United States
Environmental Protection Agency

Office of Water
Washington, DC

United States
Environmental Protection Agency

National Pollutant Discharge Elimination System (NPDES) Permit Quality Review (PQR) REPORT Companion

This guidance was developed by staff within the U.S. Environmental Protection Agency's (EPA's) Office of Wastewater Management and addresses development of wastewater discharge permits under the National Pollutant Discharge Elimination System (NPDES). NPDES permit development is governed by existing requirements of the Clean Water Act (CWA) and the EPA NPDES implementing regulations. CWA provisions and regulations contain legally binding requirements. This document does not substitute for those provisions or regulations. Recommendations in this guidance are not binding; the permitting authority may consider other approaches consistent with the CWA and EPA regulations. When EPA makes a permitting decision, it will make each decision on a case-by-case basis and will be guided by the applicable requirements of the CWA and implementing regulations, taking into account comments and information presented at that time by interested persons regarding the appropriateness of applying these recommendations to the situation. This guidance incorporates, and does not modify, existing EPA policy and guidance on developing NPDES permits.
EPA may change this guidance in the future.

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Contents

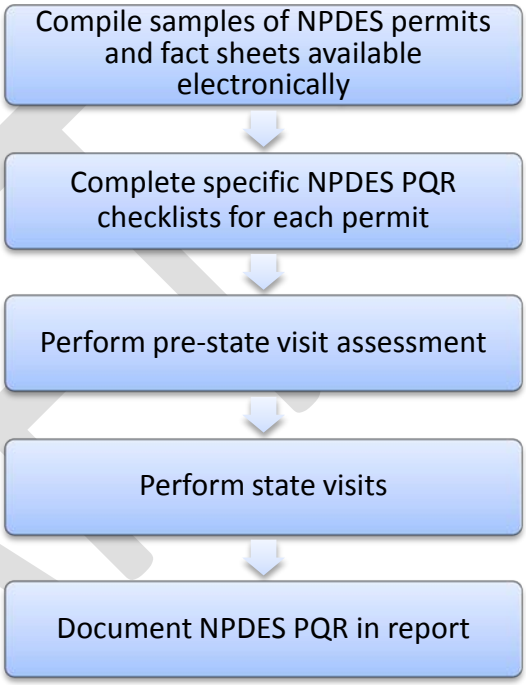
I. NPDES PQR BACKGROUND AND REPORT TEMPLATE

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, the United States Environmental Protection (EPA) promotes national consistency, identifies successes in implementation of the NPDES program as well as opportunities for improvement.

EPA has developed tools, such as the NPDES Permit Writers' Manual and Course, Central Tenets of Permitting, the NPDES PQR Checklist and the NPDES PQR Report Template, to promote permit quality and assist permitting authorities with evaluating state permitting programs. This document will serve as a companion for the NPDES PQR Report Template and is intended to help the NPDES PQR Report leaders from EPA Headquarters and Regions.

The NPDES PQR process includes compiling samples of NPDES permits and fact sheets (digital files), completing specific NPDES PQR checklists for each permit, performing NPDES PQR pre-state assessment, scheduling and performing state visits and file reviews, and documenting the NPDES PQR in the NPDES PQR Report (see PQR Standard Operating Procedures [PQR SOP] for additional detail).

Figure 1. NPDES PQR Process



A. Compile samples of NPDES permits and fact sheets available electronically

The first step to performing an NPDES PQR following notice and communication with the state is to request a mix of publicly-owned treatment works (POTWs) and industrial (non-POTW) permits from the state (see PQR SOP). Reviewers should request these documents be sent electronically by the state. Permit records should be inventoried to identify that the permit, fact sheet and other supporting documentation is included.

B. Complete specific NPDES PQR checklists for each permit

Desktop permit reviews of the specific permit records provided by the state should be completed for each permit. Reviewers should use the NPDES PQR Checklist (and the NPDES PQR Checklist Companion, if necessary) to evaluate permits and fact sheets for strengths and weaknesses. The NPDES PQR leader should specify a naming convention for the checklists (e.g.,

NPDES PQR Checklist <*insert 2 letter state code and NPDES number*> <insert facility name>) so that the files are easier to manage.

C. Perform NPDES PQR Desktop Review

The NPDES PQR pre-state assessment includes gathering state permitting policy and guidance documents, scheduling state visits, and asking NPDES PQR Pre-State Visit Questions. The answers to certain of these questions will provide relevant information for aspects of the NPDES PQR report.

The review team collects state permitting policy and guidance documents related to NPDES permitting, including state water quality standards (WQS) such as receiving water classifications, designated uses, criteria, mixing zone provisions, antidegradation policies, bacteria standards, and mercury standards and methods; reasonable potential analysis; water quality-based effluent limitation development procedures; monitoring guidance; and procedures for including standard conditions. To the extent the Region does not already have access to this information, some of it will likely be available on the state permitting website and some may be obtained from the state permitting staff. It is helpful to have a separate folder for all the electronic files and designate a logical naming convention for the electronic files.

The next step is to schedule the state visit part of the NPDES PQR. State visits might occur at the state headquarters or can occur in a state regional office. Typical state visits are 12-16 hours over 2 days.

D. Perform state visits

The on-site PQR questions guide the reviewer as to what to ask during the state visit to understand the state's permitting policies and procedures. The responses provided during this portion of the NPDES PQR will be used along with the NPDES PQR permit review findings to guide the subsequent file reviews. In essence, do the permits and files reflect the process described by the state?

During the state visit and file review the PQR team should use the permit file documentation to complete the checklists drafted based on the desktop review of the permits and fact sheets. Follow-up questions can clarify unclear issues or unanswered items in the checklists. The completed checklists including comments (comments and written annotations or issues summaries are often included as part of the checklists to clarify responses and issues) should be provided to the PQR Report leader.

E. Prepare NPDES PQR Report

The core permit review process involves assessing selected permits using the NDPES PQR checklists and evaluating the state NPDES permit development process using the pre-state visit and state visit questions, file review and discussions with permit writers. The rest of this document provides additional detail for preparation of the sections of the NPDES PQR Report.

The PQR Report Template includes the following primary headings:

- PQR Background
- State Program Background
- National Topic Review Findings
  - Includes National Topic Areas: Nutrients, Pesticides General Permit, Pretreatment, and Stormwater
- Regional Topic Area Findings
- Action Items

The discussion below addresses how to develop the PQR Report, including brief information on PQR background and additional information regarding the remaining sections of the PQR Report Template.

PQR Report Cover Page

Fill in the EPA Region number, state name, date, and Region with address on the cover page of the PQR Report.

NPDES PQR Background

The first section of the NPDES PQR report includes a standard overview of the PQR process and requires the completion of several fill-in-the-blanks pertaining to the specific state being reviewed. The third paragraph requires the leader to insert the Region number, the state name, the state visit location and date, and a description of the NPDES PQR review team.

The fourth paragraph requires the leader to insert a description of how the permits were chosen for review, including the total number of permits reviewed for each portion of the review. Example language: The NPDES PQR for [*Insert state*] consisted of records for *[Insert number]* POTW permits and *[Insert number]* industrial permits for a total of *[Insert number]* permits. The majority of the permits were selected from a list of permits issued after [*Insert date*] to ensure a review of recently issued permits. The remaining permits were selected based on discussions with state staff, with an effort to primarily include major facilities, with an equal distribution of industrial and municipal permits.

The fifth paragraph discusses special focus area reviews selected by EPA Regions on a state-by-state basis to target specific types or aspects of permits. Insert the region number and special focus areas selected, with rationale as deemed appropriate].

II. STATE PROGRAM BACKGROUND

Section II provides an overview of the state NPDES permitting program and is developed primarily from the interview information, some of which may be obtained prior to the site visit (from the state and existing sources) and some during the on-site interview.

