporting standard condition. (Category 3)

4.2.9 Concentrated Animal Feeding Operations

Region 1 and states should implement the following proposed Action Items to improve implementation of CAFO requirements in permits:

Region 1

- Region 1 should develop an NPDES permit template for those instances when CAFOs in Massachusetts or New Hampshire need to apply for NPDES permits. (Category 2)

Connecticut

- CDEP should provide a progress report on the development and implementation of NMPs for operations not subject to the state's Coastal Nonpoint Pollution Control Program or the NPDES permitting requirements. (Category 2)
- The state should work with Region 1 to develop an NPDES permit template for instances when an operator will need to apply for an NPDES permit for a CAFO. (Category 2)
- Region 1 should review Connecticut's CAFO regulations to confirm there is no need to update the regulations to be in compliance with the 2008 revisions to EPA's CAFO regulations. (Category 2)

Maine

- When Maine issues future NPDES permits to CAFOs, all requirements of the CAFO regulations and, where applicable, effluent guideline requirements, should be included in the MEPDES permit. (Category 1)
- The Region should review the Maine CAFO regulations to confirm there is no need to update regulations to be in compliance with the 2008 CAFO regulations. (Category 1)

Rhode Island

- Rhode Island must update its regulations to reflect revised CAFO regulations. (Category 1)
- The state also should work with Region 1 to develop an NPDES permit template for those instances when an operator will need to apply for an NPDES permit for a CAFO. (Category 1)

Vermont

- The state should work with Region 1 to develop an NPDES permit template for those instances when an operator will need to apply for an NPDES permit for a CAFO. (Category 1)

4.2.10 Whole Effluent Toxicity

Region 1 should consider increasing state oversight and coordination on WET program implementation to ensure compliance with states' aquatic life protection (or WET) WQS, specifically addressing permit/fact sheet documentation (i.e., rationale/basis for RP determinations, and reduced or limited monitoring frequencies) and updating permit language (i.e., WET test methods).

Proposed Action Items for Region 1 and states are the following:

Connecticut

- Tests should be run using a five dilution series, in accordance with WET test methods TAC for a valid WET test. (Category 1)
- Permit documentation should include the basis or rationale for permitting decisions, such as monitoring frequencies and instructions to the discharger in the permit, including WET testing requirements, and post-WET test failure follow-up. (40 CFR 124.56) (Category 1)

Maine

- Monitoring frequency must be representative of the discharged effluent (40 CFR 122.44(d), 122.44(i)(1), and 122.48(b)) to be protective of the state WQS. If a permit contains a reduced or limited monitoring frequency based on prior permits or compliance history, this basis must be documented in the permit/fact sheet. (40 CFR 124.56) (Category 1)
- Permit documentation should include the basis or rationale for permitting decisions, such as monitoring frequencies and instructions to the discharger in the permit, including WET testing requirements, and post-WET test failure follow-up. (40 CFR 124.56) (Category 2)
- Permits should require the permittee to submit reference toxicant test data for each species to demonstrate that the in-laboratory variability and organism response were evaluated. (Category 3)
- Permits should specify permittee requirements if a limit exceedance occurs (e.g., accelerated monitoring, TIE/TRE). (Category 3)

Massachusetts

- Monitoring frequency must be representative of the discharged effluent (40 CFR 122.44(d), 122.44(i)(1), and 122.48(b)) to be protective of the state WQS. If a permit contains a reduced or limited monitoring frequency based on prior permits or compliance history, this basis must be documented in the permit or fact sheet. (40 CFR 124.56). (Category 1)
- Modification to acute testing must be submitted to and approved by EPA under EPA's Alternative Test Procedures (ATP) process before testing (40 CFR 136.5). Approval of WET test method modifications must be documented in the permit or fact sheet. (40 CFR 124.56) (Category 1)
- Permits must include reference to current EPA WET test methods or 40 CFR 136.1 for species required to be tested only, not for species that are not required to be tested. (Category 1)
- Permit documentation should include the basis or rationale for permitting decisions, such as monitoring frequencies and instructions to the discharger in the permit, including WET testing requirements, and post-WET test failure follow-up. (40 CFR 124.56) (Category 2)
- Permits should require the permittee to submit reference toxicant test data for each species to demonstrate that the in-laboratory variability and organism response were evaluated. (Category 3)
- Although EPA guidance indicates that the 48-hour endpoint of the chronic test can give an indication of the acute toxicity, a permit with acute limits should not require that the 48-hour chronic test monitoring data be used to determine compliance with an acute WET limit. (Category 3)
- Permits should provide what is required from the permittee if a limit exceedance occurs (i.e., accelerated monitoring, TIE/TRE). (Category 3)

New Hampshire

- Modification to acute testing must be submitted to and approved by EPA under EPA's Alternative Test Procedures (ATP) process before testing (40 CFR 136.5). Approval of WET test method modifications must be documented in the permit/fact sheet. (40 CFR 124.56) (Category 1)

- Permit documentation should include the basis or rationale for permitting decisions, such as monitoring frequencies and instructions to the discharger in the permit, including WET testing requirements, and post-WET test failure follow-up. (40 CFR 124.56) (Category 2)
- Permits should provide what is required from the permittee if a limit exceedance occurs (i.e., accelerated monitoring, TIE/TRE). (Category 3)

