CHAPTER 9. Special Conditions

Special conditions in National Pollutant Discharge Elimination System (NPDES) permits supplement numeric effluent limitations and require the permittee to undertake activities designed to reduce the overall quantity of pollutants being discharged to waters of the United States, to reduce the potential for discharges of pollutants, or to collect information that could be used in determining future permit requirements.

There are many different reasons to incorporate special conditions into a permit including

- To address unique situations, such as facilities discharging pollutants for which data are absent or limited, making development of technology- or water quality-based effluent limitations (TBELs or WQBELs) more difficult or impossible.
- To incorporate preventive requirements, such as requirements to install process control alarms, containment structures, good housekeeping practices, and the like.
- To address foreseeable changes to discharges, such as planned changes to process, products, or raw materials that could affect discharge characteristics.
- To incorporate compliance schedules to provide the time necessary to comply with permit conditions.
- To incorporate other NPDES programmatic requirements (e.g., pretreatment, sewage sludge).
- To impose additional monitoring requirements that provide the permit writer with data to evaluate the need for changes in permit limitations.
- To increase or decrease monitoring requirements, depending on monitoring results or changes in processes or products.
- To impose requirements for special studies such as ambient stream surveys, toxicity identification evaluations (TIEs) and toxicity reduction evaluations (TREs), bioaccumulation studies, sediment studies, mixing or mixing zone studies, pollutant reduction evaluations, or other such information-gathering studies.

Section 9.1 below addresses several types of special conditions that apply to both municipal and non-municipal facilities. Section 9.2 addresses special conditions unique to municipal facilities and section 9.3 addresses special conditions for stormwater discharges associated with industrial activity.

9.1 Special Conditions Potentially Applicable to Any Type of Discharger

This section discusses several types of special conditions that could be included in any NPDES permit (i.e., municipal or non-municipal). Those special conditions can be thought of as the *ABCs* of special conditions and include the following:

- **A**dditional monitoring and special studies.
- **B**est management practices (BMPs).
- **C**ompliance schedules.

A summary of the use of those special conditions follows.

9.1.1 Additional Monitoring and Special Studies

Additional monitoring requirements, beyond those required under the effluent limitations section of the permit, and special studies are useful for collecting data that were not available to the permit writer for consideration during permit development. Additional monitoring requirements and special studies generally are used to supplement numeric effluent limitations or support future permit development activities. Examples of the types of special studies that could be required in an NPDES permit include the following:

- **Treatability studies:** Might be required in a permit when insufficient treatability information for a pollutant or pollutants would hinder a permit writer from developing defensible TBELs. Treatability studies can also be required when the permit writer suspects that a facility might not be able to comply with an effluent limitation.
- **Toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE):** Could be required in a permit when wastewater discharges are found to be toxic using whole effluent toxicity (WET) tests. The purpose of those evaluations is to identify and control the sources of toxicity in an effluent. Further guidance related to U.S. Environmental Protection Agency (EPA) recommended TIE/TRE procedures and requirements is found in the following guidance manuals:
  - *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*[1] <www.epa.gov/npdes/pubs/tre.pdf>.
  - *Clarifications Regarding Toxicity Reduction and Identification Evaluations in the National Pollutant Discharge Elimination System Program*[2] <www.epa.gov/npdes/pubs/owmfinaltretie.pdf>.
  - *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations*[3] (No link—see the endnote for ordering instructions).
  - *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures*. 2nd ed[4] <www.epa.gov/npdes/pubs/owm0330.pdf>.
  - *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*[5] <www.epa.gov/npdes/pubs/owm0255.pdf>.
  - *Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity*[6] <www.epa.gov/npdes/pubs/owm0343.pdf>.
  - *Methods for Aquatic Toxicity Identification Evaluations: Phase III Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*[7] <www.epa.gov/npdes/pubs/owm0341.pdf>.
- **Mixing or mixing zone studies:** Might be required in a permit to assist in determining how effluent and receiving water mix and in establishing a regulatory mixing zone that can be applied when developing WQBELs.
- **Sediment monitoring:** Could be included in a permit if a permit writer suspects that pollutants contained in wastewater discharges accumulate in the sediments of the receiving water.
- **Bioaccumulation studies:** Might be required in a permit to determine whether pollutants contained in wastewater discharges bioaccumulate in aquatic organisms (e.g., fish, invertebrates). Such studies could be required when water quality criteria are expressed in terms of fish tissue levels. Additional guidance related to evaluating the bioaccumulation potential of a pollutant can

be found in the *EPA Great Lakes Water Quality Initiative Technical Support Document for the Procedure to Determine Bioaccumulation Factors*[8] (No link—see the endnote for ordering instructions).

When establishing additional monitoring or special studies, permit writers must ensure that any requirements related to the study (e.g., special sampling or analytical procedures) are specified in the appropriate permit condition. In addition, permit writers should establish a reasonable schedule for completion and submission of the study or monitoring program. If the anticipated timeline is longer than one year, an interim progress report during the study is advisable.

9.1.2 Best Management Practices (BMPs)

In general, BMPs are actions or procedures to prevent or reduce the discharge of pollution to waters of the United States. Title 40 of the *Code of Federal Regulations* (CFR) section 122.2 includes the following in the definition of BMPs:

- Schedules of activities.
- Prohibitions of practices.
- Maintenance procedures.
- Treatment requirements.
- Operating procedures and practices to control
  - Plant site runoff.
  - Spillage or leaks.
  - Sludge or waste disposal.
  - Drainage from raw material storage areas.

9.1.2.1 When to Use BMPs

Clean Water Act (CWA) section 304(e) authorizes EPA to require BMPs as part of effluent limitations guidelines and standards (effluent guidelines) to control plant site runoff, spillage or leaks, sludge or waste disposal, and drainage from raw material storage that it determines are associated with or ancillary to the industrial manufacturing or treatment process and can contribute significant amounts of pollutants to navigable waters. Where effluent guidelines require specific control measures, including BMPs or development of a BMP plan, permit writers must include such requirements in permits. In addition, CWA section 402(p)(3)(B)(iii) states that permits for discharges from municipal storm sewers must require controls, including management practices, to reduce the discharge of pollutants. Finally, CWA sections 402(a)(1) and (2) give the permitting authority the ability to include BMPs in permits on a case-by-case basis to carry out the provisions of the CWA.

The NPDES regulations at § 122.44(k) track the statutory provisions cited above. This section of the regulations provides that permits must contain BMPs (when applicable) to control or abate the discharge of pollutants when any of the following are true:

- They are authorized under CWA section 304(e).
- They are authorized under CWA section 402(p) for the control of stormwater discharges.
- Numeric effluent limitations are infeasible.
- The practices are necessary to achieve effluent limitations and standards or carry out the purpose and intent of the CWA.

Circumstances under which numeric effluent limitations might be infeasible include the following:

- Regulating a pollutant for which limited treatability or aquatic impact data are available to allow development of numeric TBELs or WQBELs.
- Regulating discharges when the types of pollutants vary greatly over time.

In addition, a permit writer should consider using BMPs under any of the following circumstances:

- When chemical analyses are inappropriate or impossible.
- When there is a history of leaks and spills or when housekeeping is sloppy.
- When a complex facility lacks data for a pollutant or pollutants.