A. Program Structure

The PQR report template includes the following direction regarding program structure:

> *Describe the state NPDES program structure. Information should include: A description of the permitting authority (general structure, responsibilities, locations, and staffing levels); a description of data systems used to support permitting; a discussion of permit and fact sheet tools and templates; a description of the permit quality assurance/quality control (QA/QC) process; and an indication of how permit files are managed.*

The information needed to complete this section of the report can be found in the responses to the PQR interview questions (i.e., written responses and notes from the interview). The information also may be available in handouts or documents provided by the state, and in some cases on the state permitting authority's website.

B. Universe and Permit Issuance

The PQR report template includes the following direction regarding permitting universe:

> *Describe the NPDES permit universe in the state. Information should include: a description of the NPDES permitting universe (major and minor permits by POTW and non-POTW categories; general permits and permittees); a discussion of backlog rates.*

The information needed to complete this section of the report can be found in the responses to the PQR interview questions (i.e., written responses and notes from the interview). The Region also may have some of these data as a matter of course. PCS/ICIS can provide some of this information; however, such data should be confirmed with the state since states are expected to provide accurate and current permitting data.

The PQR report template includes the following direction regarding the permit development and issuance process:

> *Describe the permit development and issuance process. Permit process information should include: a discussion of permit application forms and the application process; a discussion of the permit development process (steps, responsibilities, data and tools used, documentation); a discussion of technology-based effluent limitation (TBEL) development; a discussion of water quality-based effluent limitation (WQBEL) development; an indication of when and how mixing zones were used; a description of the state antidegradation requirements and process; a description of how monitoring/reporting requirements were developed; a discussion of narrative conditions and boilerplate/standard conditions; a description of when and how fact sheets were developed; a description of 401 certification; and a discussion of the notice and comment process, as well the hearing and appeals process.*

The information needed to complete this section of the report can be found in the responses to the PQR interview questions. Facts sheets, relevant state policy and guidance also may be useful.

C. State-Specific Challenges

The PQR report template includes the following direction regarding permit program challenges:

> *Describe requirements, processes, and resource or other challenges that affect permitting but were not evident from reviewing permits.*

The information needed to complete this section of the report can be found in the responses to the PQR interview questions (. It is important to document any challenges identified by the state. If the Region is aware of challenges that impact permitting, these issues can be included provided that it remains clear that it is the Region that perceives the challenge (except when the state and Region identify the same challenge).

D. Current State Initiatives

The PQR report template includes the following direction regarding state initiatives:

> *Describe state initiatives that will improve permitting.*

The information needed to complete this section of the report can be found in the responses to the PQR interview questions. The Region also may have knowledge of relevant initiatives as a result of general program oversight and support.

III. CORE REVIEW FINDINGS

Section III presents a summary of the core review findings and is developed from the NPDES PQR checklists, interview and the on-site file review. The leader should look across all of the permits reviewed and significant sub-categories (e.g., all POTWs) and summarize any significant issues.

To the extent possible, the core review findings should be presented using a consistent format to describe:

- Program Strengths
- Critical Findings (core review findings that are inconsistent with regulatory requirements)
- Recommended Actions (core review findings that are inconsistent with existing policy or guidance), and
- Suggested Practices (best practices that may help improve the program).

Under each substantive heading findings should be discussed in the order presented above in narrative form. The Critical Findings, Recommended Actions, and Suggested Practices correlate with the Category 1, 2, and 3 action items presented in Section IV of the PQR report.

A. Basic Facility Information and Permit Application

1. Facility Information

The PQR Report Template includes the following direction regarding facility information:

> *Describe findings regarding the extent to which general facility information is discussed in the permit and fact sheet. Aspects to consider should include: a clear description of the facility in the fact sheet; a description of processes or services conducted by the facility (including if the facility is an existing or new source); identification of outfalls and description of wastestreams associated with each permitted outfall; and, location information relative to receiving waters.*

The information needed to complete this section of the report can be found in the responses to Sections I, II and III of the NPDES PQR Checklist. Sections I and II include basic permit, facility and receiving water information. Section III includes information regarding the permit application. The information in the checklist is based on a review of the permit and fact sheet, as well as on a review of the permit application within the permit file (review of the permit application is generally completed during the site visit).

To develop findings the PQR leader should review the checklists and summarize any issues overall and by any relevant sub-category. The leader also should be familiar with the permit application information that is contained in the permit files, as well as with representative permits and fact sheets. Based on this information the leader can characterize how the state presents facility information.

A complete permit should identify the physical location of the facility so that the permitting authority and the public can identify the discharge location. In some cases, the facility may not have a physical street address; therefore, the permit should describe the facility location using the closest cross streets. The permit should also include the latitude and longitude coordinates for the facility. The permit file should include a location map. Facility location information is required through the application process (e.g., Federal NPDES Application Form 1, Form 2A, Form 2B, Form 2F); therefore, the permit writer should have access to the information and include the facility location information in the permit and fact sheet.

A strong permit record should include descriptions of the type of facility that will discharge, including if the facility is a POTW or specific type of industry. Such descriptions are not only useful to the public in understanding the type of discharge that might occur, but facility descriptions are critical for the permitting authority in order to correctly identify effluent limitations applicable to the discharge. The facility description may be included in the beginning of the permit or fact sheet, or it may be included in the section discussing technology-based effluent limitations applicable to the discharge. The permit or fact sheet should also include a discussion of processes employed by the facility, whether it is a POTW or industrial facility. For POTWs, the facility description should include a discussion of treatment processes and system components, for example, primary treatment, anaerobic digestion, ultraviolet disinfection. For industrial facilities, the description might include the SIC code, a brief description of the nature

of the business, raw materials used, end products, rate of production, long-term average flows, and contributing waste streams. The PQR report may provide recommendations on how to improve facility descriptions in the permit or supporting documentation.

The permit should identify the location of each outfall, or the discharge point to a body of water, for each outfall at the facility. The discharge location could be identified in the section prescribing effluent limitations, or it could be included in a designated section of the permit or fact sheet. The discharge location may be identified by using latitude and longitude coordinates, or a description of the location within the stream using river stream segments, identifying features, landmarks, or other coordinate systems. The PQR report should be clear in discussing if the permit or supporting information provided adequate information regarding identification of all relevant outfalls at a facility.

In conjunction with identifying the outfall location, a permit should identify the water body to which the facility discharges. An NPDES receiving water is the water of the United States or water of the state into which the permittee discharges. The receiving water name is often identified on the cover page or in a separate section in the fact sheet. The permit should include receiving water names corresponding to each outfall identified in the permit.

2. Permit Application Requirements

The PQR report template includes the following direction regarding permit applications:

> *Describe findings regarding the permit applications reviewed. Aspects to consider may include: availability of the application in the record, whether the state uses EPA application forms or state forms, timeliness of application submittal (e.g., complete applications must be submitted 180 days prior to discharge or expiration), completeness of application, and adequacy and quality of data submitted.*

The information needed to complete this section of the report can be found in the permit application(s) in the permit file, responses to some of the PQR interview questions, and in the responses to Section III of the NPDES PQR Checklist.

To develop findings the PQR leader should assess whether complete permit applications were identified in the files, whether these were timely applications, whether the proper forms were used for the specific type of facility, whether required effluent sampling data were included in the file, and whether the applications included proper signatures.

