

Region 1 NPDES Permit Quality Review
Maine
Final

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I. PQR BACKGROUND

National Pollutant Discharge Elimination System (NPDES) Permit Quality Reviews (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 Clean Water Act (CWA) and NPDES regulations. Through this review mechanism, EPA promotes national consistency, identifies successes in implementation of the NPDES program and identifies opportunities for improvement in the development of NPDES permits.

EPA's review team, consisting of *three EPA Regional staff, two EPA Headquarters staff, and one contractor*, conducted a review of the *Maine NPDES permitting program* which included an on-site visit to the *Maine Department of Environmental Protection (ME DEP)* in *Augusta, Maine* on *June 15 – 16, 2016*.

The Maine PQR consisted of two components: core permit reviews and topic area permit reviews, which included national topics and regional topics. The core permit reviews involve the evaluation of selected permits and supporting materials using basic NPDES program criteria. These reviews focus on core permit quality and include a review of the permit application, permit, fact sheet, and any correspondence, reports or documents that provide the basis for the development of the permit conditions. Reviewers completed the core review by examining selected permits and supporting documentation, assessing these materials using standard PQR tools, and talking with permit writers and managers regarding the permit development process. The core review focuses on the *Central Tenets of the NPDES Permitting Program* to evaluate the Maine MEPDES program. The PQR also included conversations between EPA and the DEP staff and managers on program status, the permitting process, responsibilities, organization, staffing, and program challenges the state is experiencing.

National topic area permit reviews are conducted to evaluate similar issues or types of permits that are of national significance in all states. The national topics reviewed as part of the Maine PQR were: nutrient requirements, the pesticide general permit, pretreatment, and stormwater permitting.

Regional topic area reviews target regionally-specific permit types or particular aspects of permits that are of regional or state interest. The regional topic areas selected by EPA Region 1 are: *mixing zones, bacteria, Whole Effluent Toxicity (WET) and toxics (including the reasonable potential (RP) determination process)*. These reviews provide important information to *Maine, EPA Region 1, EPA Headquarters* and the public on specific program areas.

A total of 22 *individual* permits and 7 general permits were reviewed as part of the PQR. *Ten* permits were reviewed for the core review—of these, 6 permits were also reviewed for either national (i.e., nutrients, pesticides, pretreatment, stormwater) and/or regional topic areas (i.e., bacteria, mixing zones, WET and toxics, including the RP determination process).

EPA Region 1 (the Region) followed the *NPDES Permit Quality Review Standard Operating Procedures* (the SOP) (draft rev. July 2013) during the process of selecting permits for the Maine

PQR. Specifically, the Region selected permits in accordance with the SOP to conduct core permit reviews, national topic area permit reviews, and regional topic area permit reviews.

As a starting point in selecting the permits to be reviewed, the region obtained a list from EPA Headquarters, specifically the Office of Wastewater Management, of all of Maine’s individual NPDES permits which was generated from a data pull of EPA’s Integrated Compliance Information System (ICIS). This inventory included the following information for each permit: permit number, facility name, city, facility type (publicly owned treatment works [POTW] or non-POTW), facility size (expressed as minor or major), date of last issuance and expiration. EPA Headquarters also provided Region 1 with a list of all of Maine’s general permits. Additionally, ME DEP provided EPA Region 1 with listings of their individual and general NPDES permit universe. These lists were compared to the ICIS report and any discrepancies were noted. An email request was sent to ME DEP noting the discrepancies and requesting a response to resolve them. ME DEP provided information to reconcile the discrepancies, which resulted in the removal of several permits from the ICIS report (i.e., permits that had been retired, general permits, and permits for which no origin was known—and which would be terminated—were removed from the ICIS list), leaving an inventory of 367 permits from which to select for inclusion in the PQR review.

Next, the remaining permits on the ICIS list were sorted according to major/minor status, then, within the major and minor sub-groupings, the permits were sorted based on whether they were issued to POTWs or non-POTWs. In accordance with the SOP, an emphasis was placed on recently-issued permits in selecting permits to include in the core review. Therefore, permits that were issued prior to March 2014 were eliminated from the list of permits to be considered. This emphasis on recently issued permits, which was also utilized for the selection of permits to include in the national and regional topic area reviews, was also based on the assumption that more recently issued permits would more accurately reflect Maine’s current permitting practices.

The list of permits which met the selection eligibility criteria specified in the SOP were broken down as follows:

TOTAL PERMITS	162
Total Major	24
Total Major -Non-POTW	5
Total Major-POTW	19
Total Minor	138
Total Minor-POTW	33
Total Minor-Non-POTW	105

In accordance with the SOP, a total of 10 permits were selected for the core review, with 8 of the permits reviewed being those issued to major facilities and 2 being those issued to minor

facilities. Out of the 162 permits that fit the selection criteria, 52 (32%) were issued to POTWs, and 110 (68%) were issued to non-POTWs. Therefore, following the guidance provided in the SOP, a total of 4 POTW permits and 6 non-POTW permits were selected for the core review to reflect the ratio of POTWs to non-POTW permits in the state. Of the 4 POTW permits that were selected for review, all were issued to major facilities. Of the 6 non-POTW permits that were selected for review, 4 were issued to major facilities and 2 were issued to minor facilities. Two of the permits were randomly selected per the SOP.

Permits were selected for the national and regional topic area reviews based on issuance date and the review categories that they fulfilled. Six of the ten permits that were selected for the core review were included in the national and/or regional topic area reviews. All of the permits that were selected for the core, nutrients, bacteria, pretreatment, mixing zones, WET and toxics (including the RP determination process) reviews were individual NPDES permits, while the permits included in the pesticides and stormwater reviews were general NPDES permits.

Exhibit 1: Maine PQR Permits

Review Focus	NPDES ID	Facility Name	Facility Type
CORE	ME0100064	BOOTHBAY HARBOR SEWER DISTRICT	POTW-Major
CORE	ME0100951 ¹	PARIS UTILITY DISTRICT	POTW-Major
CORE	ME0100854	KENNEBEC SANITARY TREATMENT DISTRICT	POTW-Major
CORE	ME0100391	MECHANIC FALLS SANITARY DISTRICT	POTW-Major
CORE	ME0001872	WOODLAND PULP LLC	Non-POTW-Major
CORE	ME0000159	TWIN RIVERS PAPER COMPANY LLC	Non-POTW-Major
CORE	ME0002160	BUCKSPORT MILL LLC	Non-POTW-Major
CORE	ME0021521	S. D. WARREN COMPANY	Non-POTW-Major
CORE	ME0036218 ¹	MCCAIN FOODS USA, INC.	Non-POTW-Minor
CORE	ME0037401	MAINE WOODS PELLET COMPANY, LLC	Non-POTW-Minor
NATIONAL TOPICS			
NUTRIENTS	ME0100391	MECHANIC FALLS SANITARY DISTRICT	POTW-Major
NUTRIENTS	ME0100951 ³	PARIS UTILITY DISTRICT	POTW-Major
NUTRIENTS	ME0102075	PORTLAND Water District – East End WWTF	POTW-Major
NUTRIENTS	ME0036218 ³	MCCAIN FOODS USA, INC.	Non-POTW-Minor
PESTICIDES	MEG140000	APPLICATION OF AQUATIC PESTICIDES FOR THE CONTROL OF MOSQUITO BORNE DISEASES	Pesticides
PESTICIDES	MEG230000	GP FOR THE DISCHARGE OF PESTICIDES	Pesticides

Review Focus	NPDES ID	Facility Name	Facility Type
PESTICIDES	MEG150000	APPLICATION OF HERBICIDES FOR THE CONTROL OF INVASIVE AQUATIC PLANTS	Pesticides
PESTICIDES	MEG180000	APPLICATION OF PISCICIDES FOR THE CONTROL OF INVASIVE FISHES	Pesticides
PRETREATMENT	ME0100625	SKOWHEGAN TOWN OF	POTW-Major
PRETREATMENT	ME0100048	BIDDEFORD CITY OF	POTW-Major
PRETREATMENT	ME0100854	KENNEBEC SANITARY TREATMENT DISTRICT	POTW-Major
PRETREATMENT	ME0101478	LEWISTON AUBURN WATER POLLUTION CONTROL AUTHORITY	POTW-Major
STORMWATER	DEPLW0801	STORMWATER - MAINE CONSTRUCTION GENERAL PERMIT	Stormwater
STORMWATER	MER050000	STORMWATER - MULTI-SECTOR INDUSTRIAL STORMWATER GENERAL PERMIT	Stormwater
STORMWATER	MER041000	STORMWATER - MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) - GENERAL PERMIT	Stormwater
REGIONAL TOPICS			
Bacteria	ME0100757	WISCASSET TOWN OF	POTW-Minor
Bacteria	ME0101214	BAR HARBOR TOWN OF	POTW-Major
Bacteria	ME0101184	KENNEBUNKPORT TOWN OF	POTW-Major
Bacteria	ME0100854	KENNEBEC SANITARY TREATMENT DISTRICT	POTW-Major
Bacteria	ME0100391	MECHANIC FALLS SANITARY DISTRICT	POTW-Major
Bacteria	ME0101478	LEWISTON AUBURN WATER POLLUTION CONTROL AUTHORITY	POTW-Major
WET/Toxics/RP	ME0100064	BOOTHBAY HARBOR SEWER DISTRICT	POTW-Major
WET/Toxics/RP	ME0000159	TWIN RIVERS PAPER COMPANY LLC	Non-POTW-Major
WET/Toxics/RP	ME0002160	BUCKSPORT MILL LLC	Non-POTW-Major
WET/Toxics/RP	ME0100625	SKOWHEGAN TOWN OF	POTW-Major
Mixing Zones	ME0001911	TEX TEC INDUSTRIES	Non-POTW-Minor
Mixing Zones	ME0002160	BUCKSPORT MILL LLC	Non-POTW-Major
Mixing Zones	ME0021521	S.D. WARREN	Non-POTW-Major
Mixing Zones	ME0022320	PENOBSCOT ENERGY RECOVERY COMPANY	Non-POTW-Minor
Mixing Zones	ME0023957	ISF TRADING COMPANY	Non-POTW-Minor
Mixing Zones	ME0037176	STEPHEN E. GRAY LODGES & INDUSTRIES	Non-POTW-Minor

Review Focus	NPDES ID	Facility Name	Facility Type
Mixing Zones	ME0037397	ACADIA AQUA FARMS, LLC	Non-POTW-Minor

¹Permit randomly selected

The information in Section II is based on the state’s responses to PQR questions.

II. STATE PROGRAM BACKGROUND

A. Program Structure

Within the Maine Department of Environmental Protection (ME DEP), Bureau of Water Quality, the Division of Water Quality Management (DWQM) is responsible for administering the NPDES program within the state. DWQM is responsible for regulatory oversight and licensing, including wastewater licensing and stormwater licensing. Stormwater licensing includes issuing the Multisector General Permit (MSGP), Municipal Separate Storm Sewer System (MS4) permits, and the Post Construction Discharge of Stormwater in the Long Creek Watershed General Permit. DWQM also is responsible for compliance, enforcement, technical assistance, financial assistance, Underground Injection Control (UIC), and sand/salt and pump-out. The DWQM coordinates with the Division of Environmental Assessment during permit development, which provides monitoring and modelling support. DEP’s main office is located in Augusta, Maine. Within this office DWQM performs all of the core permitting functions: permitting, compliance, enforcement, and data management. DEP has three regional offices located in southern Maine (Portland), northern Maine (Presque Isle), and eastern Maine (Bangor). These regional offices primarily address permit compliance and have a minor role in assisting seasonal ambient water quality monitoring.

Within DEP, 55 staff persons support NPDES permit development as all or part of their job responsibilities. This includes permit writers, biologists, modelers, compliance/enforcement personnel, and engineers. There are 5.5 permit writers, 2 water quality modelers, 6 TMDL staff and administrative and upper level management staff who also support the permit development process. Permit writers attend EPA’s Permit Writers’ Training Course and receive internal mentoring for professional development.

Maine DEP/DWQM uses the Environmental Facilities Information system (EFIS), a compliance and permit application tracking system, and the Toxics Tracking System (Toxscan/DETOX) to support permit development and for the evaluation of toxic parameters to protect water quality. Toxscan and DETOX are used to evaluate reasonable potential and the need for water quality-based effluent limits (WQBELs). Data are collected from Toxscan and analyzed using DETOX. Maine DEP also uses EPA’s Integrated Compliance Information System (ICIS) to collect discharge monitoring data.

Maine DEP does not use templates to develop permits or fact sheets. Staff work from the previous permit or fact sheet and update language based on language in recently-issued permits and fact sheets. Staff coordinate regularly and are kept abreast of boilerplate language updates. DWQM staff use a spreadsheet tool to calculate reasonable potential for a discharge to cause, potential to cause, or contribute to an excursion above water quality criteria. DEP staff also employ models including CORMIX and WASP to supporting permit development (e.g., calculate mixing zones).

DWQM staff develop an internal draft of each permit that the Division reviews to ensure there is internal consensus on the draft permit prior to sharing the draft with the discharger and the public. Upper level management provide quality assurance/quality control (QA/QC) on the internal draft and subsequent proposed and final draft permits. Final permits are signed by the DEP Commissioner.