Rhode Island

- Citations to test methods must be included in the permit either by the current 2002 EPA WET test methods or through incorporation by reference in general permit conditions to 40 CFR Part 136 (as required under 40 CFR 136.1 and 136.3). (Category 1)
- Permit documentation should include the basis or rationale for permitting decisions, such as monitoring frequencies and instructions to the discharger in the permit, including WET testing requirements, and post-WET test failure follow-up. (40 CFR 124.56) (Category 2)
- Permits should require the permittees to submit reference toxicant test data for each species, to demonstrate that in-laboratory variability and organism response were evaluated. (Category 3)
- Although EPA guidance indicates that the 48-hour endpoint of the chronic test can give an indication of acute toxicity, a permit with acute limits should not require that 48-hour chronic test monitoring data be used to determine compliance with an acute WET limit. (Category 3)

Vermont

- Citations to test methods must be included in the permit either by the current 2002 EPA WET test methods, or through incorporation by reference in general permit conditions to 40 CFR Part 136 (as required under 40 CFR 136.1 and 136.3). (Category 1)
- Permit documentation should include the basis or rationale for permitting decisions, such as monitoring frequencies and instructions to the discharger in the permit, including WET testing requirements, and post-WET test failure follow-up (40 CFR 124.56) (Category 2)
- EPA recommends use of a definitive concentration series that brackets the facility IWC. (Category 2)
- Permits should require the permittee to submit reference toxicant test data for each species, to demonstrate that in-laboratory variability and organism response were evaluated. (Category 2)
- Permits should provide what is required from the permittee if a limit exceedance occurs (i.e., accelerated monitoring, TIE/TRE). (Category 3)

4.2.11 Pretreatment Program

Region 1 and states showed very low percentages of audits and inspections conducted from 2005 to 2009. Many permits could be strengthened by including more precise language from 40 CFR 122.44(j)(1). All permits reviewed, except those issued by Rhode Island, indicate a need for revision to incorporate streamlining rule provisions, as necessary. Recommended action items are as follows:

Region 1

- Region 1 should work with its authorized states to ensure that they are attaining all CMS goals for conducting inspections and audits at POTWs and should ensure that it achieves the goal in the states it oversees. To assess CMS goal achievement, Region 1 should establish a plan to track inspections/audits conducted at POTWs and address whether states are meeting goals of one PCA and two PCIs per five-year NPDES permit term. (Category 1)
- Massachusetts and New Hampshire permits for POTWs were all missing specific language from 40 CFR Part 122. Region 1 must ensure that permits include current NPDES regulation requirements for POTWs. (Category 1)
- Region 1 should inspect CIUs in POTWs without approved pretreatment programs in Massachusetts annually, and documentation of the inspections should be easily transparent to ensure adequate oversight is provided. This oversight should include periodic assessment of the need for an approved pretreatment program. (Category 1)
- Neither Connecticut nor Vermont perform any data entry for their pretreatment programs. Region 1 must increase oversight for Connecticut and Vermont (which are 40 CFR 403.10(e) states) to ensure that these states are issuing control mechanisms correctly, in a timely manner, and with good technical basis. (Category 1)
- Region 1 should work with its states to ensure that they are entering PCI and PCA data correctly into ICIS and PCS. (Category 2)
- Region 1's fact sheets for New Hampshire POTWs not required to have pretreatment programs are not consistent with the permit in describing requirements for reporting all SIUs. Region 1 should revise the fact sheets to be consistent with the permits. (Category 3)
- Region 1 should require in permits that all POTWs must conduct IWSs during the life of a permit to ensure that the POTWs meet the requirements at 40 CFR 122.44(j)(1). (Category 3)
- Region 1's permits and fact sheets for Massachusetts and New Hampshire should consistently describe whether pretreatment programs are not required or describe type(s) of discharge received (e.g., residential only). (Category 3)

Maine

- Maine permits for POTWs are all missing specific language from 40 CFR 122.44(j)(1). Region 1 and Maine must ensure that permits include current NPDES regulation requirements for POTWs. (Category 1)
- The Maine permits for POTWs without a pretreatment program should include a reopener clause to easily enable the permit to be modified to require a pretreatment program if determined to be necessary. (Category 2)

- Maine permits and fact sheets should clarify whether pretreatment programs are required and describe type of discharge received (i.e., residential only). (Category 3)
- Maine should require in permits that all POTWs not required to have pretreatment programs must conduct IWSs during the life of a permit to continually monitor potential nondomestic discharges to their systems—this will further ensure that the POTWs meet the requirements at 40 CFR 122.42(b) and reflect baseline information about IUs. (Category 3)

Rhode Island

- Rhode Island permits for POTWs are all missing specific language 40 CFR 122.44(j)(1) and do not contain the requirements at 40 CFR 122.42(b)(1) and 40 CFR 122.42(b)(2). Region 1 and Rhode Island must ensure that permits include current NPDES regulation requirements for POTWs. (Category 1)
- Rhode Island should ensure that it is attaining all CMS goals for conducting inspections and audits at POTWs. (Category 1)
- The Rhode Island permit has an incorrect CFR citation that is likely a typographical error that should be corrected. The citation of 40 CFR 122.21(j)(4) is incorrect because that section is titled Effluent Monitoring for Specific Parameters. Therefore, this is likely a typographical error and should be changed to 40 CFR 122.44(j)(2). (Category 3)
- Rhode Island permits and fact sheets should clarify whether pretreatment programs are required and describe type of discharge received (i.e., residential only). (Category 3)

Vermont

- Vermont permits for POTWs are all missing specific language from 40 CFR 122.44(j)(1). Region 1 and Vermont must ensure that permits include current NPDES regulation requirements for POTWs. (Category 1)
- Vermont should ensure that it is attaining all CMS goals for conducting inspections. (Category 1)
- Vermont must update its regulations in accordance with the 2005 federal revisions. (Category 1)