A permit record should contain a complete permit application package, which should be available during the state visit. The permit application must be appropriate to the facility type and discharge (i.e., POTW, existing industrial, CAFO) and should contain the application requirements contained in Part 122, Subpart B. Authorized states are not required to use the EPA application forms; however, any alternative form used by an authorized state must include, at a minimum, the federal requirements. Based on facility and discharge type, quantitative effluent data are required with application submissions; the data requirements vary depending on the industrial category of the facility, the facility's discharge characteristics, and the types of

pollutants expected to be in the discharge. For facilities that are subject to production- or flow-based effluent guidelines, the application should contain production rates and flow data in units of measure that correspond to applicable effluent guidelines, to allow for calculation of effluent limitations. A complete application should include the facility location information, outfall designations and associated treatment processes (as applicable), current flow and pollutant characterization data, and should contain information to adequately characterize the nature and quantity of pollutants in the effluent and their potential impact on the receiving water. Further, the application should contain correct calculations and flow diagrams. The PQR report should identify instances where incorrect forms or inadequate data were provided. The PQR report may include a discussion of the state's response to the finding, for example, if a state was in the process of revising the applications available to the permittees.

The regulations at 40 CFR 122.21(c) and (d) require that applications are submitted at least 180 days prior to commencement of discharge or 180 days prior to permit expiration, respectively. The permit record should contain the previous permit, from which the permit expiration date can be determined. The date the application is submitted is usually identified as the date the permitting authority receives the application. The PQR report should identify instances when the permit applications were not submitted in accordance with the regulations at 40 CFR 122.21(c) and (d).

The regulations at 40 CFR 122.22 specify the signatories and certification for all permit applications. For a corporation, the signatory is a responsible corporate officer. For a partnership, the signatory is a general partner. For a sole proprietorship, the signatory is the proprietor. For a municipality, the signatory is the principal executive officer or ranking elected official. A correct application should contain the appropriate signatures and certifications. Where signatures are inappropriate, the PQR report should identify these situations.

B. Technology-based Effluent Limitations

NPDES regulations at 40 CFR 125.3(a) require that permitting authorities develop technology-based treatment requirements (TBELs), which represent the minimum level of control that must be imposed in a permit. TBELs are developed independently of the potential impact of a discharge on the receiving water (which is addressed through water quality standards and water quality-based effluent limitations).

1. TBELs for POTWs

The PQR Report Template includes the following direction regarding TBELs for POTWs:

> *Discuss findings regarding application of technology-based standards for POTWs. Topics may include: description of facility and treatment processes; identification of applicable standards (secondary or equivalent to secondary); application of alternate effluent limitations (adjusted standards and alternative state requirements); accommodating multiple types of treatment systems at a single facility in developing effluent limitations;*

establishing effluent limitations in appropriate units and forms (i.e., concentration or mass; average weekly and average monthly).

The information needed to complete this section of the report can be found in the responses to the PQR interview questions and in the responses to Section IV.B.1-5 of the NPDES PQR Checklist. The PQR leader should review this information and compile any strengths or weaknesses observed regarding how effectively secondary treatment requirements, such as parameters, limits, units, forms, are being implemented and documented, including noting any omissions or variations and whether such omissions or variations are explained in the fact sheet or permit file. In addition, it is helpful to review a representative POTW permit and fact sheet to see how the state implements and documents secondary treatment requirements. General findings should be given more emphasis that more limited permit specific findings.

POTWs must meet secondary or equivalent to secondary standards (including limits for BOD, TSS, pH, and percent removal). The permit must contain all of the parameters stipulated in the secondary treatment standards, equivalent to secondary standards, or adjusted standards. The concentration limits must be as stringent as those established in the secondary treatment or equivalent to secondary standards (effluent limitations for BOD_5 and TSS may be more stringent than those required by secondary treatment standards where they are based on state requirements or water quality-based effluent limitations). In addition, the permit must contain effluent limitations for BOD_5 and TSS for POTWs expressed as average monthly and average weekly limitations. Where there are deficiencies in the permit regarding concentration limitations or the limit basis (i.e., average monthly and average weekly), the PQR report should call out the deficiencies.

Part 133 establishes an alternate set of standards that apply to certain facilities employing waste stabilization ponds or trickling filters as the main process; those standards are referred to as equivalent to secondary treatment standards (Section 5.1 of the NDPES Permit Writers' Manual provides a detailed discussion of equivalent to secondary treatment and alternative standards for POTWs). If these alternate standards apply, the PQR report should discuss if the permit applies the alternate standards correctly and if the permit or supporting documentation adequately supports the application of alternate standards.

A defensible permit should be clear in the requirements for POTWs subject to secondary treatment standards that a minimum of 85% of the influent concentration of BOD_5 and TSS must be removed in the effluent discharged to the receiving water. In most cases, percent removal requirements are stipulated in the effluent limitations table or section; however, in some cases these may be elsewhere in the permit, such as in the Standard Conditions section. The PQR report should clearly identify where permits do not meet the percent removal requirements.

A strong fact sheet should include a description of the facility and treatment processes employed at the POTW. The fact sheet should indicate which set of effluent standards are applicable to the discharge, and if alternative parameters are authorized in the permit

(e.g., $CBOD_5$), the fact sheet should include a discussion of the basis for limiting a parameter alternative to those included in Part 133.

2. TBELs for Non-POTWs

The PQR report template includes the following direction regarding TBELs for non-POTWs:

> *Discuss findings regarding application of effluent limitation guidelines and standards to non-POTW facilities. Topics may include: 1) facility description, including a discussion of proper categorization based on processes and whether the facility is an existing or new source; 2)expected wastestreams and pollutants in the discharge; 3) description of treatment processes and identification of applicable standards; 4) extent of discussion of implementing technology-based standards and resulting effluent limitations development; 5) case-by-case considerations; 6) application of alternate effluent limitations; 7) establishing effluent limitations in appropriate units and forms such as concentration or mass); and 8) calculation of effluent limitations based on effluent limitations guidelines.*

The information needed to complete this section of the report can be found in the responses to the PQR interview questions and in the responses to Section IV.B.6-10 of the NPDES PQR Checklist. The PQR leader should review this information and compile any strengths or weaknesses observed.

To develop findings the PQR leader should assess whether the permit file characterizes the facility, processes, wastestreams, treatment process, and applicable standards. They also should indicate whether the file included or explained the data, methodology, calculations and limits developed for the facility, including any special considerations. If TBELs were developed on a case-by-case basis, the leader should further confirm that the permit file documented this, including the basis for such limits (i.e., consideration of criteria specified at 40 CFR 125.3(d)).

Permits issued to non-municipal dischargers must require compliance with a level of treatment performance equivalent to *Best Practicable Control Technology Currently Available* (BCT), *Best Available Technology Economically Achievable* (BAT) or *Best Conventional Pollutant Control Technology* (BCT) for existing sources, and for new sources compliance with a level consistent with *New Source Performance Standards* (NSPS). If ELGs are not available, a permit must include TBELs developed on a case-by-case, best professional judgment basis, in accordance with the criteria outlined at 40 CFR 125.3(d). The PQR report should address if the permit or supporting file information demonstrates these considerations are adequately addressed.

Permit file documentation should address the type of facility (category and existing or new source) and identify any technology-based limitations and standards that EPA may have established for that industrial category. If one or more ELGs apply, the documentation should identify and include the data required to develop effluent limitations for the discharge based on the ELGs, and the calculations supporting any limits. A facility may have both new and existing sources, produce multiple products, or have production operations that fall under more than one category or subcategory of the effluent guidelines. Documentation should reflect

consideration of all applicable effluent guidelines. In addition, the type of effluent limitation, mass, concentration, or other units, calculated for a pollutant depend on the type of pollutant and the way the performance standard is expressed in the applicable effluent guideline. Where no ELG applies, documentation should indicate which limits were developed on a case-by-case, best professional judgment basis and how criteria outlined at 40 CFR 125.3(d) (or the state equivalent) were met. The file also should address any consideration of state laws or regulations governing technology-based effluent limitations that might require more stringent performance standards than those required by federal effluent guidelines. The PQR leader should indicate if documentation exists that illustrates the permit writer evaluated facility categorization and applied ELGs appropriately for the type of facility and its operations.