DEP's permit files are maintained by permit writers in the Augusta office. Monitoring, reporting and compliance records are maintained by compliance officers in regional offices.

B. Universe and Permit Issuance

As of the dates of the PQR, DWQM administers 1,030 MEPDES permits. This includes 150 POTW permits (70 major POTW facilities and 80 non-major facilities), 34 CSO permits, and 164 non-municipal permits (10 major facilities, 148 non-major facilities, 6 concentrated animal feeding operations (CAFOs)) as well as permittees covered by non-stormwater general permits. Major industries in Maine subject to effluent limit guidelines (ELGs) include pulp and paper producers, textiles, and steam electric power generators.

Stormwater permits administered by DWQM include three MS4 permits (Small MS4s, Maine DOT and Turnpike Authority MS4s, and state or federal MS4s) that cover 40 permittees, a multi-sector general permit that covers 640 permittees, and a Construction General Permit. Maine also has a general permit for Post-Construction Discharge of Stormwater into the Long Creek Watershed.

DWQM non-stormwater general permits include the following: (24 permittees)

- Antifouling Paint Contaminated Wash Water
- Application of Aquatic Pesticides for the Control of Mosquito-borne Diseases
- Application of Herbicides for the Control of Invasive Aquatic Plants
- Application of Piscicides for the Control of Invasive Fishes
- Discharge of Pesticides (incidental and unintended discharge to surface waters)
- Net Pen Aquaculture
- Snow Dumps to Surface Waters

- Snow Dumps to Ground Water

Notices of Intent (NOIs) are tracked electronically in the EFIS system.

ME DEP also licenses treated discharges to surface waters of domestic pollutants that are not conveyed and treated in municipal treatment facilities as overboard discharges. Typical overboard discharges include systems that serve residences, schools, and small commercial establishments. Starting in the 1970s, state licenses to overboard discharges have replaced straight-pipe discharges from residential dwellings, schools, and small commercial operations along the coast where septic systems cannot be installed and municipal sewers are not available. Overboard discharges continually are being replaced with sewage system connections or septic systems as technology advances and where building codes allow. Since 1987, over two thirds of the state's overboard discharges have been removed, with about 900 remaining. Secondary Treatment required by ME DEP in overboard discharges licenses include biological treatment (typically mechanical systems or sand filters) and disinfection. Larger overboard discharges (greater than 2000 gallons per day) (N=35) receive NPDES/State permits with NPDES permit numbers, monitoring requirements, and DMR reporting requirements. Smaller overboard discharges, mostly from residential properties or seasonal homes or facilities that typically have a licensed discharge of 300 gallons per day, receive a state only license. Overboard discharges are subject to regular state inspections, with approximately 1000 inspections taken place annually. ME DEP continues working towards phasing out overboard discharges. Until all overboard discharges are eliminated, ME will continue conducting inspections of the remaining facilities.

For MEPDES major permits, 95.6 percent of POTW permits are current (4.4 percent of these permits are backlogged) and 80 percent non-POTW permits are current (20 percent are backlogged). For minor permits 94.3 percent of POTW permits are current (5.7 percent are backlogged – 7 of these permits are CWA section 301(h) facilities that are the responsibility of EPA Region 1) and 96 percent of non-POTW permits are current (4 percent are backlogged). Maine DEP works to address any backlogged permits at the beginning of each fiscal year. DEP is currently meeting its priority permit goals.

Maine DEP uses a mix of EPA and state MEPDES permit application forms. A letter is sent to the permittee with the relevant permit application forms 6-9 months prior to the expiration date of the existing permit. Permit applications are reviewed for completeness by the permitting section head. At ME DEP's instruction, the permittee publishes a public notice at the permit application stage. Complete applications are accepted for processing and the information contained in the application is entered into the EFIS system.

A schedule of permits to be renewed or modified in each calendar year is developed and approved by December 1 of each year. Permits are assigned to permit writers by upper level management (e.g., Wastewater Licensing Unit Manager) based on knowledge and experience, familiarity with the industrial sector, workload, and career performance. Maine DEP staff conduct an internal meeting following information and document gathering (DMR and toxics data; applications; policies and guidance), as necessary. Staff discuss the specific permit and

identify data gaps, trends, compliance issues, etc., that may result in more or less stringent permit conditions. The internal meeting also assists in setting a schedule for permit development.

Permit writers have primary responsibility for developing the permit in coordination with compliance, technical assistance, enforcement staff and water quality experts in the Division of Environmental Assessment. Permit writers compile the information necessary to develop the permit including the existing permit, ICIS data, testing and sampling data (WET, mercury, priority pollutants), statistical evaluations of such data (for reasonable potential determinations or for determining permit limit exceedances), the status of the receiving water, the permit application or NOI, and other relevant information based on the facility/ site being permitted. Permit writers initially develop an internal draft that is circulated for internal comment, followed by a preliminary draft that is shared for comment with EPA, state and federal agency staff, the permittee, and other parties that have expressed early interest. The permit writer then develops a proposed draft which provides the permittee, state and federal agencies and other persons who have notified DEP that they wish to have an opportunity to comment on the permit. The proposed draft is available on EPA Region 1's website once it is received by EPA and posted, however, this may not coincide with a 30-day public comment period for the selected interested parties, who are notified of the comment period by e-mail. Proposed draft permits and fact sheets are not routinely made available for public comment at this time nor is a notice of a public comment period for the proposed draft permit published in a local newspaper for major permits. Comments received by ME DEP on the proposed draft permit that result in substantive changes or that are rejected (but otherwise would have resulted in such changes) are addressed in writing in the Response to Comment section of the final permit and fact sheet. Once comments are addressed, a final permit is prepared for signature and provided, along with the response to comments, to the permittee, compliance staff, DWQM staff, EPA, and all commenters.

Permit writers develop technology-based effluent limitations (TBELs) based on DEP rules (Chapter 524, Sec. 2), *Criteria and Standards for Imposing Technology-Based Treatment Requirements Under Sections 301(b) and 402 of the Act* and (Chapter 525), *Effluent Guidelines and Standards*.

Water quality based effluent limits (WQBELs) are developed in accordance with Chapter 584, *Surface Water Quality Criteria for Toxics*, and Chapter 530, *Surface Water Toxics Control Program, Maine Specific DETOX Program*. DEP also has developed a memorandum entitled *MEDEP's System for Evaluating Toxicity from Multiple Discharges* (October 2008). WQBELs are based on water quality criteria, dilution factors, ambient water quality data and modelling analyses. All priority pollutants are evaluated, as well as ammonia. The ToxScan database is used to support the DETOX statistical analysis, which determines reasonable potential and calculates required limits. DEP normally uses ambient data collected by the Department, permittee or third parties pursuant to an approved Quality Assurance Project Plan. If such data are not available, the default ambient concentration for toxics is 10 percent of the acute water quality criterion (Chapter 530, *Surface Water Toxics Control Program*). Mixing zones are authorized at 38 M.R.S. §451. Complete mixing is assumed in some cases and not in others, and

size constraints are imposed. In general, CORMIX is used to model mixing zones. Permit fact sheets include general discussions of the basis and use of mixing zones in developing WQBELs.

Anti-degradation requirements are evaluated when a new discharge is proposed or when an increased discharge will use more than 20 percent of the remaining assimilative capacity of a receiving water. The policy is set forth at 38 M.R.S. 464(4)(F) and DEP has a guidance memorandum addressing implementation. Implementation is documented through the use of boilerplate language in the relevant fact sheet. Anti-backsliding requirements are applied when less stringent numeric limitations are being imposed in a permit. Where applicable, these requirements are implemented and explained in the relevant fact sheets.

Permit monitoring requirements reflect permit discharge limits and are based on state documents (Summary of Maine Conditions for NPDES Permit Certification, March 1992) as well as EPA's 1996 guidance regarding performance-based reductions of monitoring frequencies, and DEP's 2014 supplemental guidance on the same topic. Permittees are required to submit electronic discharge monitoring reports (DMRs) to DEP monthly. Reported data is forwarded to ICIS.

Narrative conditions can address special conditions (e.g., narrative effluent limits, operator requirements, industrial user (IU) limitations, notification requirements, authorized discharges, high flow management plan, operation and management plan, combined sewer overflow provisions) and, for POTWs, pretreatment requirements. Standard conditions are reviewed by the Maine Attorney General's office and were last updated July 1, 2002.

Permit writers develop fact sheets for all permits as the permit is drafted. Typically, the existing fact sheet is modified based on changes to the permit or changes to regulations or policy or standard language for specific topics.

Section 401 certification review is only performed for facilities subject to CWA section 301(h) waivers (i.e., waiver of secondary treatment for POTWs discharging to marine waters). Certification occurs via a Department Order.

With regard to public notice and an opportunity to comment, the permittee publishes a public notice at the permit application stage, but not when draft permits (also called proposed permits or proposed draft permits) and fact sheets are available. Comments can be submitted on the application, or later on the draft permit and fact sheet. In addition to the permittee and state and federal agencies, persons that have notified the Department of their interest receive a copy of the draft permit and have 30 days to comment. This notice is provided in an e-mail to the interested party. Permit writers draft written responses to substantive comments on draft permits and these are included in the Response to Comments section of the final permit and fact sheet.

DEP rule 06-096 CMR 2 provides authority for a permit applicant or any person to request a hearing (including testimony and cross-examination) regarding any permit application, at the time of that the permit application is public noticed. Permit appeals can be brought before the Maine Board of Environmental Protection. This occurs rarely, perhaps once every five years.

No permit objections to an ME DEP issued permit have been received from EPA since inception of the MEPDES program in 2001.

C. State-Specific Challenges

Specific challenges for the MEPDES program include the following:

See Current State Initiatives below regarding State regulatory revisions, a new NPDES program application, and implementation of CWA § 316(b).

D. Current State Initiatives

The 2001 authorization of the Maine NPDES program did not include authorization for implementing the CWA §316(b) program which regulates cooling water intake structures through NPDES permits. At that time, there was agreement that Maine would promptly enact appropriate legislation for this authorization and apply for authorization for §316(b) permitting. Thus, Maine DEP is pursuing NPDES authorization to regulate cooling water intake structures (316(b)). Currently ME DEP is revising and updating its state NPDES regulations (Chapters 520 through 529) to make them consistent with all current federal NPDES regulations. This effort will be used by ME DEP to prepare a NPDES State Program Revision Application, in accordance with 40 CFR 123.21. The application will include a program description, a proposed Memorandum of Understanding (MOA), the revised regulations, and an Attorney General's statement in order to become authorized to implement the CWA Section 316(b) permitting program and other updated provisions. Since it has been over 15 years since the state received authorization to implement the NPDES program, program revision will include any other state regulatory changes need to make state NPDES regulations equivalent to the federal NPDES regulations. In the meantime, it is EPA's responsibility to issue permit provisions to implement CWA §316(b), and EPA is aware of a number of permits where 316(b) provisions are needed to be updated or required for the first time.

III. CORE REVIEW FINDINGS

A. Basic Facility Information and Permit Application

1. Facility Information

Basic facility information is necessary to properly establish permit conditions. For example, information regarding facility type, location, processes and other factors is required by NPDES permit application regulations (40 CFR 122.21). This information is essential for developing technically sound, complete, clear and enforceable permits. Similarly, fact sheets must include a description of the type of facility or activity subject to a draft permit.

The ten Maine NPDES permits and fact sheets reviewed during the core review include permit issuance, effective and expiration dates, authorized signatures, and specific authorization to discharge information. These permits are issued as DEP Orders. The fact sheets reviewed include a basic description of the facility, including general location and treatment process; the

level of detail varied among the fact sheets reviewed. Fact sheets for the POTW permits reviewed contain detailed descriptions of the wastewater treatment process. Facility descriptions in fact sheets for the non-POTW permits reviewed provide a general description of plant operations, wastewater treatment processes and applicable industrial categorization, including SIC codes. Permits and fact sheets identify the receiving waterbody by name and surface water classification. Fact sheets for the core permits do not indicate the specific location of the outfall using latitude and longitude information, however, location maps included in the permit generally identify the facility and outfall location. Further, fact sheets generally lack a clear description of the discharge location within the receiving waterbody. Finally, the core permits reviewed do not identify if the facility is a major or non-major facility.

2. Permit Application Requirements

Federal regulations at 40 CFR 122.21 and 122.22 specify application requirements for permittees seeking NPDES permits. Although federal forms are available, authorized states are also permitted to use their own forms provided they include all information required by the federal regulations. This portion of the review assesses whether appropriate, complete, and timely application information was received by the state and used in permit development.