Connecticut

- Connecticut should ensure that it is attaining all CMS goals for conducting inspections and audits at POTWs. (Category 1)
- Connecticut should work to reissue SIU permits to reduce the current backlog. (Category 1)
- Connecticut does must update its regulations in accordance with the 2005 federal revisions. (Category 1)
- The state should put in the General Conditions that a slug plan can be required if deemed necessary; the state must have the legal authority to include this requirement in permits. (Category 3)

4.2.12 Nutrient Action Items

Connecticut:

Proposed Action Items to improve implementation of nutrient criteria in Connecticut's permits are the following:

- The state should ensure that it documents its RP determinations in its permits. (40 CFR 124.56) (Category 1)
- The state should ensure that it documents the derivation of its WQBELs. (40 CFR 124.56) (Category 1)

Rhode Island:

Proposed Action Items to improve implementation of nutrient criteria in Rhode Island's permits are the following:

- Rhode Island's fact sheets should be developed in accordance with regulatory requirements and explicitly describe the basis for permit requirements and decisions including, for example:
 - Include a characterization of the receiving water body including information on water quality concerns related to nutrient pollution, assimilative capacity, downstream impairments and TMDLs developed. (Category 2)
 - Include the specifics of a compliance schedule, such as length and final WQBEL. (Category 2)

Maine:

Proposed Action Items to improve implementation of nutrient criteria in Maine's permits are the following:

- Maine should develop fact sheets that more adequately document the basis for permit requirements and decisions including, for example:
 - Document decisions and rationales behind limits used in the permit (e.g. RP procedures and derivation of limits, including seasonal limits). (40 CFR 124.56) (Category 1)
 - Include a characterization of the receiving water body including information on water quality concerns related to nutrient pollution, assimilative capacity, downstream impairments and TMDLs developed. (Category 2)

Massachusetts:

Proposed Action Items to improve implementation of nutrient criteria in Region 1's permits in Massachusetts are the following:

- Region 1 should not grant permit compliance extensions to meet water quality effluent limits without proper documentation (CWA sections 11 and 17, 40 CFR 122.2 and 122.47). The Region may exercise enforcement discretion, modify the permit, or issue an administrative order with a new compliance date, and include documentation of such action in the administrative record. (Category 1)
- The Region should make sure that compliance schedules longer than 1 year include annual milestones that reflect any planning and construction activities that are required to achieve the applicable WQBELs. (40 CFR 122.47 (a)(3) (Category 1)
- RP procedures and calculations should be included in the fact sheet. (40 CFR 124.56) (Category 1)

- The derivation for the calculated WQBELs should be reflected in the permit or fact sheet, i.e., selection of critical values for ammonia needs to be clearer and justified. (40 CFR 124.56) (Category 1)
- Include ambient monitoring to assess overall nutrient-related effect on receiving water body quality. (Category 3)

New Hampshire:

Permits in New Hampshire do not address the monitoring or limiting of total nitrogen and do not provide a rationale for carrying over limits from previous permit cycles. Below are recommended action items that address EPA's concern for New Hampshire permits:

- Ambient water monitoring needs to be included to assess nutrient-related impacts, i.e., nuisance species (consistent with Env. Wq 1702.34 definition), DO depletion, chlorophyll *a*, and such. This can, in part, determine compliance with the free-froms narrative permit conditions. (Category 2)
- The Region should develop a fact sheet consistent with regulatory requirements and that specifically describes the basis for permit requirements and decisions including
 - Characterization of receiving water body and any water quality concerns related to nutrient pollution, including whether the water body is impaired for nutrients and whether a TMDL has been developed. (Category 2)
 - Decisions as to whether nutrients discharged have the RP to cause or contribute to an exceedance of WQS. (40 CFR 124.56) (Category 1)
 - Calculations for all nutrient limits that are included in the permit. (40 CFR 124.56) (Category 1)
 - Explanation of mixing zone approval and/or determination from NHES ought to be included, if there is one. An explanation if the mixing zone is blanket or pollutant by pollutant. (Category 3)

Vermont:

Fact sheets are inadequate in documenting decisions about whether to include limits for nutrients, and when included, how limits were calculated. There is limited information about the receiving water WQS and water quality conditions. Proposed Action Items to improve implementation of nutrient criteria in Vermont's permits are the following:

- Vermont should make sure that when the permits are reissued, limits are derived to meet the phosphorus and nitrate criteria in the 2008 Standards. (40 CFR 122.44(d)) (Category 1)
- Vermont should develop a fact sheet consistent with regulatory requirements that specifically describes the basis for permit requirements and decisions including, for example:
 - Characterization of receiving water body and any water quality concerns related to nutrient pollution, including if the water body is impaired and whether a TMDL has been developed. (Category 2)
 - Decisions as to whether nutrients discharged have the RP to cause or contribute to an exceedance of WQS. (40 CFR 124.56) (Category 1)
 - Include a characterization of the receiving water body. (Category 2)
 - Calculations for all nutrient limits that are included. (40 CFR 124.56) (Category 1)

- Mention whether the limits are technology-based or water quality-based. (Category 3)
- Vermont should reference applicable effluent limit guidelines used for industrial permits. (40 CFR 124.56) (Category 1)
- Vermont should confirm and demonstrate consideration of WQBELs for permit limit derivation and present the selection of the more stringent effluent limitation. (40 CFR 122.44(d)) (Category 1)
- Vermont should provide an explanation in its permits of how Waste Management Zones are considered in its permit limit derivation. There should be an explanation that documents why a Waste Management Zone has been applied to a discharger and how it is considered in the limit derivation and in the permit conditions. (40 CFR 124.56) (Category 1)