A fact sheet should discuss the permitting authority's basis for technology-based effluent limitations. The basis could be effluent guidelines, developed on a case-by-case basis, or other state requirements. Further, the fact sheet should include the applicable category and subcategory, a discussion of the standards, the data considered in developing effluent limitations, any special considerations, and the basis for the final effluent limitations. Ideally, the permit record would include the data set, production and flow data, and calculations used to develop the final technology-based effluent limitations. The PQR report should identify instances where a fact sheet is well developed in terms of the permitting authority's basis for technology-based effluent limitations. Also, the PQR report should discuss inadequacies such as lack of applying ELGs, or lack of illustration of how ELGs were selected as appropriate for the facility, where appropriate.

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.

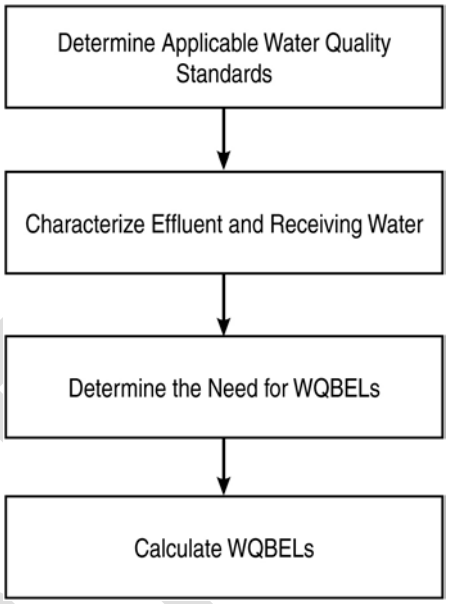
The PQR report template includes the following direction regarding WQBELs:

> *Discuss findings regarding water quality-based effluent limitation development. Topics may include: identification of receiving stream; applicable water quality standards; impairment status; applicable TMDLs; identification of pollutants of concern; determination of critical conditions; consideration of dilution or mixing zones; quality of discussion of water quality assessment (reasonable potential analysis) and subsequent development of water quality-based effluent limitations; illustration of water quality-based effluent limitations calculations; and discussion of antidegradation and anti-backsliding requirements.*

The information needed to complete this section of the report is based on select documents in the permit file, such as reasonable potential or limits calculations worksheets, responses to some of the PQR interview questions, and is also addressed in the responses to Section IV.C of the NPDES PQR Checklist.

To develop findings the PQR leader should review the checklists and summarize any issues that are identified. In general, the leader should identify any gaps in the standards to permits process (Figure 2). He or she should be sufficiently familiar with representative permit files and fact sheets to assess how the state selects pollutants of concern and evaluates these to determine which pose reasonable potential to cause or contribute to an exceedance of water quality criteria. Ideally, the state's fact sheets discuss this process or reference a technical or guidance document. The PQR leader should determine whether the permit files include documentation of the reasonable potential (RP) process and WQBEL calculations (often states have developed a reasonable potential and/or limits spreadsheet), and whether limits exist for parameters with reasonable potential, and limits are consistent with calculations.

Figure 2. Standards to permits



Permit file documentation should indicate how permit writers and water quality modelers determined the appropriate water quality standards applicable to receiving waters. This is done by evaluating and characterizing the effluent and receiving water, including identifying pollutants of concern; determining critical conditions; incorporating information on ambient pollutant concentrations; assessing any dilution considerations; determining whether limits were necessary for pollutants of concern and, where necessary, calculating such limits or other permit conditions. For impaired waters, the documentation also should indicate whether and how permit writers developed limits consistent with the assumptions of applicable EPA-approved total maximum daily loads (TMDLs).

Permit file documentation should identify applicable water quality goals and standards. Permit writers must evaluate if the technology-based effluent limitations are stringent enough to achieve water quality standards and if the technology-based effluent limitations alone will not achieve this goal, a permit writer is required to develop water quality-based effluent limitations. Figure 2 illustrates the water quality standards to permits process. Chapter 6 of the NPDES Permit Writers' Manual provides additional detail. Typically, the permit, fact sheet, or statement of basis will identify the receiving stream and discuss designated uses and applicable water quality standards. The PQR report should address if these topics were included in the permit or supporting information.

Such documentation also should include characterization of the receiving stream and effluent; these data inform the permit writer as to whether water quality-based effluent limitations are required for the discharge. Permit file documentation, ideally a fact sheet, should identify pollutants of concern for the proposed discharge and discuss the basis for the determination. Pollutants of concern may be identified based on the facility type, expected discharge, information provided by the permittee in the application forms, water body impairment status, and pollutants identified as requiring water quality-based effluent limitations in the previous

permit. A discussion of pollutants of concern may be included in a stand-alone section in the fact sheet, in the section describing the facility type and proposed discharge, or where the technology-based effluent limitations are discussed. The permit record should identify the process by which pollutants of concern are identified and evaluated for development of effluent limitations. The PQR report should discuss if permits or supporting information adequately identified pollutants of concern, how those pollutants of concern were selected, and how they were evaluated with respect to the need for effluent limitations.

In addition to identifying designated uses and specific water quality goals and criteria, a state's water quality standards may include general provisions for allowing mixing effluent with the receiving water when determining the need for and calculating water quality-based effluent limitations. Water quality standards may include implementation policies for mixing zones and dilution allowances, or the implementation policies may be included in a permitting authority's internal policies. If the water quality standards allow for consideration of mixing, a quality fact sheet would identify the allowance for mixing and provide a rationale for a dilution allowance or why a dilution allowance is not appropriate for the discharge. Further, file documentation should illustrate the calculation of the dilution allowed and describe the data considered in the calculation of the dilution allowance, as well as identify how the final effluent limitations were developed incorporating the dilution allowance. In addition to the mixing of the facility's effluent and receiving water, documentation should address whether and how ambient water quality conditions were considered and the impacts from other discharges to the receiving water in developing water quality-based effluent limitations. A strong fact sheet will address each of these aspects of evaluating the impact of the discharge on the receiving water. Sometimes it is not clear how a mixing zone was applied in the determination of reasonable potential or calculation of effluent limitations. The PQR report should address if the permit or supporting information provided a clear and adequate discussion of the consideration of a mixing zone, application of the state's policy for mixing zones, and illustration of how reasonable potential was determined and effluent limitations were calculated where mixing zones were incorporated.

Permit file documentation also should include a water quality assessment or a "reasonable potential analysis" to determine the need for water quality-based effluent limitations. States may have developed their own methods for conducting such an assessment, or may follow the approach outlined in EPA's *Technical Support Document for Water Quality-based Toxics Control.* The PQR report should indicate which procedure a state uses when determining the need for water quality-based effluent limitations. Some permitting authorities have developed software programs (or spreadsheets) to conduct the reasonable potential analysis, incorporating their state's water quality criteria, mixing zone implementation procedures, ambient water quality data, and TMDLs. The fact sheet and permit record should be explicit in describing the approach for determining the need for water quality-based effluent limitations and the permit file should include the output of the assessment, with a reference to the spreadsheet, or the entire spreadsheet. Further, the fact sheet and permit record should present the data considered in the reasonable potential analysis and the basis for using those data. For example, if a new facility was being permitted and had not provided actual discharge data to the

permitting authority for evaluation, a permit writer may have evaluated data from a similar type of facility and discharge in considering the need for parameter-specific water quality-based effluent limitations. In this example, the permit may then include a reopener condition that the facility provide actual discharge monitoring data for analysis and if necessary, develop or revise effluent limitations based on the actual facility-specific data. The PQR report should describe the programs or tools a state used to determine the need for water quality-based effluent limitations such as a "reasonable potential analysis", discuss if the permit or supporting information was clear in illustrating the process, and if the permit or supporting information provided adequate documentation that an evaluation was conducted for the facility. Further, the PQR report should identify if the permit or supporting information presented the data considered in the water quality assessment in a clear fashion and if the data were appropriate to the facility.