Federal regulations established at 40 CFR 122.21(j)(3)(i) require applicants to provide outfall locations, including latitude/longitude information. ME DEP uses a state form for POTW applications (DEPLW1999-21). Maine's POTW form does not require submittal of latitude and longitude information. In addition, 40 CFR 122.21(g)(4)(ii) requires every applicant provide analytical results for certain parameters (BOD, fecal coliform, design flow rate, pH, temperature, and TSS) and for facilities with a design capacity greater than or equal to 0.1 million gallons per day (MGD), 40 CFR 122.21(j)(4)(iii) requires the submittal of results for specific parameters (ammonia, chlorine, dissolved oxygen, nitrate-nitrite, total Kjeldahl nitrogen, oil and grease, phosphorus, and total dissolved solids). Further, 40 CFR 122.21(j)(5)(i) and (ii) require submittal of WET results, and for facilities with a design capacity greater than or equal to 1 MGD, the submittal of the results of priority pollutant analyses, respectively. However, Maine's form DEPLW1999-21 does not require submittal of analytical data for any parameters (it does request the dates of WET and priority pollutant screening conducted under Chapter 530.5 and submitted within the previous five years). The state application does not request the submittal of data that EPA Form 2A requests ("Effluent Testing Information" in section A.12, "Effluent Testing Data" in section B.6, and "Expanded Effluent Testing Data" in part D). While, 40 CFR 122.21(j) allows that previously submitted information can be referenced and the Director may waive requirements if he or she has access to substantially identical information, no record of such a waiver was found in the permit file.

In addition, one permit application (ME0100391) was received late and the file did not indicate DEP had granted an extension to file the application. For one permit (ME0002160), Form 2C was not identified in the permit file. For a second permit (ME0100854), no application was identified in the file (file materials were incomplete or unavailable).

B. Technology-based Effluent Limitations

NPDES regulations at 40 CFR 125.3(a) require that permitting authorities develop technology-based requirements where applicable. Permits, fact sheets and other supporting documentation for POTWs and non-POTWs were reviewed to assess whether technology based effluent limitations (TBELs) represent the minimum level of control that must be imposed in a permit.

1. TBELs for POTWs

POTWs must meet secondary or equivalent to secondary standards (including limits for BOD₅, TSS, pH, and percent pollutant removal), and must contain numeric limits for all of these parameters (or authorized alternatives) in accordance with the secondary treatment regulations at 40 CFR Part 133. A total of *four* POTW permits were reviewed as part of this PQR.

The fact sheets for the POTW core permits reviewed include a detailed description of the wastewater treatment process. These POTW permits contain technology-based effluent limitations (TBELs) based on and consistent with secondary treatment standards and contain effluent limitations for BOD₅ and TSS in appropriate units and forms. In addition, these permits establish minimum percent removal requirements consistent with secondary treatment standards (40 CFR 133.102(a) and (b)). All of the municipal permits reviewed establish influent monitoring requirements for BOD₅ and TSS.

2. TBELs for Non-POTW Dischargers

Permits issued to non-POTWs must require compliance with a level of treatment performance equivalent to Best Available Technology Economically Achievable (BAT) or Best Conventional Pollutant Control Technology (BCT) for existing sources, and consistent with New Source Performance Standards (NSPS) for new sources. Where applicable federal effluent limitations guidelines (ELGs) have been developed for a category of dischargers, the TBELs in a permit must be based on the application of these guidelines. If ELGs are not available, a permit must include requirements developed on a case-by-case using best professional judgment (BPJ) in accordance with the criteria outlined at 40 CFR 125.3(d).

Six non-POTW permits were reviewed during this PQR. Four of these six facilities are subject to ELGs. The fact sheets reviewed include a description of the facility and the treatment process. ELG categorization is discussed generally (i.e., fact sheets indicate which ELGs are applicable to the discharge but not the basis). In a few cases, the TBELs are presented in the fact sheet along with a comparison of applicable WQBELs and the fact sheets appropriately discuss selection of the more stringent limit. In one case (ME0037401), TBEL derivation is not explicitly discussed (for cooling tower blowdown, temperature). In another case (ME0000159) the applicable subpart of the ELG was identified and a statement was made that the water-quality based limits for BOD and TSS were more stringent, without a calculation of the technology-based TSS or BOD limits. In such cases, it is suggested that the fact sheet should contain a quantitative comparison of the technology-based limit derived from the ELG to the water-quality based limit. The permit records include documentation of the calculations used to develop ELG-based limits for the four facilities subject to ELGs. For the permits where ELGs apply, the limits in the

respective permits appear to be consistent with the applicable ELGs. The technology-based limits in the non-POTW permits are expressed in appropriate units and forms.

C. Water Quality-Based Effluent Limitations

The NPDES regulations at 40 CFR 122.44(d) require permits to include any requirements in addition to or more stringent than technology-based requirements where necessary to achieve state water quality standards, including narrative criteria for water quality. To establish such “water quality-based effluent limits” (WQBELs), the permitting authority must evaluate the proposed discharge and determine whether technology-based requirements are sufficiently stringent, and whether any pollutants or pollutant parameters could cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standard.

The PQR for Maine assessed the processes employed by permit writers and water quality modelers to implement these requirements. Specifically, the PQR reviewed permits, fact sheets, and other documents in the administrative record to evaluate how permit writers and water quality modelers:

- determined the appropriate water quality standards applicable to receiving waters,
- evaluated and characterized the effluent and receiving water, including identifying pollutants of concern,
- determined critical conditions,
- incorporated information on ambient pollutant concentrations,
- assessed any dilution considerations,
- determined whether limits were necessary for pollutants of concern and, where necessary,
- calculated such limits or other permit conditions.

For impaired waters, the PQR also assessed whether and how permit writers consulted and developed limits consistent with the assumptions and recommendations of applicable EPA-approved total maximum daily loads (TMDLs).

Maine DEP employs an integrated watershed-based approach to calculating wasteload allocations. The fact sheets for the core permits reviewed identify the receiving water body and identify the water body classification. The fact sheets do not describe the receiving water’s designated uses, however, they do indicate the classification of such waters (e.g., AA, A, B or C for fresh surface waters not classified as great ponds), and the designated uses can be determined based on the water body classification as specified in Maine’s water quality standards. The fact sheets reviewed specifically discuss the receiving water body’s impairment status, the pollutants causing impairment(s), and applicability of TMDLs. They also include attachments that discuss DEP’s system for evaluating toxicity from multiple dischargers (October 2008 memo, “*DEP’s System for Evaluating Toxicity from Multiple Dischargers*”), a flowchart depicting the steps of the DETOX process, a priority pollutant data summary (which

lists test dates and number of tests by pollutant category) and a facility priority pollutant data report (which lists pollutant, test date, concentration, less-than notation).

The fact sheets that were included in the review do not directly address the selection of pollutants of concern, as described in 6.2.1 (pg. 6-13) of NPDES Permit Writers' Manual. The fact sheets generally indicate that statistical analysis was conducted, consistent with EPA guidance (see *Technical Support Document for Water Quality-Based Toxics Control* (TSD), March 1991 [EPA/505/2-90-001]), on up to 60 months' worth of effluent data and also reference the Identification Number of the reasonable potential analysis report.¹ The fact sheets generally indicate dilution factors derived pursuant to state regulations. The fact sheets also indicate whether or not reasonable potential was identified for any pollutants based on the analysis conducted and, where it was identified, how limits were developed for these pollutants. Where reasonable potential was identified, the core permits reviewed include corresponding limits. (See III.G.1 for a discussion of WQBEL documentation findings).

Water quality-based effluent limits were removed from three of the reviewed permits (ME0036218 (removal of WET limits), ME0001872 (removal of WET and cyanide limits), and ME0100951 (removal of ammonia limit) based on a finding that the discharges did not present reasonable potential to exceed applicable water quality criteria. Improvements in water quality, with the reasons indicating no reasonable potential, should not be reason for removing an existing limit. Water quality improvements are expected by permit limits and will not be sustained if permit limits are then relaxed. Existing limits should be evaluated to determine whether they still provide adequate protection of water quality standards or whether they need to be made more stringent.

Improvements in water quality, with the reasons indicating no reasonable potential, should not be reason for removing an existing limit. Water quality improvements are expected by permit limits and will not be sustained if permit limits are then relaxed.

In at least one permit (ME0000159), a technology-based permit limit for pH was selected (5.0 SU to 9.0 SU) without a discussion or selection of a water quality-based limit which would appear to be more stringent and consistent with the applicable water quality standards set forth in M.R.S. Title 38 § 464.A.(5)).

D. Monitoring and Reporting

NPDES regulations at 40 CFR 122.41(j) require permittees to periodically evaluate compliance with the effluent limitations established in their permits and provide the results to the permitting authority. Monitoring and reporting conditions require the permittee to conduct routine or episodic self-monitoring of permitted discharges and where applicable, internal

¹ An attachment to the fact sheets is "*DEP's system for evaluating toxicity from multiple dischargers*" (October 2008), which in part indicates that "[e]ach toxic pollutant and associated water quality criterion for acute, chronic and/or human health effects is evaluated separately." Division of Water Quality Management Guidance (January 24, 2014) also indicates that permitting procedures include obtaining three years of DMR data and five years of WET and mercury test results and priority pollutant data and evaluating reasonable potential that demonstrates an excursion above applicable water quality criteria.

processes, and report the analytical results to the permitting authority with information necessary to evaluate discharge characteristics and compliance status.

Specifically, 40 CFR 122.44(i) requires NPDES permits to establish, at minimum, annual monitoring for all limited parameters sufficient to assure compliance with permit limitations, including specific requirements for the types of information to be provided and the methods for the collection and analysis of such samples. In addition, 40 CFR 122.48 requires that permits specify the type, intervals, and frequency of monitoring sufficient to yield data which are representative of the monitored activity. The regulations at 40 CFR 122.44(i) also require reporting of monitoring results with a frequency dependent on the nature and effect of the discharge.

The core permits reviewed require monitoring for all of the parameters subject to permit limits and specify the frequency of such monitoring. Specified monitoring locations were not identified in several of the permits reviewed (ME0100951, ME0100854, ME0100391, ME0037401). The POTW permits include acute and chronic WET testing requirements. Influent monitoring for BOD and TSS is not required in the body of the limits and monitoring requirements tables in the POTW permits, however, the footnotes to these tables include a condition that states “[t]he treatment facility shall maintain a minimum of 85 percent removal of both biochemical oxygen demand and total suspended solids for all flows receiving secondary treatment. The percent removal shall be calculated based on influent and effluent concentration values.”

Two of the core permits that were reviewed (ME0100064 and ME0000159) required the use of non-promulgated test methods, and were therefore inconsistent with 40 CFR 122.44, which requires the use of methods that have been approved under 40 CFR Part 136.

The standard conditions in the core permits do not include an explicit requirement to use sufficiently sensitive analytical methods for all regulated parameters, however, the permits do specify that priority pollutant and analytical chemistry testing “must be conducted using methods that permit detection of a pollutant at existing levels in the effluent or that achieve minimum reporting levels of detection as specified by the Department.” (See, Special Conditions, sub-sections A.8 through 10). The permits reviewed require that monitoring information be reported on Discharge Monitoring Reports. Maine DEP developed an eDMR system in 2005 and continues to implement and improve this system. As of the date of the PQR 80 percent of MEPDES permittees submit DMRs electronically.

E. Standard and Special Conditions

Federal regulations at 40 CFR 122.41 require that all NPDES permits, including NPDES general permits, contain an enumerated list of “standard” permit conditions. Further, the regulations at 40 CFR 122.42 require that NPDES permits for certain categories of dischargers must contain additional standard conditions. Permitting authorities must include these conditions in NPDES permits and may not alter or omit any standard condition, unless such alteration or omission results in a requirement more stringent than required by the federal regulations.

In addition to standard permit conditions, permits may also contain additional requirements that are unique to a particular permittee or discharger. These case-specific requirements are generally referred to as “special conditions.” Special conditions might include requirements such as: additional monitoring or special studies such as pollutant management plan or a mercury minimization plan; best management practices (see 40 CFR 122.44(k)), or permit compliance schedules (see 40 CFR 122.47). Where a permit contains special conditions, such conditions must be consistent with applicable regulations.

The permits reviewed include standard conditions that are applicable to all MEPDES permits (based on Maine DEP regulations, Chapter 523). In general, these standard conditions are consistent with federal standard conditions. With regard to potential penalties for certain permit violations (e.g., the duty to comply, monitoring and record requirements and signatory requirements), the permits reviewed indicate that any person who violates the laws administered by the DEP or MEPDES permits is subject to the penalties set forth in 38 M.R.S.A. § 349, which include civil and criminal penalties as well as penalties for falsification of and tampering with information, reports, documents, or certifications. In addition to the specific penalty provisions being somewhat obscured by the external statutory reference, some aspects of these state penalty provisions do not appear to be fully consistent with existing federal provisions (e.g., the civil penalty maximum has not been adjusted to reflect inflation [see, 40 CFR 19.4]; and penalties for knowing criminal violations do not have a maximum fine of \$50,000 per day of violation or imprisonment). In addition, at the time of the PQR, Maine Chapter 523 of Maine’s environmental regulations (i.e., MEPDES standard conditions) had not yet been amended to reflect EPA’s final Electronic Reporting Rule, which in parts expands 40 CFR 122.41(6) and (7) to include reporting non-compliance information related to combined sewer overflows, sanitary sewer overflows or bypass events, and specifies the nature and schedule for electronic reporting. Under 40 CFR 123.62(e), authorized states have one year to make program revisions to conform with federal NPDES program changes, unless statutory changes are required, in which case the state has two years to make such revisions. The Electronic Reporting Rule became effective 12/21/2015.