LIST OF ATTACHED APPENDICES

APPENDIX A: CENTRAL TENETS OF THE NPDES PERMITTING PROGRAM

APPENDIX B: CORE REVIEW CHECKLISTS

APPENDIX A – CENTRAL TENETS of the npdes Permitting Program

APPENDIX A – CENTRAL TENETS OF THE NPDES PERMITTING PROGRAM

I. Permit Administration	
CWA/NPDES Requirements	Conditions Subject to Disapproval
<p>The Clean Water Act (CWA) and NPDES regulations require that no point source may discharge pollutants to Waters of United States without explicit authorization provided by an NPDES permit. Complete applications must be submitted at least 180 days prior to discharge or expiration. Additionally, NPDES permit terms may not exceed 5 years. NPDES permits must clearly state the permit term and may not be modified to extend the permit term beyond 5 years. The NPDES regulations also require “fact sheets” for all major facilities, general permits, and other permits that may be subject to widespread public interest or raise major issues. Fact sheets MUST contain all of the elements prescribed at 40CFR124.8 AND 40CFR124.56.</p>	<ul style="list-style-type: none"> - Any facility that fails to submit a complete permit application at least 180 days prior to discharge or expiration <ul style="list-style-type: none"> -Any permit that does not clearly identify the permitted facility and describe the authorized discharge location(s) -Any permit with term > 5 years -Any permit modification that extends the permit term beyond 5 years - Any permit (for a major facility, general permit, et al.) that is not accompanied by a fact sheet developed in accordance with the requirements of 40CFR124.8 and 40CFR124.56.

II. Technology-Based Effluent Limits	
Municipal Dischargers - Publicly Owned Treatment Works (POTWs)	
CWA/NPDES Requirements	Conditions Subject to Disapproval
<p>CWA requires POTWs to meet secondary or equivalent to secondary standards (including limits for BOD, TSS, pH, and percent removal). Permits issued to POTWs, therefore, MUST contain limits for ALL of these parameters (or authorized alternatives) in accordance with the Secondary Treatment Regulations at 40 CFR Part 133.</p>	<ul style="list-style-type: none"> - Any permit that does not contain <u>specific numerical limits</u> for BOD (or authorized alternative; e.g., CBOD), TSS, pH, and percent removal. - Any permit that contains limits less stringent than those prescribed by the Secondary Treatment Regulation at 40 CFR Part 133, unless authorized by the exceptions noted in this regulation. Any permit that applies these exceptions must clearly document the basis. - Any permit that contains a compliance schedule that extends a statutory deadline for meeting secondary treatment requirements.

Non-Municipal Dischargers	
CWA/NPDES Requirements	Conditions Subject to Disapproval
<p>The CWA requires permits issued to non-municipal dischargers to require compliance with a level of treatment performance equivalent to “Best Available Technology Economically Achievable (BAT)” or “Best Conventional Pollutant Control Technology (BCT) by July 1, 1989, for existing sources, and consistent with “New Source Performance Standards (NSPS)” for new sources. Where effluent limitations guidelines (ELG) have been developed for a category of dischargers, the technology-based effluent limits MUST be based on the application of these guidelines. In addition, if pollutants are discharged at treatable levels, and ELGs are not available, or for pollutants that were not considered during the development of an applicable ELG, the permit must include requirements at least as stringent as BAT/BCT. The performance level equivalent to BAT/BCT MUST be developed on a case-by-case basis using the permit writer’s best professional judgement in accordance with the criteria outlined at 40CFR125.3(d).</p>	<ul style="list-style-type: none"> - Any permit that does not include a specific numerical limit (or other requirement) for any pollutant parameter that is part of an ELG applicable to a discharger. - Any permit that misapplies or miscalculates an applicable limit required by an ELG (<i>e.g., improper categorization, improper new source/existing source determination, inappropriate production or flow data used to calculate limits, failure to adjust limits to account for unregulated wastestreams such as non-contact cooling water or storm water</i>). - Any permit that does not contain a limit at least as stringent as required by 40CFR125.3(c)(2) where effluent limitations guidelines are inapplicable (<i>e.g., where a pollutant is discharged at treatable levels, but there is no applicable ELG, or the applicable ELG did not consider the pollutant of concern</i>). - Any permit that contains a compliance schedule that extends a statutory deadline for meeting a technology-based effluent limit.