Where the water quality assessment determines a reasonable potential to cause, or contribute to an excursion above any state water quality standard, an effluent limitation must be included in the permit. Further, where a technology-based effluent limitation is required due to applicable effluent guidelines or determined on a case-by-case basis, and is not protective of water quality standards, a water quality-based effluent limitation must be developed and included in the permit. The PQR report should identify instances where the permit lacked effluent limitations for pollutants demonstrating reasonable potential to cause or contribute to an excursion above any state water quality standard, including those scenarios where technology-based effluent limitations alone were insufficient to ensure protection of water quality standards.

The fact sheet should adequately discuss the process by which water quality-based effluent limitations were determined to be necessary and the development of those water quality-based effluent limitations for all pollutants limited in the permit. The fact sheet also should address impaired water bodies and TMDLs applicable to the discharge. If a TMDL is applicable, the fact sheet should have described the procedures for implementing the TMDL through the NPDES permit. The PQR report should identify instances where the permit was inadequate in terms of demonstrating that a water quality assessment was conducted and if effluent limitations were not established where data demonstrated a need for water quality-based effluent limitations. Further, where TMDLs were applicable to a facility, the PQR report should highlight if the TMDL was applied appropriately.

If there were limits less stringent than existing limitations, permit documentation must include an explanation (and any required anti-backsliding analysis) indicating why the revised limits were permissible. Overall, the water quality-based effluent limitations in the permit should be consistent the rationale and documentation provided in the fact sheet and permit record. The PQR report should discuss if the permit addressed anti-backsliding and if any effluent limitations were less stringent than existing limitations. The PQR report should also identify if the permit or supporting information evaluated the need for and supported backsliding.

D. Monitoring and Reporting

The NPDES regulations require facilities discharging pollutants to waters of the United States 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 processes. These analytical results should be reported to the permitting authority with information necessary to evaluate discharge characteristics and compliance status.

Specifically, the regulations at 40 CFR 122.44(i) require NPDES permits to contain monitoring requirements 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. The regulations at 40 CFR 122.48, also require 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, developed on a case-by-case basis, with a frequency dependent on the nature and effect of the discharge.

The PQR Report Template includes the following direction regarding monitoring:

> *Discuss findings regarding monitoring and reporting requirements. Topics may include: consistency of monitoring requirements, frequency, and location (e.g., influent monitoring of BOD5 and TSS to determine compliance with technology-based standard requiring a minimum percent removal requirements); appropriate monitoring frequency based on type of discharge and corresponding limit basis (i.e., number of monthly samples used in calculating average monthly effluent limitations); specifying sampling and analytical methods consistent with Part 136; inclusion of WET monitoring; minimum reporting requirements; and recordkeeping requirements.*

The information needed to complete this section of the report consists of certain responses to the PQR interview questions, and responses to Section V of the NPDES PQR Checklist. In addition, states may have monitoring guidance or policy documents that specify general and specific practices for specific categories of facilities.

To develop findings the PQR leader should review the relevant responses to the PQR checklist and summarize any issues identified. The PQR leader also should be familiar with how monitoring (including WET) and monitoring reporting are addressed within the permits and explained in the fact sheets.

The monitoring and reporting section of a permit generally includes specific requirements for monitoring locations, monitoring frequencies, sample collection, analysis methods, reporting and recordkeeping. Monitoring and reporting requirements may be included in the section of the permit specifying effluent limits, standard conditions, or in a separate section designated for monitoring and reporting requirements. Each permit should require monitoring for parameters appropriate to determine compliance with established effluent limitations. For

example, a POTW that is required to meet minimum percent removal requirements for BOD_5 (or alternate parameter) and TSS should also be required to conduct influent and effluent monitoring on a basis that allows calculation of the percent removal of that pollutant.

Appropriate monitoring locations should be specified in an NPDES permit to ensure compliance with the permit limitations and provide the necessary data to determine the effects of an effluent on the receiving water. A complete fact sheet will include a description and justification for all monitoring locations required by the permit.

Monitoring frequencies are also identified in the monitoring and reporting section of the permit and frequencies should be sufficient to provide data to characterize the effluent quality, detect events of noncompliance, consider the need for data, and as appropriate, the potential cost to the permittee. A permit must require at least annual monitoring for all pollutants limited in the permit, unless the permittee has applied for and has been granted a specific waiver by the permitting authority and it is included as a condition of the permit. Documentation should include an explicit discussion in the fact sheet providing the basis for establishing monitoring frequencies. If a state policy or guidance document exists that was used in determining appropriate monitoring frequencies, a strong fact sheet would address the state policy or internal guidance.

Permits must specify the sample collection method for all parameters required to be monitored in the permit. Certain sample collection and storage requirements are identified as part of the analytical methods specified in Part 136. A thorough fact sheet should identify the rationale for requiring grab or composite samples. Permits must specify the analytical methods to be used for monitoring. Permits should require monitoring using methods approved by EPA and consistent with the requirements in Part 136 and that the results of such monitoring be submitted to the permitting authority. In some cases, there may be two or more approved Part 136 analytical methods available for the analysis of a parameter. In such cases, the permit should determine whether there is a need to select one of the approved methods and to include a requirement in the permit mandating the use of only the selected method. This approach may be required when an effluent limitation is established at a level that is quantifiable by one approved method but is below the minimum level of another approved method (e.g., mercury).

Permits should also require whole effluent toxicity (WET) testing to evaluate the toxicity of a discharge to the receiving stream. To protect water quality, EPA recommends that WET tests be used in NPDES permits together with requirements based on chemical-specific water quality criteria. WET monitoring conditions included in permits should specify the particular biomonitoring test to be used, the test species, required test endpoints, and quality assurance/quality control procedures. Additional monitoring conditions may be required based on the nature of the facility, including biosolids monitoring, combined sewer overflows and sanitary sewer overflows, and stormwater monitoring.

NPDES regulations require the permittee to maintain records and periodically report on monitoring activities. NPDES regulations also require that monitoring results be reported on a

discharge monitoring report (DMR). The permit should provide or reference the form that the permittee should use for reporting data during the permit term. In some cases, the permit might include a copy of the form as an attachment. Data reported include both data required by the permit and any additional data the permittee has collected consistent with permit requirements. All facilities must submit reports on discharges and sludge use or disposal at least annually. In addition, POTWs with a pretreatment program must submit a pretreatment report at least annually.

The permit also should contain requirements to retain records for at least three years; recordkeeping requirements for sewage sludge and the CAFO program require records be kept five years or longer if required by the State Director.

E. Standard and Special Conditions

The regulations at 40 CFR 122.41 require that all NPDES permits, including NPDES general permits, contain *standard conditions*. Further, the regulations at 40 CFR 122.42 require that NPDES permits for certain categories of dischargers must contain certain 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 these required narrative permit conditions, permits may also contain additional narrative requirements that are unique to a particular permittee. These case-specific narrative requirements are generally referred to as *special conditions*. Special conditions might include requirements such as: additional monitoring or special studies; best management practices (see 40 CFR 122.44(k)), and/or; permit compliance schedules (see 40 CFR 122.47). Where a permit contains special conditions, such conditions must be consistent with applicable regulations.