9.1.2.2 BMPs in NPDES Permits

Permit writers include BMP requirements in permits using two approaches: (1) site-, process-, or pollutant-specific BMPs, or (2) a requirement to develop a BMP plan. Site-, process-, or pollutant-specific BMPs might be appropriate in the case of an individual permit where a permit writer has the opportunity to review the circumstances at the facility. On the other hand, it might not be appropriate to include site-, process-, or pollutant-specific BMPs as conditions in a general permit, a permit for a particularly complex facility, or a permit for a facility with operations not familiar to the permit writer. Instead, complicated facilities and discharges covered under a general permit could be required to develop a BMP plan that requires the permittee to determine appropriate BMPs on the basis of circumstances at its facility.

Specific BMPs

Specific BMPs are designed to address conditions particular to a type of facility or to a specific site, process, or pollutant. Specific BMPs might be used in a permit when

- They are needed to address ancillary activities that could result in the discharge of pollutants to waters of the United States.
- Numeric effluent limitations for a specific process are otherwise infeasible and BMPs serve as effluent limitations for that process.
- They are required to supplement and ensure compliance with effluent limitations in the permit.

To select a specific BMP, the permit writer could

- Review the industry profiles or the specific facility to determine the applicable and appropriate management practices.
- Evaluate whether the BMP would help to achieve effluent limitations or other environmental objectives for that facility.
- Use information from other permits, pollution prevention sources, and EPA guidance documents to identify applicable and appropriate BMPs.

Specific BMPs frequently are required for certain types of dischargers such as concentrated animal feeding operations (CAFOs), combined sewer overflows (CSOs), and stormwater discharges. The use of BMPs in permits for CSOs and stormwater are discussed in sections 9.2.3 and 9.3 below, respectively.

BMP Plans

The *Guidance Manual for Developing Best Management Practices*[9] <www.epa.gov/npdes/pubs/owm0274.pdf> describes the activities and materials at an industrial or municipal facility that are best addressed by BMPs. The manual also describes how BMPs work and gives examples of types of BMPs.

If a permit writer requires a BMP plan, it is the facility's responsibility to develop, implement, and evaluate the success or shortfalls of its own plan. Often, a BMP committee (i.e., a group of individuals within the plant organization) is responsible for developing the BMP plan and assisting the plant management in implementing and updating the BMP plan.

EPA has identified several recommended components of effective BMP plans and detailed each component in the *Guidance Manual for Developing Best Management Practices*. The minimum suggested components of a general BMP plan are presented below:

- General Provisions
  - Name and location of facility.
  - Statement of BMP policy and objective.
  - Review by plant manager.
- Specific Provisions
  - BMP committee.
  - Risk identification and assessment.
  - Reporting of BMP incidents.
  - Materials compatibility.
  - Good housekeeping.
  - Preventive maintenance.
  - Inspections and records.
  - Security.
  - Employee training.

BMP plans used to supplement effluent limitations or to describe how the discharger plans to meet effluent limitations can be submitted to the regulatory agency or be kept on-site and made available to the permitting authority upon request. A general schedule for BMP plan development can be included in the permit (e.g., complete and submit the plan within 6 months of permit issuance and begin implementing the plan within 9 months of permit issuance).

Exhibit 9-1 presents example permit text for a requirement to develop and implement a BMP plan and should be adapted as necessary to reflect conditions at the individual facility.

Exhibit 9-1 Example BMP plan requirement

The following is example text for requiring development and implementation of a BMP plan through an NPDES permit. The text should be crafted and changed as necessary to meet the individual facility's needs and the permitting authority's goals. The bracketed text should be updated to be specific to the permit.

1. Implementation.

[IF A BMP PLAN DOES NOT EXIST:]

The permittee, must develop and implement a best management practices (BMP) plan that achieves the objectives and the specific requirements listed below. A copy of the plan must be submitted to the U.S. Environmental Protection Agency (EPA) **[AND/OR STATE AGENCY]** within six months of the effective date of this permit. The plan must be implemented as soon as possible but no later than nine months from the effective date of the permit. The permittee must update and amend the plan as needed.

[IF A BMP PLAN ALREADY EXISTS:]

The permittee must during the term of this permit operate the facility in accordance with the BMP plan **[CITE EXISTING PLAN]** and in accordance with subsequent amendments to the plan. The permittee must amend the plan to incorporate practices to achieve the objectives and specific requirements listed below, and a copy of the amended plan must be submitted to the U.S. Environmental Protection Agency (EPA) **[AND/OR STATE AGENCY]** within three months of the effective date of this permit. The amended plan must be implemented as soon as possible but not later than six months from the effective date of the permit.

2. Purpose

Through implementation of the BMP plan the permittee must prevent or minimize the generation and the potential for the release of pollutants from the facility to the waters of the United States through normal operations and ancillary activities.

3. Objectives

The permittee must develop and amend the BMP plan consistent with the following objectives for the control of pollutants.

a. The number and quantity of pollutants and the toxicity of effluent generated, discharged, or potentially discharged at the facility must be minimized by the permittee to the extent feasible by managing each influent waste stream in the most appropriate manner.
b. Under the BMP plan, and any Standard Operating Procedures (SOPs) included in the plan, the permittee must ensure proper operation and maintenance of the treatment facility as required by § 122.41(e).
c. The permittee must establish specific objectives for the control of pollutants by conducting the following evaluations.
    1. Each facility component or system must be examined for its waste minimization opportunities and its potential for causing a release of significant amounts of pollutants to waters of the United States because of equipment failure, improper operation, and natural phenomena such as rain or snowfall, etc. The examination must include all normal operations and ancillary activities including material storage areas, plant site runoff, in-plant transfer, process and material handling areas, loading or unloading operations, spillage or leaks, sludge and waste disposal, or drainage from raw material storage. **[NOTE THAT ONLY THE APPLICABLE AREAS SHOULD BE INCLUDED IN THE PREVIOUS LIST.]**
    2. Where experience indicates a reasonable potential for equipment failure (e.g., a tank overflow or leakage), natural condition (e.g., precipitation), or other circumstances that may result in significant amounts of pollutants reaching surface waters, the program should include a prediction of the direction, rate of flow and total quantity of pollutants that could be discharged from the facility as a result of each condition or circumstance.

4. Requirements

The BMP Plan must be consistent with the objectives in the Objectives section above and the general guidance contained in the publication entitled *Guidance Manual for Developing Best Management Practices (BMPs)*, EPA 833-B-93-004, <www.epa.gov/npdes/pubs/owm0274.pdf> or any subsequent revisions to the guidance document. The BMP plan must

a. Be documented in narrative form, must include any necessary plot plans, drawings or maps, and must be developed in accordance with good engineering practices. The BMP plan must be organized and written with the following structure:
    1. Name and location of the facility.
    2. Statement of BMP policy.
    3. Structure, functions, and procedures of the BMP Committee.
    4. Specific management practices and standard operating procedures to achieve the above objectives, including the following:

Exhibit 9-1 Example BMP plan requirement

a. Modification of equipment, facilities, technology, processes, and procedures,
b. Reformulation or redesign of products,
c. Substitution of materials, and
d. Improvement in management, inventory control, materials handling or general operational phases of the facility.