III. Water Quality-Based Effluent Limits

CWA/NPDES Requirements	Conditions Subject to Disapproval
<p>CWA requires every State to develop water quality standards to protect receiving water, including designated uses, water quality criteria, and an antidegradation policy. The NPDES regulations at 40 CFR 122.44(d), require that limits MUST be included in permits where pollutants will cause, have reasonable potential to cause, or contribute to an exceedance of the State's water quality standards. States will likely have unique implementation policies for determining the need for and calculating water quality-based effluent limits; however, there are certain tenets that may not be waived by these State procedures. These include:</p> <ul style="list-style-type: none"> - Where valid, reliable, and representative effluent data or instream background data are available they MUST be used in applicable reasonable potential and limits derivation calculations. Data may not be arbitrarily discarded or ignored. - Where calculations indicate reasonable potential, a specific numeric limit MUST be included in the permit. Additional "studies" or data collection efforts may not be substituted for enforceable permit limits where "reasonable potential" has been determined. - Where the preponderance of evidence clearly indicates the potential to cause or contribute to an exceedance of State water quality standards (even though data may be sparse or absent), a limit MUST be included in the permit (e.g., a new POTW plans to chlorinate its effluent and instream chlorine toxicity is anticipated). - Where a technology-based is limit is required (due to an ELG or BPJ) AND the limit is not protective of water quality standards, a WQBEL MUST be developed and included in the permit regardless of whether data indicate reasonable potential (i.e., a technology-based limit cannot authorize a discharge that would result in a violation of water quality standards). - Where the permit authorizes the discharge of a pollutant that results in a new or increased load to the receiving water, the State must ensure that the new or increased load complies with the antidegradation provisions of the State's water quality standards. - The final calculated limit placed in the permit MUST be protective of water quality standards, and MAY NOT be adjusted to account for "treatability" or analytical method detection levels. 	<ul style="list-style-type: none"> - Any permit where the State fails to use all valid, reliable, and representative effluent or instream background data in reasonable potential and limits calculations. - Any permit where the State fails to include a final enforceable limit in a permit where the discharge of a pollutant will cause, have reasonable potential to cause, or contribute to an exceedance of a State water quality standard. - Any permit that fails to incorporate WLAs from an approved TMDL, or that contains a limit that is not consistent with the WLA prescribed in an approved TMDL - Any permit that contains technology-based limits that are not protective of water quality standards - Any permit that modifies a properly developed WQBEL to account for the ability of treatment to achieve the WQBEL or the availability of an analytical procedure to measure the presence of the pollutant - Any permit that authorizes new or increased loading of a pollutant that is not in compliance with the State's antidegradation policy - Any permit that contains a limit less stringent than a limit in the previous permit, unless specifically authorized under the antibacksliding provisions of the CWA - Any permit that allows a variance of a State water quality standard, unless the variance has been approved by the EPA Region. - Any permit that allows a new or increased loading of a pollutant to a receiving water that has not been evaluated for and shown to be in compliance with the antidegradation provisions of the State's water quality standards regulations. - Any permit that includes a compliance schedule for meeting a WQBEL, unless the State standards specifically allow for compliance schedules, and the standard was established or modified after July 1, 1977.

IV. Monitoring and Reporting Conditions

CWA/NPDES Requirements	Conditions Subject to Disapproval
<p>The CWA and NPDES regulations require permitted facilities to monitor the quality of their discharge and report data to the permitting authority. Each State will have unique policies and procedures to establish appropriate frequencies, procedures, and locations for monitoring; however, there are certain tenets that may not be waived by these procedures.</p>	<ul style="list-style-type: none"> - Any permit that does not require at least annual monitoring for all pollutants limited in the NPDES permit, unless the permittee has applied for and been granted a specific monitoring waiver by the permitting authority, and this specific waiver is included as a condition of the permit. - Any permit that does not require monitoring to be performed at the location where limits are calculated and applied (i.e., the monitoring location cannot be at a location that includes flows that were not accounted for in limits development; e.g., cooling water, storm water). - Any permit that does not require that the results of all monitoring of permitted discharges conducted using approved methods, be submitted to the permitting authority.

V. Special Conditions

Municipal Dischargers - Publicly Owned Treatment Works (POTWs)

CWA/NPDES Requirements	Conditions Subject to Disapproval
<p>In general, special conditions will be established based on the unique characteristics of the permitted facility. The appropriateness of these conditions, therefore, must be assessed on a case-by-case basis. However, there are certain elements of special conditions that may be the basis of an objection.</p>	<ul style="list-style-type: none"> - <u>Pretreatment</u>: Any permit for a POTW required to implement a pretreatment program that does not contain specific pretreatment conditions. [State/Regional-specific language] - <u>Municipal Sewage Sludge/Biosolids</u>: Any permit that does not contain conditions addressing the facility's use/disposal of biosolids consistent with Federal requirements. [State/Regional-specific language] - <u>Combined Sewer Overflows (CSO)</u>: Any permit for a facility authorized to discharge from CSOs, that does not comply with the State's CSO control policy and, at a minimum contain requirements for: <ul style="list-style-type: none"> ▶ Requiring compliance with all of the "Nine Minimum Controls" ▶ Requiring development and implementation of a "Long Term Control Plan" - <u>Sanitary Sewer Overflows (SSO)</u>: Any permit that authorizes the discharge of untreated effluent from SSOs under any circumstances.

Municipal and Non-Municipal Dischargers

CWA/NPDES Requirements	Conditions Subject to Disapproval
<p>In general, special conditions will be established based on the unique characteristics of the permitted facility. The appropriateness of these conditions, therefore, must be assessed on a case-by-case basis. However, there are certain elements of special conditions that may be the basis of an objection.</p>	<ul style="list-style-type: none"> - Any permit that contains a compliance schedule that extends a CWA deadline or otherwise modifies or postpones CWA or NPDES requirements unless specifically provided for in the statute or regulations. - Any permit that uses special studies or management plans to replace or modify limits or conditions that are required by the CWA or NPDES regulations, unless specifically provided for in the CWA or NPDES regulations (<i>e.g., permit requires a monitoring program in lieu of establishing a permit limit where available data indicate reasonable potential</i>).