The PQR Report Template includes the following direction regarding standard and special conditions:

> *Discuss findings regarding standard conditions. The discussion should address if all standard conditions are established in the permit. Topics may include: completeness of standard conditions; stringency compared to federal requirements; additional standard conditions based on facility category. Discuss findings regarding special conditions. Topics may include: explanation of relevance and purpose of special conditions; identification of measureable milestones if compliance schedules are established; explanation of special studies or additional monitoring requirements; and for POTWs, pretreatment, biosolids, CSO, and /or SSO requirements.*

The information necessary to complete this section of the report is based on certain responses to the PQR interview questions and responses to Sections VI and VIII of the NPDES PQR Checklist. To develop findings the PQR leader should review the relevant sections of the completed checklists and summarize and issues identified.

Standard conditions applicable to all dischargers are contained in the regulations at 40 CFR 122.41 and outlined in various legal, administrative, and procedural requirements of the permit and cover definitions, testing procedures, records retention, notification requirements, penalties for noncompliance, and other permittee responsibilities. **The conditions provided at 40 CFR 122.41 apply to all types and categories of NPDES permits and must be included in all permits.** The conditions at 40 CFR 122.42 apply only to certain categories of NPDES facilities. Any permit issued to a facility in one of the categories listed in 40 CFR 122.42 must contain the additional standard conditions, as applicable.

Some states may include the federal standard conditions as a separate attachment to the NPDES permit and some states may incorporate standard conditions verbatim or by reference to the regulations. Further, some states may modify the language of the federal standard conditions, but the requirements must not be less stringent than the requirements at 40 CFR 122.41. A defensible permit should clearly identify the standard conditions so that the permittee is well aware of the requirements.

Special conditions supplement numeric effluent limitations and may require the permittee to conduct additional monitoring and special studies, implement best management practices, or adhere to compliance schedules. Special conditions are generally developed on a case-by-case basis, based on the unique characteristics of the facility. Special conditions may require mixing zone studies, toxicity identification and reduction evaluations (TIE/TRE), or sediment monitoring. Permits should establish a reasonable schedule for completion and submission of a study or other special requirement; if the anticipated timeline is longer than one year, interim milestones and requirements are advisable. Permits may not contain compliance schedules that extend a Clean Water Act deadline or postpone NPDES requirements.

If special conditions are included in a permit, the fact sheet should include a discussion of the justification for the special conditions. Further, the fact sheet should describe the purpose of the special conditions and rationale for the compliance schedule and associated milestones.

F. Administrative Process

The administrative process includes documenting all permit decisions, coordinating EPA and state review of the draft (or proposed) permit, providing public notice, conduct hearings (if appropriate), responding to public comments, and defending the permit and modifying it (if necessary) after issuance.

The PQR Report Template includes the following direction regarding standard and special conditions:

> *Discuss findings regarding documentation of the permit administration process. Topics may include the quality of the permit record with respect to demonstration that public notice procedures were implemented accordingly; organization of comments received; response to comment document; revisions to permit limits or requirements; the process by which the draft permit was reviewed by EPA or a state; discussion of permit modifications, rationale, and documentation of modifications.*

The information necessary to develop this section of the report is based on certain responses to the PQR interview questions and responses to Section VII of the NPDES PQR Checklist. To develop findings the PQR leader should review the relevant sections of the completed checklists and summarize and issues identified.

The administration process might be different for each state. Often the state will have unofficial procedures for issuing permits. The administrative process could begin with sending out a reminder that the application is due 180 days before the expiration of an existing permit or with receipt of an application for a new discharger.

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft NPDES permit or other significant actions with respect to an NPDES permit or permit application. Interested parties and members of the general public have an opportunity to comment on the draft NPDES permit during this time. Actions for which public notice is required include:

- Tentative denial of an NPDES permit application
- Preparation of a draft NPDES permit (including a proposal to terminate a permit)
- Scheduling of a public hearing
- An appeal has been granted by the Environmental Appeals Board, or
- A major permit modification after a permit has been issued.

The permitting authority must provide public notice of the draft permit and it must provide at least 30 days for public comment. The draft permit is usually submitted for public notice after it has undergone internal review by the permitting authority. Most state-issued major permits typically undergo public notice concurrently with EPA review. The permit record should contain evidence that public notice has been provided in accordance with 40 CFR 124.10. For major permits, publication of a notice in a daily or weekly newspaper within the area affected by the facility or activity is required. For all permits, public notice should be provided via direct mailing to interested parties. The fact sheet should include information regarding public notice procedures for the proposed permit.

Public notice of a draft permit might elicit comments from concerned individuals or agencies. The response to comments should be included in the record and must briefly describe and respond to all significant comments on the draft permit raised during the public comment period or during any hearing. In addition, it must specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change. The response to comments must be available to the public.

EPA may review state-issued permits and provide comments on, objections to, or recommendations with respect to the permit, within 90 days of receiving the permit. The administrative record should include documentation of any comments received from EPA on the draft permit. Permits issued by EPA require an opportunity for state review and certification; the state in which a discharge originates is provided the opportunity to review an

application or draft permit and certify that the discharge will comply with the applicable water quality standards. EPA may not issue a permit until a certification is granted or waived. The permit record should also include documentation regarding the state certification review. A strong permit record should contain an organized collection of comments received by interested parties, EPA, or the state during state review and certification process. This provides a straightforward record of issues raised, the permitting authority's response to comments, and any revisions to the draft permit subsequent to the review period. Further, the permit record should document if any permits have been contested or appealed for review.

Under certain circumstances, it may be necessary to modify the permit before its expiration date. Certain minor modifications may be processed by the permitting authority without implementing the procedures for public notice. The permit record should contain all copies of the permit, including the draft permit, final issued permit, and any modifications to the permit.

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.

Permit fact sheets and supporting documentation should establish a clear basis or rational for limitations and other permit decisions in the development of final permits. Some of the content of the fact sheet and administrative record is specified by federal and state regulation, and the remainder is dictated by good project management.

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 not establishing, water quality-based effluent limitations.

The PQR Report Template includes the following direction regarding documentation of technology-based and water quality-based effluent limitations:

> *Discuss findings regarding documentation of technology-based effluent limitation development. Topics may include: 1) facility description, including categorization (processes and existing versus new source); 2) expected pollutants in the discharge; 3) description of treatment processes and identification of applicable standards; 4) extent of discussion of implementing technology-based standards and resulting effluent limitations development; 5) case-by-case considerations; 6) application of alternate effluent limitations; and 7) establishing effluent limitations in appropriate units and forms (i.e., concentration or mass).*
>
> *Discuss findings regarding documentation of water quality-based effluent limitation development. Topics may include: 1) identification of receiving stream; 2) applicable water quality standard; 3) impairment status; 4) applicable TMDLs; 5) identification of pollutants of concern; 6) quality of discussion of water quality assessment (reasonable potential analysis); 7) subsequent development of water quality-based effluent limitations; 8) discussion of antidegradation, and anti-backsliding requirements.*

The information necessary to develop this section of the report is based on certain responses to the PQR interview questions, and the responses to Section IV.A–C of the NPDES PQR Checklist. To develop findings the PQR leader should review the relevant sections of the completed checklists and summarize any issues where permit requirements or key decisions are not explained and documented.

Under 40 CFR 124.8 and 124.56 fact sheets are required for major NPDES permits, general permits, permits that incorporate a variance or warrant an explanation of certain conditions, and permits subject to widespread public interest. 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 and compliance schedules, contact information, and procedures for issuing the final permit.