5. Risk identification and assessment.
6. Reporting of BMP incidents.
7. Materials compatibility.
8. Good housekeeping.
9. Preventative maintenance.
10. Inspections and records.
11. Security.
12. Employee training.

b. Include the following provisions concerning BMP plan review:
   1. Review by plant engineering staff and the plant manager.
   2. Review and endorsement by the permittee's BMP Committee.
   3. A statement that the above reviews have been completed and that the BMP plan fulfills the requirements set forth in this permit. The statement must include the dated signatures of each BMP Committee member as certification of the reviews.

c. Establish specific BMPs to meet the objectives identified in the Objectives section above, addressing each component or system capable of generating or causing a release of significant amounts of pollutants, and identifying specific preventive or remedial measures to be implemented.

d. Establish specific BMPs or other measures that ensure that the following specific requirements are met:
   1. Ensure proper management of solid and hazardous waste in accordance with regulations promulgated under the Resource Conservation and Recovery Act (RCRA). Management practices required under RCRA regulations must be referenced in the BMP plan.
   2. Reflect requirements for Spill Prevention, Control, and Countermeasure (SPCC) plans under Clean Water Act (CWA) section 311 and 40 CFR Part 112 and may incorporate any part of such plans into the BMP plan by reference.
   3. Reflect requirements for stormwater control under CWA section 402(p) and the regulations at 40 CFR 122.26 and 122.44, and otherwise eliminate to the extent practicable, contamination of stormwater runoff.
   4. etc.

[NOTE: SECTION d. ABOVE COULD BE TAILORED TO EACH FACILITY BY THE PERMIT WRITER AND MAY INCLUDE PROCESSES OR AREAS OF THE FACILITY WITH HOUSEKEEPING PROBLEMS, NONCOMPLIANCE, SPILLS/LEAKS, OR OTHER PROBLEMS THAT COULD BE REMEDIED THROUGH A BMP. IF THERE IS A KNOWN SOLUTION TO THE PROBLEM (E.G., MORE FREQUENT INSPECTIONS, PREVENTIVE MAINTENANCE, ETC.), THIS REMEDY COULD ALSO BE INCLUDED AS A PART OF THE BMP PLAN REQUIREMENTS. TO GATHER IDEAS FOR SUCH REQUIREMENTS, THE PERMIT WRITER MAY WANT TO CONTACT THE PERMITTEE, COMPLIANCE PERSONNEL, FACILITY INSPECTORS, OPERATIONS OFFICE PERSONNEL, AND STATE AGENCY COUNTERPARTS. THE PERMIT WRITER MIGHT ALSO WANT TO CHECK REQUIREMENTS IN OTHER PERMITS AND BMP PLANS FOR SIMILAR FACILITIES.]

5. Documentation

The permittee must maintain a copy of the BMP plan at the facility and must make the plan available to EPA **[AND/OR STATE AGENCY]** upon request. All offices of the permittee, which are required to maintain a copy of the NPDES permit, must also maintain a copy of the BMP plan.

6. BMP Plan Modification

The permittee must amend the BMP plan whenever there is a change in the facility, or in the operation of the facility, that materially increases the generation of pollutants or their release or potential release to the receiving waters. The permittee must also amend the plan, as appropriate, when plant operations covered by the BMP plan change. Any such changes to the BMP plan must be consistent with the objectives and specific requirements listed above. All changes in the BMP plan must be reported to EPA **[AND/OR STATE AGENCY]** in writing.

7. Modification for Ineffectiveness

If at any time the BMP plan proves to be ineffective in achieving the general objective of preventing and minimizing the generation of pollutants and their release and potential release to the receiving waters and/or the specific requirements above, the permit and/or the BMP plan must be subject to modification to incorporate revised BMP requirements.

9.1.2.3 Pollution Prevention in BMPs

BMPs are, by their nature, pollution prevention practices. Traditionally, BMPs have focused on good housekeeping measures and good management techniques that attempt to avoid contact between pollutants and water as a result of leaks, spills, and improper waste disposal. However, on the basis of the authority granted under the regulations, BMPs may include a range of pollution prevention options, including production modifications, operational changes, materials substitution, and materials and water conservation.

When developing BMPs, permit writers should be familiar with the fundamental principles of pollution prevention:

- Pollution should be prevented or reduced at the source, whenever feasible (*Reduce*).
- Pollution that cannot be prevented should be reused or recycled in an environmentally safe manner, whenever feasible (*Reuse-Recycle*).
- Pollution that cannot be prevented or recycled should be treated in an environmentally safe manner, whenever feasible (*Treat*).
- Disposal or other release into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner (*Dispose of*).

When writing an NPDES permit, a permit writer who has familiarity with a certain type of processes might identify pollution prevention practices that are not used at a facility and that would help that facility achieve its pollution prevention goals. Where the pollution prevention practices are necessary to carry out the purposes and intent of the CWA, the permit writer may develop BMPs to implement those practices.

9.1.3 Compliance Schedules

The NPDES regulations at § 122.47 allow permit writers to establish schedules of compliance to give permittees additional time to achieve compliance with the CWA and applicable regulations. Schedules developed under this provision must require compliance by the permittee *as soon as possible*, but may not extend the date for final compliance beyond compliance dates established by the CWA. Thus, compliance schedules in permits are not appropriate for every type of permit requirement. Specifically, a permit writer may not establish a compliance schedule in a permit for TBELs because the statutory deadlines for meeting technology standards (i.e., secondary treatment standards and effluent guidelines) have passed. This restriction applies to both existing and new dischargers. Permit writers should note, however, that § 122.29(d)(4) allows a new source or new discharger up to 90 days to *start-up* its pollution control equipment and achieve compliance with its permit conditions (i.e., provides for up to a 90-day period to achieve compliance).

Examples of requirements for which a compliance schedule in an NPDES permit might be appropriate include:

- Pretreatment program development.
- Sludge use and disposal program development and implementation.
- BMP plan development and implementation.
- Effluent limitations derived from new or revised water quality standards.

An EPA Administrator's decision specifically addresses compliance schedules for effluent limitations derived from new or revised water quality standards. In the decision *In the Matter of Star-Kist Caribe, Inc*., documented in the memorandum *Order Denying Modification Request With Respect to the Administrator's 1990 Decision in Star-Kist Caribe, Inc. (NPDES Appeal No. 88-5)*[10] <www.epa.gov/npdes/pubs/owm0121.pdf>, the EPA Administrator interpreted section 301(b)(1)(C) of the CWA to mean that 1) after July 1, 1977, permits may not contain compliance schedules for effluent limitations based on water quality standards adopted before July 1, 1977, and 2) compliance schedules are allowed for effluent limitations based on standards adopted after that date *only* if the state has clearly indicated in its water quality standards or implementing regulations that it intends to allow them.