MEPDES permits identify essentially all permit conditions other than standard conditions as special conditions. These include discharge limit and monitoring tables, monitoring and reporting requirements, sampling and analysis methods, narrative conditions, treatment plant operator requirements, notification requirements, limitations for industrial users, wet weather flow management plan requirements, pump station monitoring and bypass conditions, transported waste conditions, operation and management plan requirements, mixing zone information, thermal load provisions, certification requirements, BMP provisions, compliance schedules, conditions for reduced toxics testing, reopener provisions, and severability provisions, as appropriate.

F. Administrative Process

The administrative process includes documenting the basis of all permit decisions (40 CFR 124.5 and 40 CFR 124.6); coordinating EPA and state review of the draft (or proposed) permit (40 CFR 123.44); providing public notice (40 CFR 124.10); conducting hearings if appropriate (40 CFR

124.11 and 40 CFR 124.12); responding to public comments (40 CFR 124.17); and, modifying a permit (if necessary) after issuance (40 CFR 124.5). EPA discussed each element of the administrative process with Maine DEP and reviewed materials from the administrative process as they related to the core permit review.

Permittees publish a public notice when permit applications are submitted and comments can be submitted until the permit is finalized.² Federal regulations at 40 CFR 124.10(a)(ii) require public notice when a draft permit has been prepared. While ME DEP accepts comments on the draft permit, the 40 CFR 124.10 public notice requirements are not fully met. For example, 40 CFR 124.10(c)(2)(i) requires public notice in a local newspaper of draft major permits, and this does not appear to be happening. For five of the permits reviewed, the public notice of the draft permit was not identified in the permit file (ME0001872, ME0021521, ME0036218, ME0100391, and ME0100064). In general, significant public comments and DEP written responses were identified at the end of the fact sheets reviewed. In some cases, the fact sheet indicated that no significant comments were received. One permit was modified, and the modification appeared to be processed in a manner consistent with applicable procedures.

G. Administrative Record

The administrative record is the foundation that supports the NPDES permit. If EPA issues the permit, 40 CFR 124.9 identifies the required content of the administrative record for a draft permit and 40 CFR 124.18 identifies the requirements for a final permit. Authorized state programs should have equivalent documentation. The record should contain the necessary documentation to justify permit conditions. At a minimum, the administrative record for a permit should contain the permit application and supporting data; draft permit; fact sheet or statement of basis; all items cited in the statement of basis or fact sheet including calculations used to derive the permit limitations; meeting reports; correspondence between the applicant and regulatory personnel; all other items supporting the file; final response to comments; and, for new sources where EPA issues the permit, any environmental assessment, environmental impact statement, or finding of no significant impact.

Current regulations require that fact sheets include information regarding the type of facility or activity permitted, the type and quantity of pollutants discharged, the technical, statutory, and regulatory basis for permit conditions, the basis and calculations for effluent limits and conditions, the reasons for application of certain specific limits, rationales for variances or alternatives, contact information, and procedures for issuing the final permit.

The MEPDES fact sheets reviewed are consistent with respect to organization and content. Typically, these include information under the following headings: Application Summary, Permit Summary, Receiving Water Quality Standards, Conditions of Permits, Receiving Water Quality

² State regulations provide that DEP must notify the applicant, relevant federal and state agencies, and persons on a DEP mailing list that an application has been filed, and also require public notice that a MEPDES hearing has been scheduled (see, Chapter 522, Section 8). The notice must include contact information for a person who can provide access to the draft permit, fact sheet or application. In addition, copies of the draft permit, fact sheet and application must be made available to the applicant, relevant federal and state agencies, and persons on a DEP mailing list including those responding to public notices and requesting information on certain applications.

Conditions, Effluent Limitations and Monitoring Requirements, Discharge Impact on Receiving Water Quality, Public Comments, Department Contacts, and Response to Comments. Non-POTW permit fact sheets also may include information addressing: Modifications Requested, River Flow, and Best Management Practices Plan. Attachments to these fact sheets typically include: a facility map, a facility flow chart, a WET test report, a priority pollutant data summary (which lists test dates and number of tests by pollutant category) and/or a facility priority pollutant data report (which lists pollutant, test date, concentration, less-than notation), a DEP memorandum regarding evaluating toxicity from multiple discharges, a waived or reduced WET testing certification statement, and potentially other permit-specific items. MEPDES permit fact sheets also include a thorough description of the history of the respective permit and a description of changes made to the draft permit from the conditions included in the previous permit.

In some cases, permit records were not found to be complete. As discussed below, certain elements supporting the derivation of WQBELs were not identified in the files reviewed. In addition, in one instance (ME0100854), no permit record was identified except for three items of correspondence with comments on the preliminary or draft permit. Also, all public comments received during the public comment period were not consistently identified in the respective permit files (although, as discussed, the fact sheets include summaries of significant comments and DEP responses).

1. Documentation of Effluent Limitations

Permit records for POTWs and industrial facilities should contain comprehensive documentation of the development of all effluent limitations. Technology-based effluent limits should include assessment of applicable standards, data used in developing effluent limitations, and actual calculations used to develop effluent limitations. The procedures implemented for determining the need for water quality-based effluent limitations as well as the procedures explaining the basis for establishing, or for not establishing, water quality-based effluent limitations should be clear and straight forward. The permit writer should adequately document changes from the previous permit, ensure draft and final limitations match (unless the basis for a change is documented), and include all supporting documentation in the permit file.

With regard to documentation of the effluent limitations applicable to non-POTW facilities, in most cases the fact sheets reviewed provide a good description of the facility, wastestreams and treatment, and include a discussion of which ELGs are applicable to the discharge. This discussion could benefit from some additional detail, such as whether the discharge is a new source or an existing source. The fact sheet for one permit (ME0037401) did not discuss the applicable TBEL. In general, the fact sheets discuss the application and development of the TBELs. In four of the five permits subject to ELGs, the permit records include documentation of the calculations used to develop ELG-based limits.

With regard to documentation of WQBELs, the fact sheets reviewed identify the receiving water and applicable water quality standards, and describe the impairment status of the receiving water, including whether a TMDL is in place. These fact sheets generally indicate that

reasonable potential analysis was conducted consistent with the process outlined in EPA guidance and identify pollutants for which reasonable potential was found. For pollutants that exceeded a threshold for reasonable potential, the fact sheets explain how permit limits were developed. The fact sheets do not present a summary of toxics data evaluated in the reasonable potential analysis (DETOX reports are cited, but are not retained in the permit file and not discussed in detail in the fact sheets), and do not go into detail about evaluation of available toxics effluent monitoring data and the results of the reasonable potential evaluations. The permits and fact sheets for three of the reviewed permits indicated that limits had been removed based on the results of reasonable potential analyses, which indicated the discharges do not present reasonable potential to exceed ambient water quality criteria (ME0001872, ME0036218, and ME0100951). According to Section 6.3.2.4 of EPA's *Permit Writers' Manual* (EPA, September 2010 [EPA-833-K-10-001]), permit writers need to document the details of the reasonable potential analysis in the NPDES permit fact sheet. The permit writer should clearly identify the information and procedures used to determine the need for WQBELs. The goal of that documentation is to provide the NPDES permit applicant and the public a transparent, reproducible, and defensible description of how each pollutant was evaluated, including the basis (i.e., reasonable potential analysis) for including or not including a WQBEL for any pollutant of concern.

The fact sheets generally discuss dilution, however, neither CORMIX model reports nor descriptions of mixing zones were consistently identified or referenced in the permit files, per state statute (38 M.R.S. 451).

Two fact sheets lack a specific discussion of antidegradation for new or increased discharges (ME0037401 (Maine Wood Pellets Company, LLC) for heat and ME0001872 (Woodland Pulp, LLC) for AOX). For each of these permits, the second page of the DEP Order includes a standard statement that the provisions of the state's antidegradation policy will be met because the discharge meets one or more of five delineated conditions of the state policy. This language indicates some level of consideration of antidegradation but does not make it clear which of the conditions apply to this facility and what assessment or analysis the statement is based on. With regard to anti-backsliding, the fact sheet for one permit (ME0036218) did not include a discussion of anti-backsliding regarding the removal a WET limit. This permit (pg. 1) and fact sheet (pg. 28) indicate that based on the results of 60 months of WET tests, there is no reasonable potential for WET. However, the fact sheet for this permit does not explain why this data constitutes an exception to anti-backsliding requirements. Similarly, water quality-based effluent limits were removed from two other reviewed permits (, ME0001872, and ME0100951) without any discussion as to how their removal is consistent with anti-backsliding requirements. Data and/or revised analyses which indicate improvements in water quality is not a sufficient reason for invoking the anti-backsliding exception of "new information". Antidegradation analyses for new or increased discharges should be clearly described in fact sheets, as should anti-backsliding analyses conducted for permits in which less stringent limits, including those that are calculated based on new or revised criteria (i.e., arsenic), are proposed.

H. National Topic Areas

National topic areas are aspects of the NPDES permit program that warrant review based on the specific requirements applicable to the selected topic areas. These topic areas have been determined to be important on a national scale. National topic areas are reviewed for all state PQRs. The national topics areas are: nutrients, pesticides, pretreatment and stormwater.

1. Nutrients

For more than a decade, both nitrogen and phosphorus pollution has consistently ranked as one of the top causes of degradation of surface waters in the U.S. Since 1998, EPA has worked at reducing the levels and impacts of nutrient pollution. A key part in this effort has been the support EPA has provided to States to encourage the development, adoption and implementation of numeric nutrient criteria as part of their water quality standards (see the EPA's *National Strategy for the Development of Regional Nutrient Criteria*). In a 2011 memo to the EPA regions titled *Working in Partnerships with States to Address Nitrogen and Phosphorus Pollution through use of a Framework for State Nutrient Reductions*, the Agency announced a framework for managing nitrogen and phosphorus pollution that, in part, relies on the use of NPDES permits to reduce nutrient loading in targeted or priority watersheds.

Background

Maine has not adopted narrative or numeric nutrient-specific criteria in its WQS; however, the State has been in the process of developing proposed numeric criteria. Waste Discharge License Conditions, 06-096 CMR 523 specifies that water quality based limits are necessary when it has been determined that a discharge has a reasonable potential to cause or contribute to an excursion above any State water quality standard including State narrative criteria³. In addition, 06-096 CMR 523 specifies that water quality based limits may be based upon criterion derived from a proposed State criterion, or an explicit State policy or regulation interpreting its narrative water quality criterion, supplemented with other relevant information which may include: EPA's Water Quality Standards Handbook, October 1983, risk assessment data, exposure data, information about the pollutant from the Food and Drug Administration, and current EPA criteria documents⁴.

Waste Discharge License Conditions, 06-096 CMR 523 (effective January 12, 2001), specifies that water quality based limits are necessary when it has been determined that a discharge has a reasonable potential to cause or contribute to an excursion above any State water quality standard including State narrative criteria (06-096 CMR 523(5)(d)(1)(i)). In addition, 06-096 CMR 523 specifies that water quality based limits may be based upon criterion derived from a proposed State criterion, or an explicit State policy or regulation interpreting its narrative water quality criterion, supplemented with other relevant information which may include: EPA's Water Quality Standards Handbook, October 1983, risk assessment data, exposure data,

³ *Waste Discharge License Conditions*, 06-096 CMR 523(5)(d)(1)(i) (effective date January 12, 2001)

⁴ 06-096 CMR 523(5)(d)(1)(vi)(A)

information about the pollutant from the Food and Drug Administration, and current EPA criteria documents (06-096 CMR 523(5)(d)(1)(vi)(A)).

EPA’s review included an examination of how well the permitting authority documented decisions relative to determinations made with respect to the inclusion of nitrogen and/or phosphorus limitations and monitoring requirements in NPDES permits and whether such determinations were consistent with state water quality standards. 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 Total Maximum Daily Loads (TMDLs), limit expression and WQBELs calculations. To assess how nutrients are addressed in the ME DEP NPDES program, EPA Region I reviewed four permits (two POTW permits and two non-POTW permits) as part of the nutrient topic review area. These permits are as follows:

Review Focus	NPDES ID	Facility Name	Facility Type Indicator
NUTRIENTS	ME0100391	Mechanic Falls Sanitary District	POTW - Major
NUTRIENTS	ME01009513	Paris Utility District	POTW - Major
NUTRIENTS	ME0102075	Portland Water District-East End WWTF	POTW - Major
NUTRIENTS	ME00362183	McCain Foods USA, Inc.	NON-POTW - Major

Program Strengths

Three of the four permits reviewed (Paris Utility District WWTF, McCain Foods Inc., and Mechanic Falls Sanitary District) include limits and monitoring requirements for nutrients. The permit for the Paris Utility District WWTF includes an ortho-phosphorus limit, while the permits for McCain Foods, Inc., and Mechanic Falls Sanitary District WWTF include total phosphorus limits. Fact sheets generally include a discussion of the criteria that were applied as well as a summary of reasonable potential analyses and effluent limitation derivation.