The factsheet should clearly explain the reasons for a permit limit variance for a new source or a waiver of a pollutant limit for an existing source. The explanation should show that in allowing alternate limits, there was no violation of water quality standards for that pollutant in the receiving stream and the stream is not listed for this pollutant(s). In addition, the factsheet should clearly describe the need for a compliance schedule, the dates by which the facility must comply and the rationale for giving the facility additional time.

Fact sheets should sufficiently describe the permitted facility, processes and treatment systems, proposed discharge, and expected pollutants of concern. Further, the fact sheet and record should provide an understanding of the facility location respective to the receiving stream, ambient water quality, and other sources of pollutants in the vicinity of the discharge to evaluate the potential impact of the permitted facility's discharge on the receiving stream.

With regard to TBELs, fact sheets for POTW permits should provide a useful description of the treatment processes employed at the POTW along with a discussion of applicable secondary treatment standards and resulting technology-based effluent limitations. If alternate technology standards are deemed appropriate, the fact sheet and permit record must provide adequate documentation supporting the application of alternate standards and effluent limitations. Fact sheets for industrial facilities should include a thorough description of the facility and processes or services provided by the facility, including a discussion of data representative of current production and flow. This information is critical in understanding how to correctly apply effluent guidelines. The permit records for POTWs and industrial facilities should contain comprehensive documentation of the development of all effluent limitations. Technology-based effluent limits should include an assessment of applicable standards, data used in developing effluent limitations, and actual calculations used to develop effluent limitations.

Fact sheets also should discuss the approach used to determine the need for water quality-based effluent limitations, including reasonable potential analysis, and resulting effluent limitations. The procedures implemented for determining the need for water quality-based effluent limitations, whether contained in the fact sheet or permit record, should be clear and concise in explaining the basis for establishing, or not establishing, water quality-based effluent limitations.

Fact sheets should include a meaningful discussion of pollutants of concern, indicator pollutants, case-by-case requirements, and impairment status of the receiving stream and associated TMDLs. In addition, the fact sheets should discuss whether mixing was allowed for the discharge, if TMDLs exist for the receiving water and how they are implemented in the permit, and how the proposed water quality-based effluent limitations comply with antidegradation and anti-backsliding provisions. A detailed illustration of the reasonable potential analysis and effluent limitation calculations may be included as an attachment to the fact sheet, but may also be included only as part of the permit record. The procedures implemented for determining the need for water quality-based effluent limitations, whether contained in the fact sheet or permit record, should be clear and straightforward in explaining the basis for establishing water quality-based effluent limitations, or for determining that water quality-based effluent limitations are not necessary for the discharge. Fact sheets should document evaluation of TBELs and WQBELs and use the most stringent as the final limitation. Additional information can be in the form of reports or spreadsheets generated by state-specific software programs but should provide a clear illustration of the development of limitations.

H. National Topic Areas

National topic areas are specific 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. These topic areas are reviewed for all state PQRs.

NPDES PQR Checklists have been developed for each of the national topic areas (except pesticides) and questions are added to the state visit interview targeting these topic areas.

1. Nutrients

In March 2011, EPA announced a framework for nutrient reductions that in part called for ensuring the effectiveness of point source permits in sub-watersheds targeted or identified as priorities due to nutrient pollution. The framework specifically identified permits for municipal and industrial wastewater treatment facilities that contribute significant nitrogen and phosphorus loadings, CAFOs, and urban stormwater sources that discharge into nitrogen and phosphorus–impaired waters or are significant sources of nitrogen or phosphorus.

The PQR report template includes the following direction regarding nutrients:

> *Discuss findings regarding nutrients. Topics may include: whether the state has numeric criteria or a state policy for nutrients; whether state NPDES permits implement the criteria or policy, with a particular focus on permits for municipal and industrial wastewater treatment facilities that contribute significant nitrogen and phosphorus loadings, CAFOs, and urban stormwater sources that discharge into nitrogen and phosphorus–impaired waters or are themselves significant sources of nitrogen or phosphorus; the sufficiency of documentation; implementation of other recommended elements of a state framework for managing nitrogen and phosphorus.*

The information necessary to develop this section of the report is based on certain responses to the PQR interview questions, and is also addressed in the Nutrients PQR Checklist. Additional information may be available from the state permitting authority's website. Nutrients are also discussed on EPA's Nutrient Pollution Policy and Data website: www.epa.gov/nandppolicy/index.html. To develop findings, the PQR leader should review the Nutrient PQR Checklist and the Nutrient PQR Checklist Companion Document and identify any issues, review the responses to interview questions, review any state numeric criteria or nutrient policy, and check the EPA Nutrient Pollution Policy and Data website to address the topics identified above.

Please present findings in the following format: 1) Background; 2) Program Strengths; 3) Critical Findings (i.e., national topic review findings that are inconsistent with regulatory requirements).

2. Pesticides

On October 31, 2011, EPA issued a final NPDES *Pesticide General Permit (PGP) for Discharges from the Application of Pesticides* to waters of the United States. The federal PGP applies where EPA is the permitting authority. Approximately 40 state NPDES authorities also have issued state pesticide general permits.

The PQR report template includes the following direction regarding pesticides:

> *Discuss findings regarding the state's pesticide general permit. Topics may include: status of state pesticide permit(s), the scope of pesticide permitting in the state, whether the state*

has one or more general permits for the discharge of pesticides, what type of management, monitoring, and reporting requirements are specified in the general permit.

The information necessary to complete this section of the report is based on certain responses to the PQR interview questions. Additional information may be available from the state permitting authority's website. NPDES permitting of pesticide discharges (including links to state permits) is also discussed on EPA's NPDES Pesticides page: www.epa.gov/npdes/pesticides. To develop findings the PQR leader should review the Pesticides PQR checklist and the Pesticides PQR Checklist Companion Document as well as the responses to interview questions. The PQR leader may also review the state pesticides permit(s), and review the EPA's NPDES Pesticides webpage to address the topics identified above.

Please present findings in the following format: 1) Background; 2) Program Strengths; 3) Critical Findings (i.e., national topic review findings that are inconsistent with regulatory requirements).

3. Pretreatment

The pretreatment program review assesses the status of the state pretreatment program and specific language in POTW permits.

The PQR report template includes the following direction regarding pretreatment:

Discuss findings regarding pretreatment. Topics may include: POTW program oversight (audits and PCIs); CIUs where EPA or state has oversight; streamlining; NPDES permit quality review.

The information necessary to complete this section of the report is based on certain responses to the PQR interview questions. Additional information may be available from the state permitting authority's website. Pretreatment is also discussed on EPA's Pretreatment webpage: www.epa.gov/npdes/pretreatment. To develop findings, the PQR leader should review the Pretreatment PQR Checklist, the Pretreatment PQR Checklist Companion for Review of Pretreatment Program Requirements, as well as the responses to the interview questions and summarize key information and any issues. The PQR report should summarize program oversight such as the number of audits and inspections conducted; the number of significant industrial users (SIUs) in approved pretreatment programs; and the number of categorical industrial users discharging to municipalities that do not have approved pretreatment programs); and the status of streamlining rule implementation.

Please present findings in the following format: 1) Background; 2) Program Strengths; 3) Critical Findings (i.e., national topic review findings that are inconsistent with regulatory requirements).

4. Stormwater

The NPDES program requires stormwater discharges from certain municipal separate storm sewer systems (MS4s), industrial activities, and construction sites to be permitted. Generally,

EPA and NPDES-authorized states issue individual permits for medium and large MS4s and general permits for smaller MS4s, industrial activities, and construction activities.

The PQR report template includes the following direction regarding stormwater:

> *Insert a summary of state stormwater permits, including the number and form of Phase I MS4, Phase II MS4, Industrial and Construction stormwater permits. List the stormwater permits that were reviewed. Discuss findings regarding stormwater permits.*

State stormwater program status information and permits should be obtained through discussions with state stormwater program leads either prior to or during the on-site interview. To develop findings the PQR leader should select which stormwater permits are to be reviewed, review those permits using the appropriate stormwater (MS4, MSGP, or CGP) PQR checklist and checklist companion documents, and compile any issues identified.