VI. Standard Conditions	
CWA/NPDES Requirements	Conditions Subject to Disapproval
<p>The NPDES regulations at 40 CFR 122.41 and 122.42 require that certain “standard condntions” be placed in all NPDES permits. The regulations allow States to omit or modify these standard conditions ONLY where the omission or modification results in more stringent requirements. For example, the standard condition that allows “bypass” under certain circumstances or the standard condition that allows “upset” to be used as an affirmative defense, may be omitted because the result of the omission is a more stringent permit requirement.</p>	<ul style="list-style-type: none"> - Any permit that does not contain ALL of the standard conditions of 40 CFR 122.41 (unless the omission results in a more stringent condition). - Any permit that modifies the language of the standard conditions (unless the modification results in language that is more stringent than the 122.41 requirement). - Any permit for an existing non-municipal discharger that does not include the notification requirement of 40 CFR 122.42(a) - Any permit for a POTW that does not include the notification requirement of 40 CFR 122.42(b) - Any permit for a Municipal Separate Storm Sewer System (MS4) that does not include the annual reporting requirement of 40 CFR 122.42(c)

APPENDIX B – CORE REVIEW CHECKLISTS

APPENDIX B – CORE REVIEW CHECKLISTS
NPDES Permit Quality Review Checklist - For POTWs

Pre-Site Visit Review Information

		Response	Comment
1.	NPDES Permit number of facility:		
2.	Name of facility:		
3.	Permit Reviewer (Last Name):		
4.	Date of pre-site visit review (MM/DD/YYYY):		
5.	Is the draft permit complete ? (Y/N)		
6.	Is the fact sheet complete ? (Y/N)		

Site Visit Review Information

		Response	Comment
7.	Date of site visit review (MM/DD/YYYY)		
8.	Is the file copy of permit the same as the pre-site visit review version? (Y/N)		
9.	Is the file copy of the fact sheet the same as the pre-site visit review version? (Y/N)		
10.	Does the file (administrative record) contain appropriate supporting information (e.g., permit application, permit rationale, limit calculations)? (Y/N)		
11.	Does the file indicate that the permit writer obtained and reviewed DMR/compliance data? (Y/N)		
12.	Does the file indicate that the permit writer obtained and reviewed water quality data (e.g., pollutant concentrations, stream flows) for the receiving water (Y/N/NA)		

Facility Information

		Response	Comment
13.	Does the record or permit describe the physical location of the facility (e.g., address, lat/long)? (Y/N)		
14.	Does the record or permit provide the name of the receiving water body(s) to which the facility discharges? (Y/N)		
15.	Are all outfalls (including combined sewer overflow points) from the POTW treatment facility properly identified and authorized in the permit? (Y/N)		
16.	Does the record or permit contain a description of the wastewater treatment process? (Y/N)		

Permit Cover Page/Administration

		Response	Comment
17.	Does the permit term exceed 5 years? (Y/N)		
18.	Does the permit contain specific authorization-to-discharge information (from where to where, by whom)? (Y/N)		
19.	Does the permit contain appropriate issuance, effective, and expiration dates and authorized signatures? (Y/N)		

Effluent Limits

General Elements

		Response	Comment
20.	Does the record describe the basis (technology or water quality) for each of the final effluent limits? (Y/N)		
21.	Does the record indicate that any limits are less stringent than those in the previous NPDES permit? (Y/N)		
21a.	If yes, does the record discuss whether “antibacksliding” provisions were met? (Y/N)		

Technology-Based Effluent Limits (POTWs)

		Response	Comment
22.	Does the permit contain numeric limits for ALL of the following: BOD (or an alternative; e.g., CBOD, COD, TOC), TSS, pH, and percent removal? (Y/N)		
23.	Are percent removal requirements for BOD (or BOD alternative) and TSS included, and are they consistent with secondary treatment requirements (generally 85%; or modified in accordance with 40 CFR Part 133 allowances)? (Y/N)		
24.	Are technology-based permit limits expressed in appropriate units of measure (i.e., concentration, mass, SU)? (Y/N)		
25.	Are permit limits for BOD and TSS expressed in terms of both 30-day (monthly) average and 7-day (weekly) average limits? (Y/N)		
26.	Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/L BOD5 and TSS for a 30-day (monthly) average and 45 mg/L BOD5 and TSS for a 7-day (weekly) average)? (Y/N)		
26a.	If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations? (Y/N/NA)		
27.	Does the permit contain any <u>technology-based</u> limits for parameters other than those required by secondary treatment (e.g., chlorine, ammonia, nutrients)? (Y/N)		

Water Quality-Based Effluent Limits

		Response	Comment
28.	Does the record clearly identify the name of the receiving water(s) and the location within the receiving water(s) where the discharge(s) occur? (Y/N)		
29.	Does the record describe (list) the designated uses of the receiving water(s) to which the facility discharges (e.g., contact recreation, aquatic life use)? (Y/N)		
30.	Does the record describe the characteristics of the receiving water(s) (e.g., background pollutant concentrations) in the vicinity of the discharge(s)? (Y/N)		
31.	Does the record indicate that the receiving water(s) is/are impaired for any uses (i.e., that the receiving water(s) is/are listed on the State’s 303(d) list)? (Y/N)		
31a.	If yes, does the record indicate that a TMDL has been COMPLETED for the pollutant(s) causing the impairment(s)? (Y/N/NA)		
31b.	If yes, does the record indicate that WQBELs based on applicable WLAs from the completed TMDL(s) were included in the permit? (Y/N/NA)		
32.	Does the record document that a water quality impact assessment (i.e., RP/WQBEL calculations or other WQ model) was performed for this discharger? (Y/N) NOTE: IF “NO” – Skip to question #44		