In May 2007, the Director of EPA's Office of Wastewater Management issued a memorandum to EPA Region 9 that clarified the requirements of § 122.47 as they relate to WQBELs [see *Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits*[11] <www.epa.gov/npdes/pubs/memo_complianceschedules_may07.pdf>. Permit writers should consider the principles outlined in this memo when assessing whether a compliance schedule for achieving a WQBEL is consistent with the CWA and its implementing regulations and when documenting the basis for a compliance schedule in a permit. Considerations outlined in the memo include the following:

- Demonstrate that the permittee cannot immediately comply with the new effluent limitation on the effective date of the permit.
- Include an enforceable *final* effluent limitation and a date for achievement in the permit.
- Justify and document the *appropriateness* of the compliance schedule; factors relevant to a determination that a compliance schedule is appropriate include how much time the discharger had to meet the WQBEL under prior permit(s), whether there is any need for modifications to treatment facilities, operations, or other measures and, if so, how long it would take to implement such modifications.
- Justify and demonstrate that compliance with the final WQBEL is required *as soon as possible*; factors relevant to a determination that a compliance is required as soon as possible include the steps needed to modify or install treatment facilities, operations, or other measures and the time those steps would take.
- Include an enforceable sequence of events leading to compliance with interim milestones for schedules longer than one year.
- Recognize that a schedule solely to provide time to develop a total maximum daily load (TMDL) or to conduct a use attainability analysis (UAA) is not appropriate.

Many of the principles outlined in the memo could be more generally applied to compliance schedules for requirements other than WQBELs.

9.2 Special Conditions for Municipal Facilities

This section explains several common special conditions that are applicable only to municipal facilities. These conditions reflect requirements for publicly owned treatment works (POTWs) to implement and enforce local pretreatment programs for their industrial users; biosolids (sewage sludge) disposal requirements; CSO requirements; SSO requirements; and municipal separate storm sewer system (MS4) requirements.

9.2.1 The National Pretreatment Program

CWA section 402(b)(8) requires that certain POTWs receiving pollutants from significant industrial sources (subject to CWA section 307(b) standards) establish a pretreatment program to ensure compliance with these standards. The implementing regulations at § 403.8(a) state that:

> Any POTW (or combination of POTWs operated by the same authority) with a total design flow greater than 5 million gallons per day (mgd) and receiving from industrial users pollutants which pass through or interfere with the operation of the POTW or are otherwise subject to pretreatment standards will be required to establish a POTW pretreatment program unless the NPDES state exercises its option to assume local responsibilities as provided in § 403.10(e).

As specified in § 403.8(a), the Regional Administrator or Director of an authorized state may require a POTW with a design flow of 5 mgd or less to develop a POTW pretreatment program. Program development could be determined to be necessary to prevent interference with or pass through of the POTW based on the nature, or volume, of the industrial influent, a history of treatment process upsets and violations of POTW effluent limitation(s), and contamination of municipal sludge.

Since 1978, approximately 1,500 POTWs have been required to develop and implement pretreatment programs through special conditions of NPDES permits. The pretreatment program was developed to control industrial discharges to POTWs and to meet the following objectives:

- To prevent pass through of pollutants.
- To prevent interference with POTW processes, including interference with the use or disposal of municipal sludge.
- To improve opportunities to recycle and reclaim municipal and industrial wastewater and sludges.

The pretreatment program also helps ensure POTW personnel health and safety.

As authorized by the pretreatment regulations at §§ 403.8(c), 403.8(d) and 403.8(e) and the NPDES regulations at § 122.44(j)(2), the requirements to develop and implement a POTW pretreatment program are included as enforceable conditions in the POTW's NPDES permit. NPDES permits drive the development and implementation of pretreatment programs by requiring the following:

- Adequate legal authority.
- Maintenance of an industrial user inventory.
- Development and implementation of local limits.
- Control mechanisms issued to significant industrial users (SIUs).
- Compliance monitoring activities.
- Swift and effective enforcement
- Data management and recordkeeping,
- Reporting to the approval authority (EPA or state).
- Public participation.

Through the NPDES permit, the POTW is required to develop and implement a pretreatment program. The POTW is required to submit an approvable program that meets the requirements in § 403.9(b). A more detailed description of these required program elements is in § 403.8(f). The POTW must have the legal authority enabling it to do the following:

- Deny or condition new or increased contributions of pollutants, or changes in nature of pollutants, to the POTW by industrial users.
- Require compliance with applicable pretreatment standards and requirements by industrial users.
- Control through a permit, order, or similar means the contribution to the POTW by each industrial user to ensure compliance with applicable pretreatment standards and requirements. These control mechanisms must have certain conditions as laid out in § 403.8(f)(1)(iii) and be enforceable.
- Require the development of compliance schedules where necessary by each industrial user for the installation of technology required to meet applicable pretreatment standards and requirements, and submission of all notices and self-monitoring reports to assess and ensure compliance.
- Carry out all inspection, surveillance, and monitoring procedures necessary to determine compliance with applicable pretreatment standards and requirements independent of information submitted by the industrial user (including the authority to enter the premises of the industrial user).
- Obtain remedies for noncompliance (e.g., injunctive relief, penalties).
- Comply with confidentiality requirements.

Further, at a minimum, the POTW must have procedures to do the following:

- Identify and locate all possible industrial users that might be subject to the POTW pretreatment program.
- Identify the character and volume of pollutants contributed to the POTW by the industrial users.
- Notify industrial users of applicable pretreatment standards and applicable requirements under CWA sections 204(b) and 405 and RCRA Subtitles C and D.
- Receive and analyze self-monitoring reports.
- Conduct sampling, inspections and other surveillance activities to determine compliance with applicable pretreatment standards and requirements independent of information supplied by the industrial user.
- Investigate instances of noncompliance.
- Comply with public participation requirements, including annual public notice of industrial users determined to be in significant noncompliance during the previous 12-month period.

Also, as part of the POTW pretreatment program, POTWs must have adequate resources and funding to implement the program, evaluate the need for and, as necessary, develop local limits and develop an enforcement response plan.

The NPDES permit should include the conditions specified in § 403.9, including that the POTW be required to submit the program documentation, detailing the authority and procedures to be implemented, along with other information about the program. The permit will allow the POTW up to one year, from the time when written notification from the approval authority determined the need for a pretreatment program, to develop and submit a program for approval as stated in § 403.8(b). Once the permitting authority reviews and approves the program, the requirement to implement the approved program is then incorporated into the permit.

The permit writer generally incorporates the requirement to develop a pretreatment program at the time of permit reissuance. The requirement, however, may also be incorporated through a modification of the permit if there is *cause*, as defined in detail in § 403.8(e), to make such a modification. The permit writer must follow procedures outlined by § 122.62 related to modifications when including the requirement to develop a pretreatment program in an NPDES permit

During the life of the permit, it might be necessary for the POTW to modify its approved pretreatment program (changes to local limits, changes to the ordinance, and such). The changes can be brought about by the POTW's desire to change the way the program operates, or they can be the result of changes that are necessary to address deficiencies in the program found during inspections or audits done by the permitting authority. Whatever the reason for the modification, the permitting authority must review and approve any modification to the approved program that is considered substantial, as required by § 403.18. All substantial program modifications to the POTW's approved pretreatment program require minor modifications to the NPDES permit and are subject to the procedural requirements in §§ 122.63(g) and 403.18. In addition, incorporating the requirement for a previously approved pretreatment program for the purpose of making the implementation of the program an enforceable part of the permit is also considered a minor modification to the NPDES permit.