Please present findings in the following format: 1) Background; 2) Program Strengths; 3) Critical Findings (i.e., national topic review findings that are inconsistent with regulatory requirements).

I. REGIONAL TOPIC AREA FINDINGS

Regional topic areas are selected by the EPA Regions, and permits or aspects of permits are compared against relevant requirements. Each regional topic area should be addressed in its own section in this portion of the report. The PQR Standard Operating Procedures include criteria for selecting regional topic areas and guidelines for conducting reviews of these areas.

A-D. [Insert Regional Topic Area]

In this section of the report the author should identify the regional topic area selected, briefly explain why each topic is of particular importance (i.e., why these requirements are important for the protection of water quality), and describe the number of permits and the permit provisions reviewed. This discussion should reference statutory or regulatory authority for the regional topic area requirements and summarize the program area requirements. The focus of the regional topic area reviews is to verify that NPDES permits and fact sheets fulfill applicable requirements. Thus, the discussion should characterize the extent to which the permits fulfill the regional topic area requirements, and how well fact sheets and other permit file documents explain the basis for such requirements.

Please present findings in the following format: 1) Background; 2) Program Strengths; 3) Critical Findings (i.e., regional topic review findings that are inconsistent with regulatory requirements) for each topic section.

IV. ACTION ITEMS

This section provides a summary of the main findings from Section III and provides proposed action items to improve each state's NPDES permit program. This list of proposed action items

will serve as the basis for ongoing discussions between the Region and the state as well as between the Region and EPA HQ.

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. These three categories track how findings should be presented in Section III of the report.

- **Category 1 -** Most Significant: proposed action items will address a current deficiency or noncompliance with a federal regulation.
- **Category 2 -** Recommended: proposed action items will address a current deficiency with EPA guidance or policy.
- **Category 3 -** Suggested: proposed action items are recommendations to increase the effectiveness of the permitting authority's NPDES permit program.

To develop this section of the report, for each of the respective sub-headings, the PQR leader should provide a brief overview of key findings described in Section III of the report and develop proposed action items that will address each finding. Each finding should be assigned Category 1, 2 or 3 to reflect the relative importance of the action item. Action items should be presented in ascending category order (i.e., all Category 1 items, then all Category 2 items, then all Category 3 items) within each section.

For the sub-headings below, the PQR Report Template direction is provided, followed by **illustrative examples** of action items.

A. Basic Facility Information and Permit Application

[Insert a brief overview of significant findings]. Proposed action items to help the [Insert state] strengthen their NPDES permit program include the following:

- Ensure that municipal and non-municipal permit applications were submitted with data representative of the discharge, including priority pollutant scans. (Category 1).
- Ensure that the current permit applications were included in the permit files or, if they were filed in a different location, ensure that the permit files identified where they can be located. (Category 2).
- State lacked clear process for documenting expired permits and notifying dischargers regarding permit renewal and application requirements. (Category 3).

B. Technology-based Effluent Limitations

[Insert a brief overview of significant findings]. Proposed action items to help the [Insert state] strengthen their NPDES permit program include the following:

- Ensure that all municipal permits include percent removal requirements for BOD_5 and TSS. (Category 1).

- Where BOD_5 and TSS requirements were more stringent than required under secondary treatment requirements, ensure that the fact sheet and permit file explain why. (Category 3).
- Ensure that permits with TBELs include two averaging periods for these limits as required by 40 CFR 122.45(d). (Category 1).
- When case-by-case limitations are developed using best professional judgment (BPJ), ensure that the fact sheet or permit documentation explained the basis for such limits including a discussion of how the criteria in 40 CFR 125.3(d) were considered. (Category 2).
- Even though a permit application indicated a facility was a new source, consider discussing this aspect of the facility in the fact sheet. (Category 3).

C. Water Quality-Based Effluent Limitations

[Insert a brief overview of significant findings]. Proposed action items to help the [Insert state] strengthen their NPDES permit program include the following:

- Ensure that fact sheets or statements of basis provide adequate documentation of a reasonable potential analysis. Fact sheets should have included a more in-depth discussion of selection of pollutants of concern, an explanation of the methodology followed to conduct the RPA, the basis for WLA development, a discussion of developing effluent limits, applying a mixing zone, and implementing compliance schedules. (Category 3).
- Where a dilution allowance or mixing zone was provided, the fact sheets and statements of basis should have described the allowable dilution or mixing zone, and provided an adequate discussion of how they were consistent with state water quality standards and mixing zone regulations and policies. (Category 3).

D. Monitoring and Reporting

[Insert a brief overview of significant findings]. Proposed action items to help the [Insert state] strengthen their NPDES permit program include the following:

- Where permits contained narrative requirements based on water quality standards as effluent limitations, ensure such permits included associated monitoring and reporting requirements sufficient to ascertain compliance with these requirements. (Category 1).
- Provide a monitoring rationale in the fact sheet or permit documentation. If the basis for monitoring was referenced, ensure the reference included an adequate rationale. Ensure that all permits were clear regarding monitoring location. (Category 2).

E. Standard and Special Conditions

[Insert a brief overview of significant findings]. Proposed action items to help the [Insert state] strengthen their NPDES permit program include the following:

- Ensure that all standard conditions are included and are complete in all permits. (Category 1).
- Consider including standards conditions in permits rather than cross-referencing separate documents to ensure that the permits adequately inform permittees of all applicable requirements. (Category 3).

F. Administrative Process (including public notice)

[Insert a brief overview of significant findings]. Proposed action items to help the [Insert state] strengthen their NPDES permit program include the following:

- Ensure that evidence of public notice is included in the permit files reviewed during the site visit. (Category 1).

G. Documentation (including fact sheet)

[Insert a brief overview of significant findings]. Proposed action items to help the [Insert state] strengthen their NPDES permit program include the following:

- The fact sheets and statements of basis need to provide adequate documentation of the reasonable potential analysis and procedures used to calculate WQBELs. (Category 2).
- Consider including a description of the treatment process in fact sheets. (Category 3).
- Consider discussing designated uses and/or impairment status of the receiving water in fact sheets. (Category 3).
- Consider supplementing fact sheets to include a clear discussion of how pollutants of concern are identified. (Category 3).

H. National Topic Areas

Similar to the core review, the action items for National Topic Areas are developed based on the findings of each review.

Proposed actions items for each national topic area should be included in the respective section below and follow the same category-order format as above.

1. Nutrients

[Insert a brief overview of significant findings]. Proposed action items to help the [Insert state] strengthen their NPDES permit program include the following:

[*Insert action items and category*].

2. Pesticides

[Insert a brief overview of significant findings]. Proposed action items to help the [Insert state] strengthen their NPDES permit program include the following:

[*Insert action items and category*].

3. Pretreatment

[Insert a brief overview of significant findings]. Proposed action items to help the [Insert state] strengthen their NPDES permit program include the following:

[*Insert action items and category*].

4. Stormwater

[Insert a brief overview of significant findings]. Proposed action items to help the [Insert state] strengthen their NPDES permit program include the following:

[*Insert action items and category*].

I. Regional Topic Areas

The action items for regional topic areas are developed based on the findings of each review

Proposed Actions Items for each regional topic area should be included in the respective section below and follow the same category-order format as above.

1-4. [Insert Regional Topic Area]

[Insert a brief overview of significant findings]. Proposed action items to help the [Insert state] strengthen their NPDES permit program include the following:

[*Insert action items and category*].