Critical Findings

The concerns noted by EPA in its review of these permits primarily relate to inadequate analyses of all available information pertaining to current receiving water and effluent characteristics and not including limitations and conditions in permits which will restore water quality as well as prevent future impairments of water quality when the results of reasonable potential analyses indicate the need for their inclusion.

A review of the file for the permit that was issued to the Paris Utility District (ME0100951) indicates that the limit in the permit is based on a 1987 Waste Load Allocation. The Fact Sheet contains no information relative to whether or not water quality impairments remain. It is not sufficient to merely rely on a 29-year-old waste load allocation to determine that a permit limit

will ensure attainment of standards. The Fact Sheet should have included an up to date reasonable potential analysis using current receiving water and effluent discharge data.

The Fact Sheet for the permit that was issued to the Portland Water District – East End WWTF (ME0102075) concludes that based on total nitrogen data from five sites in the vicinity of the outfall and a far-field dilution estimate, there is no reasonable potential for the ambient target of 0.32 mg/l total nitrogen for the protection of eelgrass habitat to be exceeded as a result of the discharge. In addition to providing no details relative to the ambient nitrogen data, the Fact Sheet provides no information on other nutrient related response variables such as chlorophyll a, macro-algae, light attenuation, or dissolved oxygen. The fact sheet does, however, indicate that while the areal coverage of eelgrass in the vicinity of the outfall has stayed relative constant, eelgrass beds near the outfall are showing signs of impairment (high epiphyte growth on eelgrass at nearby Mackworth Island and thinning beds near East End Beach which is the closest eelgrass bed to the outfall). A further review of the available ambient water quality data indicates that total nitrogen levels near the outfall range from 0.33 – 0.41 mg/l. It is only when data from a far field sampling site is included that an average total nitrogen concentration of 0.31 ug/l, which was used to develop the permit, results. The available chlorophyll a data, while limited, indicates evidence of nitrogen enrichment and macro-algae blooms are known to periodically be an issue in parts of the receiving water. A comprehensive review of all of the available data is needed to support a conclusion that there is no reasonable potential that the discharge could cause or contribute to a water quality impairment. Further, if no reasonable potential is found, ME DEP should ensure the ambient water quality and effect data is collected during the next permit term to enable a more robust reasonable potential determination in the next permit cycle.

The Fact Sheet for the permit that was issued to the Mechanic Falls Sanitary District (ME0100391), indicates that there is reasonable potential and that a mass limit for total phosphorus of 0.14 lbs/day is included in the permit. Additionally, the Fact Sheet indicates that two years of ambient biological monitoring is required. However, the permit contains neither of these requirements. In the Response to Comments document for the draft permit, a revised reasonable potential analysis was conducted using newly acquired effluent data from 2014 and no reasonable potential was found. Consequently, the water quality based phosphorus requirements that were proposed in the draft permit were not included in the final permit. The effluent data used in the revised reasonable potential analysis (0.22 mg/l) reflects levels that are only achieved in municipal wastewater effluent through active treatment such as chemical precipitation or chemical precipitation and filtration. Without a permit limit, this facility will not be required to continue actively treating for phosphorus removal. Without this treatment, phosphorus discharge levels would be expected to be an order of magnitude higher which would result in a reasonable potential finding. It would have been appropriate to include monitoring requirements for total phosphorus in the permit in order to establish a robust data set for assessing treatment efficiency and for characterizing the effluent.

The permit that was issued to McCain Foods USA, Inc. (ME0036218) contains a mass limit for total phosphorus of 63 lbs/day. This limit is based on a reasonable potential analysis and a

calculation based on meeting 100 ug/l in the receiving water under 7Q10 flow conditions. The Fact Sheet contains a thorough discussion of water quality status and previous modeling efforts. In order to address high levels of downstream algae, a model was developed in 2004 that recommended a discharge limit of 10 lbs/day for total phosphorus. A more current 2013 data report indicates that while the biology of the receiving water is relatively healthy, the system is still enriched with supersaturated dissolved oxygen levels as high 13.6 mg/l. This report recommended a 50% reduction in phosphorus loads. McCain Foods was discharging approximately 60 lbs/day of phosphorus when this study was conducted. The Gold Book based target of 100 ug/l is for free flowing rivers. Given the impoundments on this receiving water, and the evidence that a 63 lb/day phosphorus limit is not sufficient to control cultural eutrophication, the Gold Book target of 50 ug/l total phosphorus for impounded rivers would have been a more appropriate criteria target.

2. Pesticides

On October 31, 2011, the EPA issued a final NPDES *Pesticide General Permit (PGP) for Discharges from the Application of Pesticides*. This action was in response to a 2009 decision by the U.S. Sixth Circuit Court of Appeals (National Cotton Council of America v. EPA, 553 F.3d 927 (6th Circuit 2009)) in which the court vacated EPA's 2006 Final Rule on Aquatic Pesticides (71 Fed. Reg. 68483, November 27, 2006) and found that point source discharges of biological pesticides and chemical pesticides that leave a residue, into waters of the U.S. were pollutants under the CWA. The federal PGP applies where the EPA is the permitting authority. All delegated state NPDES authorities, including Maine, have issued state pesticide general permits that are consistent with EPA's 2011 PGP. This PGP was reissued and became effective on November 1, 2016 with only minor changes and the delegated States have reissued or are in the process of reissuing their respective permits that authorize the discharges associated with pesticide application from the four (4) use patterns outlined in EPA's PGP.

Background

On January 7, 2009, the Sixth Circuit vacated the EPA's 2006 NPDES Pesticides Rule under a plain language reading of the CWA. National Cotton Council of America v. EPA, 553 F.3d 927 (6th Circuit 2009). The Court held that the CWA unambiguously includes "biological pesticides" and "chemical pesticides that leave a residue" within its definition of "pollutant." In response to this decision, on April 9, 2009, EPA requested a stay of the mandate to provide the Agency time to develop general permits, to assist NPDES-authorized states to develop their NPDES permits, and to provide outreach and education to the regulated community. The U.S. Court of Appeals for the Sixth Circuit granted EPA's request for an extension for when permits would be required to October 31, 2011.

ME DEP has issued four General Permits listed in the table below that cover the 4 use patterns of EPA's PGP. All of these permits were reviewed for the 2016 Maine PQR, with a focus on verifying their consistency with NPDES program requirements.

Review Focus	NPDES ID	Facility Name
PESTICIDES	MEG140000	APPLICATION OF AQUATIC PESTICIDES FOR THE CONTROL OF MOSQUITO BORNE DISEASES
PESTICIDES	MEG230000	GP FOR THE DISCHARGE OF PESTICIDES
PESTICIDES	MEG150000	APPLICATION OF HERBICIDES FOR THE CONTROL OF INVASIVE AQUATIC PLANTS
PESTICIDES	MEG180000	APPLICATION OF PISCICIDES FOR THE CONTROL OF INVASIVE FISHES

Program Strengths

Maine DEP issued four separate General Permits for different use patterns (control of mosquito borne disease, discharge of pesticides, control of invasive aquatic plants, and control of invasive fishes), all of which are consistent with EPA’s PGP. The permit for invasive aquatic plants goes beyond EPA’s PGP in requiring water quality monitoring at lake outlets for some larger applications. Aside from MEG150000 which is currently in the process of being reissued, all other GPs are in effect.

Critical Findings

Notices of Intent are submitted in hard copy and transition to electronics submission is required by 2020. Due to ongoing NPDES delegation efforts in Maine, there are 2 northern tribes where neither EPA nor Maine DEP had jurisdiction. Therefore, neither State or Federal PGP permits apply on these tribal lands at this time. Otherwise, no critical findings were identified for the PGP.

3. Pretreatment

The general pretreatment regulations (40 CFR 403) establish responsibilities of federal, state, and local government, industry and the public to implement pretreatment standards to control pollutants from industrial users which may cause pass through or interfere with POTW treatment processes or which may contaminate sewage sludge

Background

The goal of this pretreatment program review was to assess the status of the pretreatment program in Maine, as well as assess specific language in POTW NPDES permits. Maine is authorized to implement the pretreatment NPDES program components. With respect to NPDES permits, focus was placed on the following regulatory requirements for pretreatment activities and pretreatment programs:

- 40 CFR 122.42(b) (POTW requirements to notify Director of new pollutants or change in discharge);
- 40 CFR 122.44(j) (Pretreatment Programs for POTWs);
- 40 CFR 403.8 (Pretreatment Program Requirements: Development and Implementation by POTW);
- 40 CFR 403.9 (POTW Pretreatment Program and/or Authorization to revise Pretreatment Standards: Submission for Approval);
- 40 CFR 403.12(i) (Annual POTW Reports); and

- 40 CFR 403.18 (Modification of POTW Pretreatment Program).

The PQR also summarizes the following: Program Oversight (number of audits and inspections conducted; numbers of significant industrial users (SIUs) in approved pretreatment programs; numbers of categorical industrial users (CIUs) discharging to municipalities that do not have approved pretreatment programs); and the status of implementation of changes to the general pretreatment regulations at 40 CFR part 403 adopted on October 14, 2005 (known as the streamlining rule).

The pretreatment universe in Maine includes 11 approved local industrial pretreatment programs, which regulates 110 significant industrial users (SIUs) and 45 categorical industrial users (CIUs)

The Maine Department of Environmental Protection (ME DEP) maintains a master permit pretreatment section (permit language) that contains standard wording for all new and re-issued MEPDES permits for POTWs with approved IPPs.

Program Strengths

Pretreatment Compliance Inspections (PCIs) and Audits - MEPDES has consistently and diligently exceeded its EPA Performance Partnership Agreement commitments for conducting PCIs and Pretreatment Audits. Maine has eleven (11) approved IPPs and a quarterly PCI or Audit has been conducted without exception over the past 15 years. All 11 IPPs have had a PCI or Audit performed over the last two (2) calendar years, and for the 2016 fiscal year, eight (8) oversight events were performed (5 PCIs and 3 Audits). This far exceeds the Compliance Monitoring Strategy inspection goals as well as the PPA commitment.

Mercury Dental Amalgam Program – In 2003 Maine Statute Title 38: Waters and Navigation, Chapter 16-B: Mercury-added Products and Services, was modified. §1667.3 Amalgam separator system requirements stipulate that the applicable dental practices are required to have their separators installed and operational, not later than 12/31/04 for existing practices. Maine was one of the first States in the country to mandate amalgam legislation. The original information from dental facilities regarding the use and maintenance of Dental Amalgam Separator Units was tracked by ME DEP.

Pharmaceutical Take-Back Program – Since 2011 Maine has implemented a drug take-back program. DEP's involvement in the State workgroup initially, was to address both the flushing of drugs into sewer or septic systems, and the disposal of drugs into landfills. It is now managed by the Department of Health and Human Services, in coordination with the Maine DEA, and local & state police.

Household Hazardous Waste Collection Days (HHW) – HHW collection days are sponsored once a year in most of the substantial pretreatment communities resulting in less waste being disposed into the sewer system.

Critical Findings

There were none noted.

4. Stormwater

Background

The Clean Water Act requires stormwater discharges from certain municipal separate storm sewer systems (MS4s), industrial activities, and construction sites to be authorized by an NPDES Permit. Generally, the EPA and NPDES-authorized states issue individual permits for medium and large municipalities and general permits for small MS4s, industrial activities, and construction activities. ME DEP issues its stormwater general permits pursuant to the Department's federally-delegated NPDES program.

As part of this PQR, EPA reviewed the following three general permits, which are associated with the regulation of stormwater discharges and administered by ME DEP:

- General Permit for stormwater discharges from Small Municipal Separate Storm Sewer Systems (2013); NPDES # MER040000
- Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (2016); NPDES # MER050000
- General Permit for Stormwater Discharges Associated with Construction Activity (2006); NPDES # MER01000

Findings are presented separately for the municipal, industrial and construction stormwater permits.

Stormwater Discharges from Municipal Separate Storm Sewer Systems

Background

The Maine Small MS4 General Permit that was reviewed was issued in 2013. The reviewed permit was the third iteration of the MS4 General Permit. The DEP issued their first general permit in 2003 and re-issued in 2008 and 2013. The DEP has formed a stake holder group as they begin preparation for reissuance of the 2013 permit.

Program Strengths

ME DEP has timely reissued this permit. The general permit also addresses state and federal municipalities and transportation agencies such as Maine Department of Transportation and Maine Turnpike Authority. The program includes a focus on Urban Impaired Stream watersheds. It also includes language which states that the permit does not authorize discharges that causes or contribute to an impairment or a discharge that is not consistent with an approved TMDL. Stormwater Management Programs (SWMPs) must be submitted to DEP for review.

Critical Findings

- Reissued permit must be consistent with revised stormwater regulations at 40 CFR §§ 122.33, 122.34 and 122.35. All permit terms in the reissued permit must be expressed in clear, specific, and measurable terms.
- The reissued permit should be more prescriptive regarding illicit discharge detection and elimination including schedules and milestones.
- Clarification regarding a permittee's ability to rely on the state's construction general permit or the Chapter 500 laws for meeting the requirements of 40 CFR 122.34(b)(4) must be included in the reissued permit. DEP must document how these referenced programs adequately comply with the requirements of 40 CFR 122.34(b)(4).
- Post construction performance standard should be included in the reissued permit. Refer to EPA's Compendium of Permitting Approaches (EPA 830-S-16-002, Nov 2016) for examples.
- Include specific provisions for discharges to impaired waters and waters with approved TMDLs.

Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity

Background

Many provisions of the Maine Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity are nearly identical to EPA's 2015 MSGP. The Maine MSGP is available to discharges associated with industrial activity as defined at 40 CFR 122.26(b)(14). Maine's MSGP became effective on December 7, 2016. EPA reviewed the draft of this permit.

Program Strengths

The permit does not authorize discharges associated with industrial activity to impaired waters unless the DEP determines that the discharge will not cause or contribute to "...the failure of the waterbody to meet the standards of classification." The permit also includes prescriptive narrative effluent limitations which include prohibitions to discharges which contain visible sheen, materials in concentrations that are hazardous or toxic, or lower the classification of the waterbody. The permit also includes requirements to address impaired waters and waters with approved TMDLs.

Critical Findings

The permit does not contain benchmark monitoring for several sectors. While this is DEP's decision whether or not to include benchmark monitoring, it is important for DEP to ensure that there are adequate and objective means to assess the adequacy of a facility's stormwater pollution prevention plan.

General Permit for Stormwater Discharges from Construction Activity

Background

The permit that was reviewed was issued July 21, 2006 and expired on January 20, 2008. This permit has been administratively continued. This permit was issued prior to the promulgation of the Construction and Development Point Source Category (the C & D Rule). The rule became effective on February 1, 2010. It is unclear whether the state has adopted the C & D effluent limitation guidelines into state law, but the current permit does contain many requirements that are consistent with the rule.

Program Strengths

The permit does not authorize discharges that violate water quality standards or are not consistent with an approved TMDL. The permit does a good job of incorporating many parts of the C&D rule.

Critical Findings

The current permit is administratively continued and needs to be reissued. Although the permit does contain some requirements of the C&D Rule, the reissued permit must contain all requirements of the C & D Rule. The following aspects of the rule appear to be missing:

- 40 CFR 450.21(f) – Surface outlets – When discharges from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible.
- 40 CFR 450.21(d) – Pollution prevention measures – requirement for wash waters be treated in sediment basin or alternative control, minimize exposure of materials, and minimize the discharge of pollutants from spills and leaks and implementation of chemical spill and leak prevention and response procedures.
- 40 CFR 450.21(e)(1-4) – Prohibitions of specific discharges such as, but not limited to, washout of concrete, washout and clean out of stucco, paint, release oils, curing compounds, other construction materials, fuels, and soaps or solvents.
- The permit should include design, installation and maintenance requirements for BMPs.
- The permit should include anti-degradation provisions for discharges to Tier 2 or Tier 3 waters.

IV. REGIONAL TOPIC AREA FINDINGS

A. *Mixing Zones*

Background

NPDES regulations at 40 CFR § 122.44(d)(1)(ii) requires the permitting authority to consider, where appropriate, the dilution of the effluent in the receiving water when determining whether a discharge causes, has the reasonable potential to cause or contributes to an instream excursion above water quality criterion. This is typically accomplished through the use of a dilution allowance or a mixing zone. A dilution allowance is typically applied in flowing waters where rapid and complete mixing occurs and a mixing zone is typically applied in any waterbody type in which incomplete mixing occurs (*Water Quality Standards Handbook*, Chapter 5: General Policies, Section 5.1 [EPA 820-B-14-004]). Federal Regulations at 40 CFR § 131.13 provide for the inclusion of mixing zone policies in state water quality standards. A mixing zone is a limited area or volume of water where initial dilution of a discharge takes place and where certain numeric water quality criteria may be exceeded. The narrative and/or numeric criteria for the waterbody are still the applicable criteria within the boundaries of the mixing zone; however, a mixing zone simply authorizes an applicable criterion to be exceeded within a defined area of the waterbody while still protecting the designated use of the waterbody as a whole. State regulations at 38 M.R.S.A. § 451 authorize ME DEP to establish “reasonable mixing zones” for waste discharges⁵. Requirements for the calculation of dilution factors for purposes of deriving water quality based effluent limitations for freshwater discharges, for estuaries where tidal flow is dominant and for marine waters, are set forth in Department Rule Chapter 530.4⁶.

The focus of the mixing zone review is to verify that permits and fact sheets are consistent with the applicable regulations and that the establishment of mixing zones are documented in the administrative records.

As part of the 2016 PQR, EPA reviewed seven individual permits with special focus on the establishment of mixing zones in order to verify overall consistency with NPDES Regulations, including whether permit requirements are protective of and consistent with State WQS and whether an adequate basis or rationale for permit decisions are documented. The following permits were included in the review:

NPDES Permit No.	Permittee	Facility Type	Receiving Water (Fresh Water/Marine)
ME0001911	TEX-TEC INDUSTRIES, LLC	Non-POTW - Minor	Fresh Water
ME0002160	BUCKSPORT MILL LLC	Non-POTW-Major	Marine
ME0021521	S.D. WARREN	Non-POTW-Major	Fresh Water
ME0022320	PENOBSCOT ENERGY RECOVERY COMPANY	Non-POTW-Minor	Marine
ME0023957	ISF TRADING COMPANY	Non-POTW-Minor	Marine

⁵ State regulations at 38 M.R.S.A. § 451 do not provide criteria for determining whether a mixing zone is, in fact, reasonable. Therefore, during the PQR, EPA relied upon national guidance for the development of mixing zone policies (*Water Quality Standards Handbook*, Chapter 5: General Policies, Section 5.1 [EPA 820-B-14-004]) to evaluate consistency with applicable regulations.

ME0037176	STEPHEN E. GRAY LODGES & INDUSTRIES	Non-POTW-Minor	Marine
ME0037397	ACADIA AQUA FARMS LLC	Non-POTW-Minor	Marine

Program Strengths

Although fact sheets and administrative records varied with respect to the level of detail provided pertaining to evaluations of the mixing conditions at the point of discharge (i.e., whether rapid and complete mixing occurs or whether incomplete mixing, which would necessitate the application of mixing zones, occurs), the administrative records for five of the seven permits that were included in the review indicate that the state had assessed whether rapid and complete mixing occurs (S.D. Warren, Stephen E. Gray Lodges & Industries, Penobscot Energy Recovery Company, Acadia Aqua Farms LLC and ISF Trading Company). Though details were not explicitly provided, the fact sheet for the permit that was issued to Bucksport Mill, LLC references a “tidal velocity model”, suggesting that an evaluation of whether rapid and complete mixing occurs was, in fact, performed. The site-specific mixing zone that was used in the development of two of the reviewed permits (I.S.F. Trading Company and Bucksport Mill, LLC) was found to be “reasonable”.

Critical Findings

The concerns noted by EPA during its review of four of the five permits that were issued to facilities which discharge to marine waters (Penobscot Energy Recovery Company, Acadia Aqua Farms, LLC, Stephen E. Gray Lodges & Industry and Bucksport Mill, LLC) primarily relate to insufficient documentation in fact sheets and administrative records which would support determinations of whether rapid and complete mixing occurs at the point of discharge and, if incomplete mixing occurs, whether mixing zones are reasonable. Specifically, the administrative records for these four permits did not contain model results and/or spatial descriptions of the extent of the mixing zones. Additionally, the administrative record for one of these permits (Bucksport Mill permit) also lacked documentation of the dilution factor that was calculated for the initial zone of dilution. The dilution factor used in the development of the limits in one of these permits (Stephen E. Gray Lodges & Industry) was based on best professional judgment, rather than a model, as required by Chapter 530.4.

EPA found deficiencies in the administrative record of one of the two permits that were issued to facilities that discharge to freshwaters (S.D. Warren) that were included in the review. No documentation was provided in the fact sheet to support the Department’s determination that the discharge achieves complete and rapid mixing with the receiving water. Further, a study that was conducted in 1995 indicates that complete mixing of the discharge with the receiving water occurs 5.5 miles downstream from the outfall, which suggests that rapid and complete mixing does not occur.

EPA recommends that all data, models and analyses used in making determinations as to whether rapid and complete mixing occurs at the point of discharge and, if incomplete mixing occurs, whether mixing zones are reasonable, be included in Fact sheets. Additionally, fact sheets should describe how mixing zones are reasonable and will be protective of designated

uses and are otherwise consistent with Maine Statute (Title 38 § 451) and Department Regulation (Chapter 530).

B. Bacteria

Background

CWA Section 301(b)(1)(C) requires that permits include any effluent limitations necessary to meet water quality standards. Federal Regulations at 40 CFR § 122.44(d) require NPDES permits to include limitations and conditions in addition to or more stringent than promulgated effluent limitations guidelines or standards under sections 301, 304, 306, 307, 318 and 405 of CWA necessary to achieve water quality standards established under Section 303 of CWA, including state narrative criteria. Water quality criteria for bacteria are set forth in the State of Maine’s Standards for Classification of Fresh Surface Waters at Title 38 § 465, and in the Standards for Classification of Estuarine and Marine Waters at Title 38 § 465-B.

As part of the 2016 PQR, EPA reviewed six municipal (POTW) permits, three of which were issued to facilities which discharge to marine waters and three of which were issued to facilities that discharge to fresh water bodies, with special focus on the bacteria requirements in order to verify overall consistency with NPDES Regulations, including whether permit requirements are protective of and consistent with State WQS and whether an adequate basis or rationale for permit decisions are documented. The following permits were included in the review:

NPDES Permit No.	Permittee	Facility Type	Receiving Water (Fresh Water/Marine)
ME0100757	TOWN OF WISCASSET	POTW - Minor	Marine
ME0101214	TOWN OF BAR HARBOR	POTW - Major	Marine
ME0101184	TOWN OF KENNEBUNKPORT	POTW - Major	Marine
ME0100854	KENNEBEC SANITARY TREATMENT DISTRICT	POTW - Major	Fresh Water
ME0100391	MECHANIC FALLS SANITARY DISTRICT	POTW - Major	Fresh Water
ME0101478	LEWISTON AUBURN WATER POLLUTION CONTROL AUTHORITY	POTW - Major	Fresh Water

Program Strengths

Each of the permits reviewed contain bacteria requirements, specifying the sample type (grab) and sampling frequency. The permits also specify that monthly average (chronic) limits are geometric mean limits, and that the results are to be reported as such.

Critical Findings

The concerns noted by EPA in its evaluation of the bacteria provisions in the reviewed permits were primarily related to inconsistencies with state water quality standards and insufficient documentation of the basis for permit requirements. Three of the reviewed permits (Town of Bar Harbor POTW, Town of Kennebunkport POTW and Town of Wiscasset POTW) were issued to facilities that discharge to marine waters which have been classified by the State of Maine as

Class SB waters. See *Classification of Estuarine and Marine Waters*, 38 M.R.S. § 469. The bacteria limitations in each of these permits are inconsistent with the State water quality standards for such waters. Specifically, seasonal enterococci limits, which would provide for the protection of the recreational designated use(s) of the receiving waters, were not included in any of the permits, and two out of the three permits that were reviewed (Bar Harbor POTW and Wiscasset POTW) do not contain year-round fecal coliform limits consistent with the criteria established in the National Shellfish Sanitation Program (NSSP), which are incorporated by reference into the state water quality standards at 38 § 465-B.2.B , to ensure protection of the shellfishing designated use of the receiving waters.

Three of the reviewed permits were issued to facilities which discharge to fresh waters (Kennebec Sanitary Treatment District POTW, Mechanic Falls POTW and Lewiston-Auburn POTW). Two of these facilities (Kennebec Sanitary Treatment District POTW and Mechanic Falls POTW) discharge to receiving waters which have been classified by the state of Maine as Class B waters, and one facility (Lewiston-Auburn POTW) discharges to a receiving water that has been classified by the State as a Class C water. See *Classification of Major River Basins*, 38 M.R.S.A. § 467. All three of these permits included average monthly limitations for *E. coli* which are consistent with the criteria set forth in the State water quality standards. The Fact Sheets for two of the permits (Lewiston-Auburn POTW and Mechanic Falls Sanitary District POTW) indicate that the daily maximum limits will ensure attainment of the instantaneous maximum *E. coli* criterion established in the State water quality standards through the available dilution of the effluent with the receiving water; however, the Fact Sheets do not contain any documentation which would support these conclusions. Similarly, the Fact Sheet for the Kennebec Sanitary Treatment District POTW does not demonstrate how the daily maximum *E. coli* limitation in the permit will result in the achievement of the instantaneous maximum criterion in the State Water Quality Standards.