The majority of POTWs that need pretreatment program requirements in their permits currently have them in place. In addition, an NPDES state or an EPA region will often designate a pretreatment coordinator to serve as the pretreatment expert to review the annual report from the POTW and recommend any action to be taken. The state or EPA regional pretreatment coordinator is a key resource on pretreatment issues, particularly at the time of NPDES permit reissuance. EPA regions and approved states have developed standard pretreatment development or implementation conditions (with minor modifications made to tailor the conditions to the specific discharger) that are placed in all applicable NPDES permits in that region or state. The permit writer can usually obtain examples of these NPDES pretreatment conditions from the EPA or state pretreatment coordinators. The permit writer might need to update or modify pretreatment implementation language or initiate corrective action related to the pretreatment program.

EPA has developed the Pretreatment Program Website <www.epa.gov/npdes/pretreatment> and prepared a number of guidance manuals for POTWs on how to implement their local pretreatment programs that are accessible through this website. In addition, EPA prepared the *Introduction to the National Pretreatment Program*[12] <www.epa.gov/npdes/pubs/final99.pdf> as a reference for anyone interested in understanding the basics of pretreatment program requirements and to provide a roadmap to additional and more detailed guidance materials for those trying to implement specific elements of the pretreatment program.

Pretreatment program information and monitoring data obtained through the POTW's pretreatment program are useful to the permit writer in identifying possible modifications to the pretreatment program's local limits or procedures, or the need for water quality-based controls. The permit writer should obtain such data with the aid of the pretreatment coordinator. Permits must include conditions requiring a POTW to provide a written technical evaluation of the need to revise local limits under § 403.5(c)(1) following permit issuance or reissuance [§ 122.44(j)(2)(ii)]. In addition, POTWs with a design flow greater than or equal to one mgd and with an approved pretreatment program or required to develop a pretreatment program must sample and analyze their effluent for priority (toxic) pollutants listed in Part 122, Appendix J, Table 2 as part of the permit application process [see § 122.21(j)(4)(iv)]. Those data and information also are useful for determining the need for WQBELs.

9.2.2 Biosolids (Sewage Sludge)

CWA section 405(d) requires that EPA regulate the use and disposal of sewage sludge to protect public health and the environment from any reasonably anticipated adverse effects of these practices. In the CWA, Congress directed EPA to develop technical standards for municipal sludge use and disposal options and enacted strict deadlines for compliance with these standards. Within one year of promulgation of the standards, compliance was required unless construction of new pollution control facilities was necessary, in which case compliance was required within two years.

EPA promulgated Part 503, Standards for the Use or Disposal of Sewage Sludge in 58 *Federal Register* (FR) 9248, February 19, 1993, with amendments in 59 FR 9095, February 19, 1994 and 60 FR 54764, October 25, 1995. These regulations address four sludge use and disposal practices: land application, surface disposal, incineration, and disposal in a municipal solid waste landfill. The standards for each end use and disposal method consist of general requirements, numeric effluent limitations, operational standards, and management practices, as well as monitoring, recordkeeping, and reporting requirements. Unlike technology standards, which are based on the ability of treatment technologies to reduce the level of pollutants, EPA's sewage sludge standards are based on health and environmental risks. Part 503 imposes requirements on four groups:

- Persons who prepare sewage sludge or material derived from sewage sludge.
- Land appliers of sewage sludge.
- Owners/operators of sewage sludge surface disposal sites.
- Owners/operators of sewage sludge incinerators.

Details of that rule are described in *A Plain English Guide to the EPA Part 503 Biosolids Rule*[13] <www.epa.gov/owm/mtb/biosolids/503pe/>.

The risk assessment for the Part 503 rule that governs the land application of biosolids took nearly 10 years to complete and had extensive rigorous review and comment. The risk assessment evaluated and established limitations for a number of pollutants. These limitations are in chapter 4 of *A Guide to the Biosolids Risk Assessments for the EPA Part 503 Rule*[14] <www.epa.gov/owm/mtb/biosolids/503rule/>.

The regulation is largely self-implementing, and anyone who engages in activities covered by the regulation must comply with the appropriate requirements on or before the compliance deadlines. A person who violates Part 503 requirements is subject to administrative, civil, and criminal enforcement actions.

CWA section 405(f) requires the inclusion of sewage sludge use or disposal requirements in any NPDES permit issued to a Treatment Works Treating Domestic Sewage (TWTDS) and authorizes the issuance of sewage sludge-only permits to non-discharging TWTDS. In response, EPA promulgated revisions to the NPDES permit regulations at Parts 122 and 124 in 54 FR 18716, May 2, 1989, to address inclusion of sewage sludge use and disposal standards in NPDES permits and NPDES permit issuance to treatment works that do not have an effluent discharge to waters of the United States, but are involved in sewage sludge use or disposal as preparers, appliers, or owners/operators. TWTDS includes all sewage sludge generators and facilities, such as blenders, that change the quality of sewage sludge.

EPA recognizes that implementation of Part 503 requirements is a source of confusion for permit writers and permittees who might already have NPDES permits with special conditions addressing sewage sludge requirements. EPA has provided several guidance documents to help clarify NPDES permitting expectations, and explain the requirements of Part 503:

- *Part 503 Implementation Guidance*[15] <www.epa.gov/npdes/pubs/owm0237.pdf>.
- *Land Application of Sewage Sludge—A Guide for Land Appliers on the Requirements of the Federal Standards for the Use or Disposal of Sewage Sludge Management in 40 CFR Part 503*[16] <www.epa.gov/npdes/pubs/sludge.pdf>.
- *Surface Disposal of Sewage Sludge—A Guide for Owners/Operators of Surface Disposal Facilities on the Monitoring, Recordkeeping, and Reporting Requirements of the Federal Standards for the Use or Disposal of Sewage Sludge in 40 CFR Part 503*[17] <No Link–see the endnote for ordering instructions>.
- *Preparing Sewage Sludge for Land Application or Surface Disposal—A Guide for Preparers of Sewage Sludge on the Monitoring, Record Keeping, and Reporting Requirements of the Federal Standards for the Use or Disposal of Sewage Sludge in 40 CFR Part 503*[18] <No Link–see the endnote for ordering instructions>.
- *Domestic Septage Regulatory Guidance, A Guide to the EPA 503 Rule*[19] <www.epa.gov/npdes/pubs/owm0026.pdf>.
- *Control of Pathogens and Vector Attraction in Sewage Sludge*[20] <www.epa.gov/nrmrl/pubs/625r92013/625R92013.pdf>.

The permit writer should refer to the *Part 503 Implementation Guidance* and EPA Region and state guidelines or policies for instructions on how to implement the applicable Part 503 standards into the permit. The permit writer will need to determine the type of sewage sludge use or disposal practice(s) used by the discharger and apply the appropriate Part 503 standards. In general, conditions will need to be established to address the following:

- Pollutant concentrations or loading rates.
- Operational standards (such as pathogen and vector attraction reduction requirements for land application and surface disposal and total hydrocarbons (THC) concentrations for incinerators).
- Management practices (e.g., siting restrictions, design requirements, operating practices).
- Monitoring requirements (e.g., pollutants to be monitored, sampling locations, frequency, and sample collection and analytical methods).

- Recordkeeping requirements.
- Reporting requirements (e.g., contents of reports and frequency or due dates for submission of reports).
- General requirements (e.g., specific notification requirements before land application, submission of closure and post closure plan for surface disposal sites).