		Response	Comment
33.	Does the record show that a WQ impact assessment was performed for all relevant outfalls at this facility? (Y/N)		
34.	Does the record show that the WQ impact assessment was performed in accordance with the State/Region implementation procedures? (Y/N/NA)		
35.	Does the record describe how "pollutants of concern" were selected for the WQ impact assessment? (Y/N)		
36.	Does the record indicate that any pollutants were missing from the WQ impact assessment (e.g., detected in the effluent or otherwise regulated by TBELs, but no WQ impact assessment performed)? (Y/N)		
37.	Did the WQ impact assessment (i.e., calculations/WQ model) provide an allowance for dilution? (Y/N)		
37a.	If yes, does the record describe how the dilution allowance was determined (e.g., complete/incomplete mixing, critical flow assumptions, mixing zone size)? (Y/N)		
37b.	If yes, did the WQ impact assessment account for contributions from other sources (e.g., ambient/background concentrations)? (Y/N/NA)		
38.	Based on the WQ impact assessment, does the permit contain numeric effluent limits for all pollutants that have a reasonable potential to cause or contribute to an excursion of applicable WQ standards? (Y/N/NA)		
39.	Does the record provide WQBEL calculations for all pollutants that were found to have "reasonable potential"? (Y/N/NA)		
39a.	If yes, are the calculation procedures consistent with the State's implementation procedures? (Y/N/NA)		
40.	Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the record? (Y/N/NA)		
41.	For all final WQBELs, are both long-term (e.g., average monthly) and short-term (e.g., maximum daily, instantaneous) effluent limits established? (Y/N/NA)		
42.	Does the record indicate that the permit will allow new or increased loadings to the receiving water? (Y/N)		
42a.	If yes, does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy? (Y/N/NA)		

Monitoring and Reporting Requirements

		Response	Comment
43.	Does the permit require at least annual monitoring for all limited parameters? (Y/N)		
44.	Does the record describe the rationale for monitoring location(s) and frequency(s)? (Y/N)		
45.	Does the permit require influent monitoring for BOD (or alternative) and TSS? (Y/N)		
46.	Does the permit require testing for Whole Effluent Toxicity? (Y/N)		

Special Conditions

		Response	Comment
47.	Does the permit include appropriate pretreatment program requirements? (Y/N/NA)		
48.	Does the permit include appropriate biosolids use/disposal requirements? (Y/N/NA)		
49.	If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements ? (Y/N/NA)		
50.	Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations? (Y/N/NA)		
51.	Does the permit allow discharges from Combined Sewer Overflows (CSOs) ? (Y/N)		
51a.	If yes, does the permit require implementation of the “Nine Minimum Controls” ? (Y/N/NA)		
51b.	If yes, does the permit require development and implementation of a “long-term control plan”? (Y/N/NA)		
51c.	If yes, does the permit require monitoring and reporting for CSO events? (Y/N)		
52.	Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs)]? (Y/N)		

Standard Conditions

		Response	Comment
53.	Does the permit contain all 40 CFR 122.41 standard conditions? (Y/N)		
	<p>List of Standard Conditions – 40 CFR 122.41</p> <ul style="list-style-type: none"> Duty to comply Duty to reapply Need to halt or reduce activity not a defense Duty to mitigate Proper O & M Permit actions Property rights Duty to provide information Inspections and entry 	<ul style="list-style-type: none"> Monitoring and records Signatory requirement Reporting requirements Planned change Anticipated noncompliance Transfers Monitoring reports Compliance schedules 24 hour reporting Other non-compliance Bypass Upset 	
54.	Does the permit contain the additional standard condition for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]? (Y/N)		

NPDES Permit Quality Review Checklist - For Non-Municipals

Pre-Site Visit Review Information

		Response	Comment
1.	NPDES Permit number of facility:		
2.	Name of facility:		
3.	Permit Reviewer (Last Name):		
4.	Date of pre-site visit review (MM/DD/YYYY):		
5.	Is the draft permit complete ? (Y/N)		
6.	Is the fact sheet complete ? (Y/N)		

Site Visit Review Information

		Response	Comment
7.	Date of site visit review (MM/DD/YYYY)		
8.	Is the file copy of permit the same as the pre-site visit review version? (Y/N)		
9.	Is the file copy of the fact sheet the same as the pre-site visit review version? (Y/N)		
10.	Does the file (administrative record) contain appropriate supporting information (e.g., permit application, permit rationale, limit calculations)? (Y/N)		
11.	Does the file indicate that the permit writer obtained and reviewed DMR/compliance data? (Y/N)		
12.	Does the file indicate that the permit writer obtained and reviewed water quality data (e.g., pollutant concentrations, stream flows) for the receiving water (Y/N/NA)		

Facility Information

		Response	Comment
13.	Does the record or permit describe the physical location of the facility (e.g., address, lat/long)? (Y/N)		
14.	Does the record or permit provide the name of the receiving water body(s) to which the facility discharges? (Y/N)		
15.	Are all outfalls from the facility properly identified and authorized in the permit? (Y/N)		
16.	Does the record or permit contain a description of the wastewater treatment process? (Y/N)		

Permit Cover Page/Administration

		Response	Comment
17.	Does the permit term exceed 5 years? (Y/N)		
18.	Does the permit contain specific authorization-to-discharge information (from where to where, by whom)? (Y/N)		
19.	Does the permit contain appropriate issuance, effective, and expiration dates and authorized signatures? (Y/N)		

Effluent Limits

General Elements

		Response	Comment
20.	Does the record describe the basis (technology or water quality) for each of the final effluent limits? (Y/N)		
21.	Does the record indicate that any limits are less stringent than those in the previous NPDES permit? (Y/N)		
21a.	If yes, does the record discuss whether “antibacksliding” provisions were met? (Y/N)		