Monitoring frequencies in re-issued permits are established in accordance with the *Interim Guidance for Performance-Based Reduction of NPDES Permit Monitoring Frequencies* (USEPA April 1996 [EPA 833-B-96-00]), supplemented by State guidance entitled *Performance-Based Reduction of Monitoring Frequencies – Modification of EPA Guidance Released April 1996* (ME DEP May 22, 2014). The bacteria monitoring frequencies in all but one of the reviewed permits (Wiscasset POTW) had been reduced from the prior permits. Although the Fact Sheets for all of these permits state that these reductions are consistent with the *Interim Guidance for Performance-Based Reduction of NPDES Permit Monitoring Frequencies* (USEPA April 1996 [EPA 833-B-96-00]), none of the permits contained language stipulating that “*should the facility experience operational problems resulting in significant non-compliance, or subsequent enforcement, then the Department reserves the right to reopen the permit and revoke the testing reductions that have been granted*”, as required by the *Performance-Based Reduction of Monitoring Frequencies* (ME DEP May 2014). Additionally, the records for two of the reviewed permits in which bacteria monitoring frequencies had been reduced (Bar Harbor POTW and the Kennebunkport POTW, both of which discharge to Class SB waters with shellfishing designated uses) lacked documentation indicating that the Department of Marine Resources was consulted prior to granting these reductions, as required by Maine’s *Performance-Based Reduction of*

Monitoring Frequencies – Modification of EPA Guidance Released April 1996 (ME DEP May 22, 2014) when the discharge is to a receiving water that is designated for shellfish harvesting. The frequency of bacteria testing required in the permits that were reviewed range from a minimum of twice per month to a maximum of twice per week. EPA notes that the frequency of required bacteria testing is concerning, as it is unclear how such minimal testing would be sufficient to ensure adequate protection of the receiving waters, particularly the recreation and shellfishing designated uses.

C. Whole Effluent Toxicity/Reasonable Potential Determination

Background

Section 101(a)(3) of the CWA prohibits the discharge of toxic pollutants in toxic amounts. CWA Section 301(b)(1)(C) requires that permits include any effluent limitations necessary to meet water quality standards (WQS). Sections 402(a)(2) and 308 (a) of the CWA authorize EPA to establish toxicity testing requirements and toxicity-based permit limits in NPDES permits. Section 308 specifically states that biological monitoring methods may be required when needed to carry out the objectives of the Act. Under certain narrative State WQS and Sections 301, 303, and 402 of the CWA, EPA and the States may establish toxicity-based limits to implement the narrative of no toxics in toxic amounts criterion.

Federal Regulations at 40 CFR § 122.44(d)(1)(iv) require NPDES permits to include whole effluent toxicity (WET) limitations where reasonable potential (RP) has been demonstrated. The inclusion of limitations in NPDES permits for any pollutant discharged at levels which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality (i.e., when reasonable potential (RP) has been demonstrated).

State Statute 38 M.R.S.A. 417 (Certain deposits and discharges prohibited) requires the regulation of discharges of toxic substances to inland and tidal waters. Maine's Surface Water Toxics Control Program, set forth at 06-096 CMR 530 (effective March 21, 2012), establishes effluent monitoring requirements and procedures to establish safe levels for the discharge of toxic pollutants, including WET, such that existing and designated uses of surface waters are maintained and protected and that the narrative and numeric water quality criteria, set forth at 06-096 CMR 584 (Surface Water Quality Criteria for Toxics), are met.

As part of the 2016 PQR, EPA reviewed two industrial and two municipal (POTW) permits. Three of the four permits reviewed were issued to facilities that discharge to fresh water bodies and one of the permits was issued to a facility which discharges to marine waters. The permits were reviewed to determine if the permit requirements were protective of, and consistent with State WQS, compliant with EPA whole effluent toxicity (WET) test methods established at 40 CFR Part 136, whether and how reasonable potential (RP) was determined, and whether an adequate basis or rationale for permit decisions were documented in the permit's fact sheet and administrative record.

The following four permits were included in the review:

NPDES Permit No.	Permittee	Facility Type	Receiving Water (Fresh Water/Marine)
ME0100064	BOOTHBAY HARBOR SEWER DISTRICT	POTW - Major	Marine
ME0100625	TOWN OF SKOWHEGAN	POTW - Major	Fresh Water
ME0000159	TWIN RIVERS PAPER COMPANY LLC	NON-POTW - Major	Fresh Water
ME0002160	BUCKSPORT MILL LLC	NON-POTW - Major	Fresh Water

Program Strengths

Maine implements the statistical approach described in EPA's *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001, March 1991) (the "TSD") when making RP determinations for WET. If RP is demonstrated, appropriate WET limits, including those for chronic sublethal endpoints, are included in permits, in accordance with State regulations (06-096 CMR 530, Surface Water Toxics Control Program). Specific WET testing requirements are established in accordance with criteria set forth in Department Rule Chapter 530. Three of the four permits reviewed (Boothbay Harbor Sewer District, Twin Rivers Paper Company, LLC, and the Town of Skowhegan) contained WET limits as well as monitoring requirements for both acute and chronic WET tests (including sublethal endpoints) which were established in accordance with Department Rule 06-096 CMR 530. The permit that was issued to Bucksport Mill LLC did not contain any WET limitations or monitoring requirements based on a determination by that state that there was no impact to aquatic life in the receiving water into which the discharge occurs.

The use of EPA's 40 CFR Part 136-approved WET species was specified in each of the permits that contained acute WET testing requirements and in two of the reviewed permits that contained chronic WET testing requirements. However, two of the permits (Twin Rivers Paper Company LLC and the Town of Skowhegan) required the use of a non-promulgated chronic fish test species (see below).

Critical Findings

EPA's review of these four permits with respect to the state's NPDES WET implementation identified the following primary concerns: monitoring frequency, insufficient permit documentation for some of the permits and how EPA's regulations that pertain to reasonable potential were referenced in Maine's law and permit language, as described below.

Two of the reviewed permits (Boothbay Harbor and Town of Skowhegan) require WET testing to be conducted once per year. This frequency of required WET testing concerning, as it is unclear how such minimal testing would provide data that is representative of the discharge, especially where surveillance level tested has been waived. It is recommended that the rationale for determining minimum monitoring frequencies be documented in administrative records.

The administrative records for three of reviewed permits generally lacked sufficient documentation supporting which would support the reasonable potential determinations and permit requirements described in the fact sheets. It was unclear from the fact sheet which accompanied the permit that was issued to the Boothbay Harbor Sewer District permit as to which statistical method was applied to the analysis of WET test results. The basis for the WET RP determination as well as the data that was evaluated was not provided in the fact sheet for the permit that was issued to the Town of Skowhegan (i.e., the finding that the discharge from this facility does not present reasonable potential to cause or contribute to an excursion above state water quality standards appears to be based on the result of a single screening level acute and chronic test (September 2012)). The fact sheet for the Bucksport Mill, LLC permit lacked documentation of any effluent characterization which would support the determination there is no reasonable potential for WET, and that neither WET limits nor monitoring requirements were necessary. All information relative to reasonable potential determinations, including the methodology applied, data and calculations and/or analyses that were performed, should be well documented and clearly presented in fact sheets and/or the administrative record.

The fact sheets for three of the reviewed permits (Boothbay Harbor Sewer District, Twin Rivers Paper Company LLC and the Town of Skowhegan) lacked sufficient documentation of the establishment of certain WET test requirements. The fact sheet for the Boothbay Harbor Sewer District lacked documentation concerning Maine's approval of alternate methods for "sampling" for WET tests with no mention of EPA's approval of the alternate methods authorized by Maine. The Twin Rivers Paper Company LLC and the Town of Skowhegan permits used an un-promulgated WET species (freshwater brook trout, *Salvelinus fontinalis*) in their chronic freshwater testing without an EPA alternative test procedure approval in place. When using the chronic brook trout test, Maine conducts these tests according to EPA WET test methodology but for a different freshwater fish species, fathead minnow (*Pimephales promelas*). The justification for authorizing any deviation from approved test procedures and protocols should be provided in fact sheets.

D. *Toxics*

Background

CWA Section 101(a)(3) sets forth the national policy of prohibiting the "discharge of toxic pollutants in toxic amounts." Under CWA Sections 301(b)(1)(C) and Section 402, all NPDES permits must comply with any more stringent limitations necessary to meet applicable WQS, whether numeric or narrative. Federal Regulations at 40 CFR § 122.44 cover the National Surface Water Toxics Control Program and are linked to the requirements to achieve WQS and specifically address the control of pollutants both with and without numeric criteria. Federal regulations at 40 CFR § 122.44(d)(1) require NPDES permits to include limitations where reasonable potential has been demonstrated.

State Statute 38 M.R.S.A. 417 (Certain deposits and discharges prohibited) requires the regulation of discharges of toxic substances to inland and tidal waters. Maine's Surface Water Toxics Control Program, set forth at 06-096 CMR 530 (effective March 21, 2012), establishes

effluent monitoring requirements and procedures to establish safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected and that the narrative and numeric water quality criteria, set forth at 06-096 CMR 584 (Surface Water Quality Criteria for Toxics), are met. In addition, Department Rule Chapter 519, Interim Effluent Limitations and Controls for the Discharge of Mercury, establishes controls on the discharge of mercury to the surface waters of the State through interim effluent limits and implementation of pollution prevention plans (06-096 CMR 519).

EPA reviewed two industrial and two municipal (POTW) permits as part of the 2016 PQR with a focus on permit conditions pertaining to toxics and how procedures for determining reasonable potential are applied in permits. Specifically, permits were evaluated to determine whether permit requirements were protective of and consistent with State WQS, whether and how reasonable potential was determined, and whether an adequate basis or rationale for permit decisions were documented in the permit’s fact sheet and administrative record.

The following four permits were included in the review:

NPDES Permit No.	Permittee	Facility Type	Receiving Water (Fresh Water/Marine)
ME0100064	BOOTHBAY HARBOR SEWER DISTRICT	POTW - Major	Marine
ME0100625	TOWN OF SKOWHEGAN	POTW - Major	Fresh Water
ME0000159	TWIN RIVERS PAPER COMPANY LLC	NON-POTW - Major	Fresh Water
ME0002160	BUCKSPORT MILL LLC	NON-POTW - Major	Fresh Water

Program Strengths

Maine implements the statistical approach described in EPA’s *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001. March 1991) (the “TSD”) when making RP determinations for toxics. If RP is demonstrated, appropriate limits are included in permits in accordance with State regulations (06-096 CMR 530, *Surface Water Toxics Control Program*). Specific testing requirements are established in accordance with criteria set forth in Department Rule Chapter 530. Three of the four permits reviewed (Boothbay Harbor Sewer District, Twin Rivers Paper Company, LLC. And the Town of Skowhegan) contained analytical chemistry and priority pollutant monitoring requirements which were established in accordance with Department Rule 06-096 CMR 530 and also included mercury limitations which were consistent with the limitations set forth in Department Rule Chapter 519, *Interim Effluent Limitations and Controls for the Discharge of Mercury*.

The fact sheet for the permit that was issued to Bucksport Mill LLC included a description of how the methodology established in EPA’s TSD was used in conducting the reasonable potential analysis for metals during the development of the permit, including comparing the highest instream concentrations against EPA’s recommended RP factor and subsequently applying the

dilution factor to the applicable water quality criteria which resulted in a determination that the discharge did not present reasonable potential under either acute or chronic conditions.

Critical Findings

Language found in Maine's laws (38 M.S.R.A. Section 414-A and Section 420 and CMR 530(2)(A) and (3)(E)) as well as in the reviewed permits regarding reasonable potential determinations were inconsistent with EPA's regulations. Specifically, language found in the aforementioned state laws and in the permits that were reviewed reference two parts of EPA's NPDES RP regulations (40 CFR Part 122.44(d)(1)) of *cause and contribute* but not the "*reasonable potential to cause*." Although a Maine DEP representative did clarify that this was an unintended omission and that DEP does in fact assess RP using all three parts of EPA's NPDES RP regulations, which was reflected in fact sheets of the permits that were reviewed, it is recommended that the language pertaining to reasonable potential that is referenced in both state law and in permits be consistent with the language contained in the federal regulations.

The basis for the establishment of permit requirements and conditions relevant to toxic pollutants was not adequately documented in the administrative records of three of the permits that were reviewed (Twin Rivers Paper Company LLC, Town of Skowhegan and Boothbay Harbor). The fact sheet for the permit that was issued to the Twin Rivers Paper Company LLC indicates that a statistical analysis to evaluate RP was completed on 7/8/14; however, neither the data nor the analysis was provided. The fact sheet for the permit that was issued to the Town of Skowhegan's permit also did not include the statistical evaluation of effluent data which would support the determination that RP was not demonstrated under either acute or chronic conditions. The fact sheet for the Boothbay Harbor permit references a statistical evaluation of chemical-specific effluent data that resulted in a "no reasonable potential" determination. Neither the data nor the statistical evaluation of the data that was referenced in the fact sheet was provided. It is recommended that all data and analyses relied upon in making reasonable potential determination as well as any applicable documentation which supports a reasonable potential determination, permit limit and/or condition be included in the fact sheets/administrative records.

V. ACTION ITEMS

This section provides a summary of the main findings of the review and provides proposed action items to improve Maine's NPDES permit programs. This list of proposed action items will serve as the basis for ongoing discussions between U.S. EPA Region 1 and ME DEP as well as between Region 1 and EPA Headquarters. These discussions should focus on eliminating program deficiencies to improve performance by enabling good quality, defensible permits issued in a timely fashion.