In addition to any specific applicable Part 503 standards, three boilerplate conditions must be written in the NPDES permit where applicable. These consist of the following:

- Text requiring the POTW/TWTDS to comply with all existing requirements for sewage sludge use and disposal, including the Part 503 standards [see § 122.44(b)(2)].
- A reopener clause, which authorizes reopening a permit to include technical standards if the technical standards are more stringent or more comprehensive than the conditions in the permit [see § 122.44(c)].
- A notification provision requiring the permittee to give notice to the permitting authority when a significant change in the sewage sludge use or disposal practice occurs (or is planned) [see standard conditions in § 122.41(l)(1)(iii)].

If permit conditions based on existing regulations are insufficient to protect public health and the environment from adverse effects that could occur from toxic pollutants in sewage sludge, permit conditions should be developed on a case-by-case basis using best professional judgment (BPJ) to fulfill the statutory requirement. The *Part 503 Implementation Guidance* contains information to assist permit writers in developing effluent limitations and management practice requirements on a case-by-case basis to protect public health and the environment from adverse effects that could occur from toxic pollutants in sewage sludge. For more information on biosolids, see section 2.3.1.3 of this manual and the Biosolids Website <www.epa.gov/owm/mtb/biosolids/index.htm>

9.2.3 Combined Sewer Overflows (CSOs)

Combined sewer systems were designed and built in the 19th and early 20th centuries to collect sanitary and industrial wastewater and stormwater runoff. During dry weather, combined sewers carry sanitary wastes and industrial wastewater to a treatment plant. In periods of heavy rainfall, however, stormwater is combined with untreated wastewater, which can overflow and discharge directly to a waterbody without being treated. These overflows are called combined sewer overflows (CSOs).

EPA published a CSO Control Policy in 59 FR 18688, April 19, 1994. That policy represents a comprehensive national strategy to ensure that municipalities, permitting authorities, water quality standards authorities, and the public engage in a comprehensive and coordinated planning effort to achieve cost-effective CSO controls that ultimately meet appropriate health and environmental objectives.

The CSO Control Policy includes expectations for NPDES permitting authorities. In general, EPA envisioned a phased permit approach, including initial requirements to implement Nine Minimum CSO Controls (NMC) and develop a Long-Term CSO Control Plan (LTCP), followed by requirements to implement the controls in the approved LTCP. The Wet Weather Water Quality Act of 2000 amended the CWA to add section 402(q), which required that CSO permits be issued in conformance with the CSO Control Policy.

CSOs are point source discharges subject to both the technology-based requirements of the CWA and applicable state water quality standards. Under the CWA, CSOs must comply with Best Available Technology Economically Achievable (BAT) for nonconventional and toxic pollutants and Best Conventional Technology (BCT) for conventional pollutants. However, there are no promulgated BAT or BCT limitations in effluent guidelines for CSOs. As a result, permit writers must use BPJ in developing technology-based permit requirements for controlling CSOs. Permit conditions also must achieve compliance with applicable water quality standards.

The 1994 CSO Control Policy contains the recommended approach for developing and issuing NPDES permits to control CSOs. In addition, EPA has developed the following CSO guidance documents to help permit writers and permittees implement the CSO Control Policy:

- *Combined Sewer Overflows–Guidance for Long-Term Control Plan*[21] <www.epa.gov/npdes/pubs/owm0272.pdf>.
- *Combined Sewer Overflows–Guidance for Nine Minimum Controls*[22] <www.epa.gov/npdes/pubs/owm0030.pdf>.
- *Combined Sewer Overflows–Guidance for Screening and Ranking*[23] <www.epa.gov/npdes/cso>.
- *Combined Sewer Overflows–Guidance for Monitoring and Modeling*[24] <www.epa.gov/npdes/pubs/sewer.pdf>.
- *Combined Sewer Overflows–Guidance for Financial Capability Assessment and Schedule Development*[25] <www.epa.gov/npdes/pubs/csofc.pdf>.
- *Combined Sewer Overflows–Guidance for Funding Options*[26] <www.epa.gov/npdes/pubs/owm0249.pdf>.
- *Combined Sewer Overflows–Guidance for Permit Writers*[27] <www.epa.gov/npdes/cso>.
- *Combined Sewer Overflows–Guidance: Coordinating Combined Sewer Overflow Long-Term Planning with Water Quality Standards Reviews*[28] <www.epa.gov/npdes/pubs/wqs_guide_final.pdf>.

Combined Sewer Overflows–Guidance for Permit Writers[24] contains guidance and example permit language that permit writers can use. Controlling CSOs typically requires substantial long-term planning, construction, financing and continuous reassessment; therefore, the implementation of CSO controls will probably occur over several permit cycles. The guidance explains a phased permitting approach to CSOs. Exhibit 9-2 depicts this phased permitting approach and the types of permit conditions that should be developed for each phase.

Exhibit 9-2 Categories of CSO permitting conditions

NPDES permit	Phase I	Phase II	Post phase II
A. Technology-based	• NMC, at a minimum	• NMC, at a minimum	• NMC, at a minimum
B. Water Quality-based	• Narrative	• Narrative + performance-based standards	• Narrative + performance-based standards + numeric WQBELs (as appropriate)
C. Monitoring	• Characterization, monitoring, and modeling of CSS	• Monitoring to evaluate water quality impacts • Monitoring to determine effectiveness of CSO controls.	• Post-construction compliance monitoring
D. Reporting	• Documentation of NMC implementation • Interim LTCP deliverables.	• Implementation of CSO controls (both NMC and long-term controls)	• Report results of post-construction compliance monitoring
E. Special conditions	• Prohibition of dry weather overflows (DWO) • Development of LTCP	• Prohibition of DWO • Implementation of LTCP • Reopener clause for water quality standards violations • Sensitive area reassessment	• Prohibition of DWO • Reopener clause for water quality standards violations

Depending on the permittee's situation, a permit may contain both Phase I and Phase II elements. Phase I permits require demonstration of implementation of the NMC, shown in Exhibit 9-3.

Exhibit 9-3 Nine minimum CSO controls

1. Proper operation and regular maintenance programs for the sewer system and the CSOs
2. Maximum use of the collection system for storage
3. Review and modification of pretreatment requirements to ensure that CSO impacts are minimized
4. Maximization of flow to the POTW for treatment
5. Prohibition of CSOs during dry weather
6. Control of solid and floatable materials in CSOs
7. Establishment of pollution prevention programs
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts
9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls

In the Phase I permit issued/modified to reflect the CSO Control Policy, the NPDES authority should at least require permittees to

- Immediately implement BAT/BCT, which at a minimum includes the NMC, as determined on a BPJ basis by the permitting authority.
- Develop and submit a report documenting the implementation of the NMC within 2 years of permit issuance/modification.

- Comply with applicable water quality standards, no later than the date allowed under the state's water quality standards expressed in the form of a narrative limitation.
- Develop and submit, consistent with the CSO Control Policy and based on a schedule in an appropriate enforceable mechanism, an LTCP, as soon as practicable, but generally within 2 years after the effective date of the permit issuance/modification. Permitting authorities may establish a longer timetable for completion of the long-term CSO control plan on a case-by-case basis to account for site-specific factors that could influence the complexity of the planning process. Exhibit 9-4 shows the minimum elements of the LTCP.