Technology-Based Effluent Limits (Effluent Guidelines and BPJ)

		Response	Comment
22.	Is the facility subject to a national effluent limitations guideline (ELG) ? (Y/N)		
22a.	If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source ? (Y/N/NA)		
23.	For all limits that are based on production or flow, does the record indicate that the calculations are based on a “reasonable measure of ACTUAL production” for the facility (not design)? (Y/N/NA)		
24.	Does the permit contain “tiered” limits that reflect projected increases in production or flow? (Y/N)		
24a.	If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained? (Y/N/NA)		
25.	Does the record indicate that any limits were developed based on Best Professional Judgement (BPJ)? (Y/N/NA)		
25a.	If yes, does the record indicate that the limits were developed considering all of the criteria established at 40 CFR 125.3(d)?		
26.	Does the record adequately document the calculations used to develop both ELG and/or BPJ technology-based effluent limits ? (Y/N)		
27.	Are technology-based permit limits expressed in appropriate units of measure (i.e., concentration, mass, SU)? (Y/N)		
28.	Are all technology-based limits expressed in terms of both maximum daily and monthly average limits? (Y/N)		
29.	Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ? (Y/N)		

Water Quality-Based Effluent Limits

		Response	Comment
30.	Does the record clearly identify the name of the receiving water(s) and the location within the receiving water(s) where the discharge(s) occur? (Y/N)		
31.	Does the record describe (list) the designated uses of the receiving water(s) to which the facility discharges (e.g., contact recreation, aquatic life use)? (Y/N)		
32.	Does the record describe the characteristics of the receiving water(s) (e.g., background pollutant concentrations) in the vicinity of the discharge(s)? (Y/N)		
33.	Does the record indicate that the receiving water(s) is/are impaired for any uses (i.e., that the receiving water(s) is/are listed on the State's 303(d) list)? (Y/N)		
33a.	If yes, does the record indicate that a TMDL has been COMPLETED for the pollutant(s) causing the impairment(s)? (Y/N/NA)		
33b.	If yes, does the record indicate that WQBELs based on applicable WLAs from the completed TMDL(s) were included in the permit? (Y/N/NA)		
34.	Does the record document that a water quality impact assessment (i.e., RP/WQBEL calculations or other WQ model) was performed for this discharger? (Y/N) NOTE: IF "NO" – Skip to question #44		
35.	Does the record show that a WQ impact assessment was performed for all relevant outfalls at this facility? (Y/N)		
36.	Does the record show that the WQ impact assessment was performed in accordance with the State/Region implementation procedures? (Y/N/NA)		
37.	Does the record describe how "pollutants of concern" were selected for the WQ impact assessment? (Y/N)		
38.	Does the record indicate that any pollutants were missing from the WQ impact assessment (e.g., detected in the effluent or otherwise regulated by TBELs, but no WQ impact assessment performed)? (Y/N)		
39.	Did the WQ impact assessment (i.e., calculations/WQ model) provide an allowance for dilution? (Y/N)		
39a.	If yes, does the record describe how the dilution allowance was determined (e.g., complete/incomplete mixing, critical flow assumptions, mixing zone size)? (Y/N)		
39b.	If yes, did the WQ impact assessment account for contributions from other sources (e.g., ambient/background concentrations)? (Y/N/NA)		
40.	Based on the WQ impact assessment, does the permit contain numeric effluent limits for all pollutants that have a reasonable potential to cause or contribute to an excursion of applicable WQ standards? (Y/N/NA)		
41.	Does the record provide WQBEL calculations for all pollutants that were found to have "reasonable potential"? (Y/N/NA)		
41a.	If yes, are the calculation procedures consistent with the State's implementation procedures? (Y/N/NA)		
42.	Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the record? (Y/N/NA)		
43.	For all final WQBELs, are both long-term (e.g., average monthly) and short-term (e.g., maximum daily, instantaneous) effluent limits established? (Y/N/NA)		
44.	Does the record indicate that the permit will allow new or increased loadings to the receiving water? (Y/N)		
44a.	If yes, does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy? (Y/N/NA)		

Monitoring and Reporting Requirements

		Response	Comment
45.	Does the permit require at least annual monitoring for all limited parameters? (Y/N)		
45a.	If no, does the record indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver? (Y/N)		
46.	Does the record describe the rationale for monitoring location(s) and frequency(s)? (Y/N)		
47.	Does the permit require testing for Whole Effluent Toxicity? (Y/N)		

Special Conditions

		Response	Comment
48.	Does the permit require development and implementation of a Best Management Practices (BMP) plan or site specific BMPs? (Y/N)		
48a.	If yes, does the permit adequately incorporate and require compliance with the BMPs? (Y/N/NA)		
49.	If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements ? (Y/N/NA)		
50.	Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations? (Y/N/NA)		

Standard Conditions

		Response	Comment
51.	Does the permit contain all 40 CFR 122.41 standard conditions? (Y/N)		
	<p>List of Standard Conditions – 40 CFR 122.41</p> <ul style="list-style-type: none"> Duty to comply Duty to reapply Need to halt or reduce activity not a defense Duty to mitigate Proper O & M Permit actions Property rights Duty to provide information Inspections and entry 		<ul style="list-style-type: none"> Monitoring and records Signatory requirement Reporting requirements Planned change Anticipated noncompliance Transfers Monitoring reports Compliance schedules 24 hour reporting Other non-compliance Bypass Upset
52.	Does the permit contain the additional standard condition for non-municipals regarding notification levels [40 CFR 122.42(a)]? (Y/N)		