The proposed action items are divided into three categories to identify the priority that should be placed on each Item and facilitate discussions between Regions and states.

- **Critical Findings** (Category One) - Most Significant: Proposed action items will address a current deficiency or noncompliance with respect to a federal regulation.

- **Recommended Actions** (Category Two) - Recommended: Proposed action items will address a current deficiency with respect to EPA guidance or policy.
- **Suggested Practices** (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 critical findings and recommended actions proposed should be used to augment the existing list of "follow up actions" currently established as an indicator performance measure and tracked under EPA's Strategic Plan Water Quality Goals or may serve as a roadmap for modifications to the Region's program management.

A. Basic Facility Information and Permit Application

The core permits reviewed specifically authorize the discharge subject to specified permit conditions and in combination with the associated fact sheets provide basic information regarding the facility, the receiving water, and the permitting action. Maine DEP's POTW permit application does not appear to request the same data as federal EPA forms. Proposed action items to help Maine DEP strengthen its NPDES permit program include the following:

- Ensure that permits identify the physical location (i.e., latitude and longitude) of outfalls. (Category One).
- Ensure that state permit application forms contain data collection requirements as stringent as federal application forms including required effluent testing results, latitude and longitude. (Category One).
- Ensure that administrative records contain documentation of waivers of the requirements in EPA application Form 2A due to having access to previously submitted information, which is substantially identical to the information required by Form 2A. (Category One).

B. Technology-based Effluent Limitations

The limits in the core POTW permits reviewed are consistent with secondary treatment requirements. Similarly, non-POTW permits appear to implement required TBELs. Proposed action items to help Maine DEP strengthen its NPDES permit program include the following:

- For non-POTW permits, ensure that fact sheets adequately identify which subcategories and standards apply for facilities subject to ELGs and indicate the basis for categorization. (Category Two).
- Also see V. G., Documentation, below.

C. Water Quality-Based Effluent Limitations

Maine DEP employs a watershed-based approach to calculating wasteload allocations. Based on available documentation, the core permits reviewed include limits for discharges of pollutants identified as having caused, had the reasonable potential to cause, or contributed to an excursion of the

state's water quality criteria. Proposed action items to help Maine DEP strengthen its NPDES permit program include the following:

- Ensure that reasonable potential analyses are conducted for the purpose of determining whether a water quality-based effluent is needed, not for evaluating whether an existing water quality based effluent limitation remains protective of water quality standards (Category Two).
- Also see V. G., Documentation, below.

D. Monitoring and Reporting

The core permits reviewed require monitoring for all of the parameters subject to permit limits and such monitoring requirements appear sufficient to assess compliance with effluent limitations. Proposed action items to help Maine DEP strengthen its NPDES permit program include the following:

- Monitoring/sampling locations should be specified in permits to ensure samples are representative and that monitoring results can be used to assess compliance. (Category Two).
- Ensure that all permits require use of sufficiently sensitive 40 CFR Part 136 method capable of quantifying pollutants at concentrations equal to or less than the limits. Existing permit language does not appear to reflect EPA's Sufficiently Sensitive Methods rule. (Category Two).
- Recommend more explicitly requiring monitoring of influent for BOD and TSS. (Category Three).

E. Standard and Special Conditions

The permits reviewed include standard conditions that are based on Maine DEP regulations and in general, these standard conditions are consistent with federal standard conditions. MEPDES permits also include a broad range of what are deemed special permit conditions that address both discharge limits (and associated monitoring and reporting) and specific state program requirements and facility characteristics. Proposed action items to help Maine DEP strengthen its NPDES permit program include the following:

- Ensure that standard conditions clearly identify applicable civil and criminal penalties. (Category Two).
- Update relevant standard conditions consistent with the schedule specified in 40 CFR 123.62(e) to be consistent with EPA Electronic Reporting Rule. (Category Two).

F. Administrative Process (including public notice)

Maine regulations provide that DEP notify stakeholders when an application has been submitted. These notices were identified in the permit files for some permits, but not all. Comments on a draft permit can be submitted until the permit is finalized and generally fact

sheets indicated if comments were received and included responses to significant comments. Proposed action items to help Maine DEP strengthen its NPDES permit program include the following:

- Over the next several years, EPA will work with Maine on revising certain parts of Maine's state permitting regulations. This will provide the opportunity to ensure that Maine's regulations provide for adequate public notice of DEP's draft major permits, as required by 40 CFR 124.10(a). (Category Two).
- Maintain the public notice for each MEPDES permit in the respective permit file to document compliance with public participation requirements. (Category Two).
- Maintain comments received on each draft permit in respective the permit file or indicate where such comments are maintained. (Category Two).

G. Documentation (including fact sheet)

The fact sheets for the core permits reviewed include an extensive discussion of the basis for facility-specific requirements. The permit files include appropriate support documents including draft and final permits and fact sheets, permit applications, correspondence, DMR and effluent data, water quality analyses, public notice letters and other documents. Proposed action items to help Maine DEP strengthen its NPDES permit program include the following:

- Ensure fact sheets discuss anti-backsliding when effluent limitations are less stringent than those in the previous permit, or not carried forward from the previous permit, including a discussion of consistency with applicable anti-backsliding exceptions. (Category One).
- Ensure that justification for the selection of a technology-based permit limit over a water quality based limit, which appears to be more stringent and consistent with water quality standards, is provided in fact sheets. (Category One).
- Ensure fact sheets discuss antidegradation when new or increased discharges are permitted. Discussion should address applicability of antidegradation and describe how antidegradation requirements have been met. (Category One).
- Ensure that correct, completed permit application forms are maintained in permit files. (Category Two).
- Ensure that the derivation of all TBELs is discussed in the pertinent fact sheet. (Category Two).
- Include in the permit fact sheet or file a summary of data evaluated in the reasonable potential analysis and discuss results of the reasonable potential analysis (DETOX report summary). (Category Two).
- When applicable, include or reference in the permit file documentation any mixing zone analysis. (Category Two).

- Where an ELG is applicable, fact sheets should provide a quantitative comparison of the technology-based limit derived from the ELG to the corresponding water-quality based limit, rather than merely a conclusory statement on the relative stringency. (Category Two).
- Recommend describing the receiving water designated use in the fact sheet rather than relying on classification codes. (Category Three).
- Recommend that all fact sheets indicate who commented on the relevant draft permit, even if comments are not deemed significant. (Category Three).
- Ensure that documentation of improvements in water quality is not a sufficient reason for invoking the anti-backsliding exception of “new information.” Improvements in water quality, with the reasons indicating no reasonable potential, should not be reason for removing an existing limit. Water quality improvements are expected by permit limits and will not be sustained if permit limits are then relaxed. (Category Two).
- Recommend that standard language regarding anti-degradation requirements be added to fact sheets. (Category Three)
- Recommend including in fact sheets a discussion of how water quality standards will be met when a limit based on an ELG is selected for inclusion in a permit over a WQBEL which would appear to be more stringent (Category Three).

H. National Topic Areas

Proposed actions items for core topic areas are provided below.

1. *Nutrients*

Proposed action items to help Maine strengthen its NPDES permit program include the following:

- Fact Sheets should include up to date reasonable potential analyses conducted using current receiving water and effluent data and, where appropriate, limitations and/or monitoring requirements should be included in permits when the currently available information indicates such requirements are necessary to prevent water quality impairments and/or to restore water quality. (Category One).
- Existing permit limits based on waste load allocations developed years earlier should be re-evaluated to determine whether such limits remain sufficient for ensuring adequate protection of the quality of the receiving water. (Category Two)
- Appropriate instream Gold Book target values should be applied to reasonable potential analyses and limit calculations for total phosphorus, or another sound technical basis,

should be used and documented for translating narrative nutrient criteria for reasonable potential analyses and limit calculations (Category two).

- ME DEP should ensure the ambient water quality and effect data is collected during the next permit term to enable a more robust reasonable potential determination in the next permit cycle. (Category Three).
- Monitoring requirements for total phosphorus should be included in permits in order to establish a robust data set for assessing treatment efficiency and for characterizing the effluent. (Category Three).

2. *Pesticides*

The Pesticides General Permit appears to be consistent with program requirements. No action items are proposed based on this PQR.

3. *Pretreatment*

The pretreatment permit requirements appear to be consistent with program requirements. No action items are proposed based on this PQR.

4. *Stormwater*

Action items are presented separately for municipal, industrial and construction stormwater permits. Proposed action items to help Maine strengthen its NPDES permit program are provided below.

Stormwater Discharges from Municipal Separate Storm Sewer Systems

- Reissued permit must be consistent with revised stormwater regulations at 40 CFR §§ 122.33, 122.34 and 122.35. (Category One).
- Clarification regarding a permittee's ability to rely on the state's construction general permit or the Chapter 500 laws for meeting the requirements of 40 CFR 122.34(b)(4) must be included in the reissued permit. DEP must document how these referenced programs adequately comply with the requirements of 40 CFR 122.34(b)(4). (Category One).
- All permit terms in the reissued permit must be expressed in clear, specific, and measureable terms. (Category One).
- The reissued permit should be more prescriptive regarding illicit discharge detection and elimination including schedules and milestones. (Category Two).
- Post construction performance standard should be included in the reissued permit. Refer to EPA's Compendium of Permitting Approaches (EPA 830-S-16-002, Nov 2016) for examples. (Category Two).

- Include specific provisions for discharges to impaired waters and waters with approved TMDLs. (Category Two).

Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity

- In the absence of including benchmark monitoring in the permit for several sectors, DEP should ensure that there are adequate and objective means to assess the adequacy of a facility's stormwater pollution prevention plan. (Category One).

General Permit for Stormwater Discharges from Construction Activity

- Reissue the General Permit for Stormwater Discharges from Construction Activities, which expired in 2008. (Category One).
- All of the requirements of the Construction and Development (C&D) rule, which became effective on February 1, 2010, must be included in the reissued permit. (Category One)

I. Regional Topic Areas

Proposed action items for special focus areas are provided below.

1. *Mixing Zones*

Proposed action items to help MEDEP strengthen its NPDES permit program include the following:

- All data, models and calculations used to derive mixing zones should be provided in Fact Sheets along with an explanation of whether the mixing zone is reasonable and protective of designated uses and are otherwise consistent with state statute (Title 38 § 451) and Department regulations (Chapter 530). (Category Two).

2.. *Bacteria*

Proposed action items to help Maine strengthen its NPDES permit program include the following:

- Permits should include limits for all bacterial indicator organisms for which criteria have been established for the protection of all designated uses assigned to the class of the receiving water into which the discharge(s) occur. (Category One).
- Limits should more closely reflect the water quality standards for recreational and shellfishing designed uses. (Category One).

- Fact Sheets should clearly articulate how limits are consistent with, and will ensure attainment of, applicable criteria. (Category Two).
- Fact Sheets and/or administrative records should include an explanation of how reduced monitoring frequencies are sufficient for ensuring adequate protection of water quality standards. (Category Two).

3. *Whole Effluent Toxicity (WET)*

Proposed action items to help Maine strengthen its NPDES permit program include the following:

- Permits should specify the use of only EPA-promulgated WET test species (40 CFR Part 136). The state should seek EPA R1's approval to use an alternate test species when a determination has been made that use of test species with a higher degree of sensitivity is appropriate. Documentation of EPA's approval of the use of an alternate test species should be included in the permit's fact sheet and administrative record. Any references to the use of an alternative test species or other deviations from EPA's WET test methods sampling protocols without having received approval by EPA should not be included in permits. (Category One).
- All relevant (and in some cases more) documentation should be included in fact sheets or administrative records in order to substantiate permit decisions such as monitoring frequency reductions, reasonable potential determinations, and choice of statistical analyses selected (Category One).
- Recommend revising the regulatory language pertaining to reasonable potential that is set forth in state law (38 M.S.R.A. Section 414-A, Section 420 and CMR 530(2)) to include "reasonable potential to cause" in addition to "cause or contribute" so that it is consistent with EPA's regulations at 40 CFR Part 122.44(d)(1). (Category Two).
- Recommend revising the language in future permits pertaining to reasonable potential to include "reasonable potential to cause" in addition to "cause and contribute" so that it is consistent with EPA's regulations at 40 CFR Part 122.44(d)(1). (Category Two).
- Recommend including in fact sheets the basis for how minimal monitoring frequencies, especially where surveillance monitoring is waived, will yield representative data that will allow for an adequate evaluation of the toxic effects of the discharge. (Category Three).

4. *Toxics*

Proposed action items to help Maine strengthen its NPDES permit program include the following:

- Recommend revising the regulatory language pertaining to reasonable potential that is set forth in state law (38 M.S.R.A. Section 414-A, Section 420 and CMR 530(2)) to include "reasonable potential to cause" in addition to "cause or contribute" so that it is consistent with EPA's regulations at 40 CFR Part 122.44(d)(1). (Category Two).

- Recommend revising the language in future permits pertaining to reasonable potential to include “reasonable potential to cause” in addition to “cause and contribute” so that it is consistent with EPA’s regulations at 40 CFR Part 122.44(d)(1). (Category Two).