Exhibit 9-4 Elements of the long-term CSO control plan

1. Characterization, monitoring, and modeling of the combined sewer system
2. Public participation
3. Consideration of sensitive areas
4. Evaluation of alternatives
5. Cost/performance considerations
6. Operational plan
7. Maximizing treatment at the existing POTW treatment plant
8. Implementation schedule
9. Post-construction compliance monitoring program.

Phase II permits require the implementation of an LTCP. The Phase II permit should contain the following:

- Requirements to implement the technology-based controls including the NMC determined on a BPJ basis.
- Narrative requirements that ensure that the selected CSO controls are implemented, operated and maintained as described in the LTCP.
- Water quality-based effluent limits under §§ 122.44(d)(1) and 122.44(k), requiring, at a minimum, compliance with, no later than the date allowed under the state's water quality standards, the numeric performance standards for the selected CSO controls, based on average design conditions specifying at least one of the following:
  - A maximum number of overflow events per year for specified design conditions consistent with II.C.4.a.i of the CSO Control Policy.
  - A minimum percentage capture of combined sewage by volume for treatment under specified design conditions consistent with II.C.4.a.ii of the CSO Control Policy.
  - A minimum removal of the mass of pollutants discharged for specified design conditions consistent with II.C.4.a.iii of CSO Control Policy.
  - Performance standards and requirements that are consistent with II.C.4.b of the CSO Control Policy.
- A requirement to implement, with an established schedule, the approved post-construction water quality assessment program including requirements to monitor and collect sufficient information to demonstrate compliance with water quality standards and protection of designated uses as well as to determine the effectiveness of CSO controls.

- A requirement to reassess overflows to sensitive areas in those cases where elimination or relocation of the overflow is not physically possible and economically achievable.
- Conditions establishing requirements for maximizing the treatment of wet-weather flows at the POTW, as appropriate, consistent with section II.C.7. of the CSO Policy.
- A reopener clause authorizing the NPDES authority to reopen and modify the permit upon determination that the CSO controls fail to meet water quality standards or protect designated uses.

Reviewing the permittee's LTCP and consultations with other staff involved in the CSO control process and the permittee are important steps in the process of determining the appropriate Phase II permit conditions. Water quality-based controls in phase II generally are expressed as narrative requirements and performance standards for the combined sewer system. Finally, post Phase II permit conditions would address continued implementation of the NMC, long-term CSO controls, and post-construction compliance monitoring. There may also be numeric WQBELs when there are sufficient data to support their development.

LTCP implementation schedules were expected to include project milestones and a financing plan for design and construction of necessary controls as soon as practicable. The CSO Control Policy expected permitting authorities to undertake the following:

- Review and revise, as appropriate, state CSO permitting strategies developed in response to the National CSO Control Strategy.
- Develop and issue permits requiring CSO communities to immediately implement the NMC and document their implementation and develop and implement an LTCP.
- Promote coordination among the CSO community, the water quality standards authority, and the general public through LTCP development and implementation.
- Evaluate water pollution control needs on a watershed basis and coordinate CSO control with the control of other point and nonpoint sources of pollution.
- Recognize that it might be difficult for some small communities to meet all the formal elements of LTCP development, and that compliance with the NMC and a reduced scope LTCP might be sufficient.
- Consider sensitive areas, use impairment, and a CSO community's financial capability in the review and approval of implementation schedules.

Communities must develop and implement LTCPs to meet water quality standards, including the designated uses and criteria to protect those uses for waterbodies that receive CSO discharges. The CSO Control Policy recognized that substantial coordination and agreement among the permitting authority, the water quality standards authority, the public, and the CSO community would be required to accomplish this objective. The CSO Control Policy also recognized that the development of the LTCP should be coordinated with the review and appropriate revision of water quality standards and their implementation procedures.

In developing permit requirements to meet technology-based requirements and applicable state water quality standards, the permit writer, in conjunction with staff involved in water quality standards and the

permittee, should identify the appropriate site-specific considerations that will determine the CSO conditions to be established in the permit. EPA believes that the following information will be particularly relevant in developing the appropriate conditions:

- CSO Discharge
  - Flow, frequency, and duration of the CSO discharge.
  - Available effluent characterization data on the CSO discharge.
  - Available information and data on the impacts of the CSO discharge(s) (e.g., CWA section 305(b) reports, ambient survey data, fish kills, CWA section 303(d) lists of impaired waters).
  - Compliance history of the CSO owner, including performance and reliability of any existing CSO controls.
  - Current NPDES permit and NPDES permit application.
  - Facility planning information from the permittee that addresses CSOs.
- Technologies
  - Performance data (either from the manufacturer or from other applications) for various CSO technologies that may be employed, including equipment efficiency and reliability.
  - Cost information associated with both the installation, operation and maintenance of CSO technologies.
  - Reference materials on various types of CSO.

For more information on CSOs, see section 2.3.1.4 of this manual and the Combined Sewer Overflows Website <www.epa.gov/npdes/cso>.

9.2.4 Sanitary Sewer Overflows (SSOs)

EPA's *Report to Congress on the Impacts and Control of CSOs and SSOs*[29] <www.epa.gov/npdes/csossoreport2004> shows that NPDES permit requirements establishing clear reporting, recordkeeping and third party notification of overflows from municipal sewage collection systems, as well as clear requirements to properly operate and maintain the collection system, are critical to effective program implementation. NPDES authorities should be improving NPDES permit requirements for SSOs and sanitary sewer collection systems, which could lead to improved performance of municipal sanitary sewer collection systems and improved public notice for SSO events.

The NPDES regulations provide standard conditions that are to be in NPDES permits for POTWs as discussed in Chapter 10 of this manual. Standard conditions in a permit for a POTW apply to portions of the collection system for which the permittee has ownership or has operational control. When reissued, permits for POTW discharges should clarify how key standard permit conditions apply to SSOs and sanitary sewer collection systems. On August 20, 2007, EPA circulated a draft fact sheet, NPDES Permit Requirements for Municipal Sanitary Sewer Collection Systems and SSOs <www.epa.gov/npdes/pubs/sso_fact_sheet_model_permit_cond.pdf>, which explains the ways NPDES permitting authorities should be improving implementation of NPDES permit requirements to address SSOs and sanitary sewer collection systems.

The draft fact sheet indicates that clarifications should address the particular application of standard permit conditions to SSOs and municipal sanitary sewer collection systems as discussed below.

- **Immediate reporting.** Permits should clarify that the permittee is required to notify the NPDES authority of an overflow that could endanger health or the environment from portions of the collection system over which the permittee has ownership or operational control as soon as practicable but within 24 hours of the time the permittee becomes aware of the overflow. [See § 122.41(l)(6).]
- **Written reports**. Permits should clarify that the permittee is required to provide the NPDES authority a written report within 5 days of the time it became aware of any overflow that is subject to the immediate reporting provision. [See § 122.41(l)(6)(i).] In addition, permits should clarify that any overflow that is not immediately reported as indicated above, should be reported in the discharge monitoring report. [See § 122.41(l)(7).]
- **Third party notice.** Permits should establish a process for requiring the permittee or the NPDES authority to notify specified third parties of overflows that could endanger health because of a likelihood of human exposure; or unanticipated bypass and upset that exceeds any effluent limitation in the permit or that could endanger health because of a likelihood of human exposure. Permits should clarify that the permittee is required to develop, in consultation with appropriate authorities at the local, county, or state level (or any combination), a plan that describes how, under various overflow (and unanticipated bypass and upset) scenarios, the public, and other entities, would be notified of overflows that may endanger health. The plan should identify all overflows that would be reported, to whom they should be reported, the specific information that would be reported, a description of lines of communication, and the identities of responsible officials. [See § 122.41(l)(6).]
- **Recordkeeping**. Permits should clarify that the permittee is required to keep records of overflows. Clarified permit language for recordkeeping should require the permittee to retain the reports submitted to the NPDES authority and other appropriate reports that could include work orders associated with investigation of system problems related to an overflow, that describes the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow. [See § 122.41(j).]
- **Capacity, management, operation and maintenance programs.** Permits should clarify requirements for proper operation and maintenance of the collection system. [See §§ 122.41(d) and 122.41(e).]. This may include requiring the development and implementation of capacity, management, operation and maintenance (CMOM) programs. EPA's Region 4 has developed materials and guidance that can help a municipality with its CMOM program on the Management, Operation and Maintenance (MOM) Programs Project Website <www.epa.gov/region4/water/wpeb/momproject/>. The CMOM program may use a process for self-assessment and information management techniques for ongoing program improvement and may develop and implement emergency response procedures to overflows. In addition, the CMOM permit condition may specify appropriate documentation requirements, including the following:
  - CMOM program summary. Permittees may be required to develop a written summary of their CMOM programs, which would be available to the NPDES authority and public on request. The program summary would give an overview of the management program and summarize major implementation activities.

- Program audit report. Permittees may be required to conduct comprehensive audits of their programs during the permit cycle, and submit a copy of the audit report to the NPDES authority with the application for permit renewal. EPA's Sanitary Sewer Overflow Toolbox Website <www.epa.gov/npdes/sso/ssotoolbox> provides information on CMOM.
- System evaluation and capacity assurance plan. Capacity assurance refers to a process to identify, characterize and address hydraulic deficiencies in a sanitary sewer collection system. The permit may require the permittee to implement a program to assess the current capacity of the collection system and treatment facilities that they own or over which they have operational control to ensure that discharges from unauthorized locations do not occur. Where peak flow conditions contribute to an SSO discharge or to noncompliance at a treatment plant, the permittee may be required to prepare and implement a system evaluation and capacity assurance plan. In some instances, the permittee may already be under an enforceable obligation and schedule, in which case this permit provision would be redundant and, thus, unnecessary.

Section 2.3.1.5 of this manual and EPA's Sanitary Sewer Overflows Website <www.epa.gov/npdes/sso> provide more information on SSOs.

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[1] U.S. Environmental Protection Agency. 1999. *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*. EPA/833B-99/002. U.S. Environmental Protection Agency, Office of Wastewater Management, Washington, DC. <www.epa.gov/npdes/pubs/tre.pdf>.

[2] U.S. Environmental Protection Agency. 2001. Clarifications Regarding Toxicity Reduction and Identification Evaluations in the National Pollutant Discharge Elimination System Program. U.S. Environmental Protection Agency, Office of Wastewater Management and Office of Regulatory Enforcement, Washington, DC. <www.epa.gov/npdes/pubs/owmfinaltretie.pdf>.

[3] U.S. Environmental Protection Agency. 1989. *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs)*. EPA-600/2-88-070. U.S. Environmental Protection Agency, Water Engineering Research Laboratory, Cincinnati, OH. Publication available on NEPIS Website <www.epa.gov/nscep/> as document 600288070.

[4] U.S. Environmental Protection Agency. 1991. *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures. Second Edition*. EPA-600/6-91-003. U.S. Environmental Protection Agency, Office of Research and Development, Washington, DC. <www.epa.gov/npdes/pubs/owm0330.pdf>.

[5] U.S. Environmental Protection Agency. 1992. *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*. EPA-600/6-91-005F. U.S. Environmental Protection Agency, Environmental Research Laboratory, Duluth, MN. <www.epa.gov/npdes/pubs/owm0255.pdf>.

[6] U.S. Environmental Protection Agency. 1993. *Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity*. EPA-600/R-92-080. U.S. Environmental Protection Agency, Environmental Research Laboratory, Duluth, MN. <www.epa.gov/npdes/pubs/owm0343.pdf>.

[7] U.S. Environmental Protection Agency. 1993. *Methods for Aquatic Toxicity Identification Evaluations: Phase III Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*. EPA-600/R-92-081. U.S. Environmental Protection Agency, Environmental Research Laboratory, Duluth, MN. <www.epa.gov/npdes/pubs/owm0341.pdf>.

[8] U.S. Environmental Protection Agency. 1995. *Great Lakes Water Quality Initiative Technical Support Document for the Procedure to Determine Bioaccumulation Factors*. EPA-820/B-95-005. U.S. Environmental Protection Agency, Office of Science and Technology, Washington, DC. Publication available on NEPIS Website <www.epa.gov/nscep/> as document 820B95005.

[9] U.S. Environmental Protection Agency. 1993. *Guidance Manual for Developing Best Management Practices*. EPA 833-B-93-004. U.S. Environmental Protection Agency, Office of Water, Washington, DC. <www.epa.gov/npdes/pubs/owm0274.pdf>.

Endnotes for this chapter continued on the next page.

[10] King, Ephraim S. 1992. *Order Denying Modification Request With Respect to the Administrator's 1990 Decision in Star-Kist Caribe, Inc. (NPDES Appeal No. 88-5).* U.S. Environmental Protection Agency, Office of Water. Memorandum, May 27, 1992. <www.epa.gov/npdes/pubs/owm0121.pdf>.

[11] Hanlon, James. A. 2007. *Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits.* U.S. Environmental Protection Agency, Office of Wastewater Management. Memorandum, May 10, 2007. <www.epa.gov/npdes/pubs/memo_complianceschedules_may07.pdf>.

[12] U.S. Environmental Protection Agency. 1999. *Introduction to the National Pretreatment Program.* EPA-833-B-98-002. U.S. Environmental Protection Agency, Office of Wastewater Management, Washington, D.C. <www.epa.gov/npdes/pubs/final99.pdf>.

[13] U.S. Environmental Protection Agency. 1994. *A Plain English Guide to the EPA Part 503 Biosolids Rule.* EPA/832/R-93/003. U.S. Environmental Protection Agency, Office of Wastewater Management, Washington, DC. <www.epa.gov/owm/mtb/biosolids/503pe/>.

[14] U.S. Environmental Protection Agency. 1995. *A Guide to the Biosolids Risk Assessments for the EPA Part 503 Rule*. EPA/832-B-93-005. U.S. Environmental Protection Agency, Office of Wastewater Management, Washington, DC. <www.epa.gov/owm/mtb/biosolids/503rule/>.

[15] U.S. Environmental Protection Agency. 1995. *Part 503 Implementation Guidance*. EPA-833-R-95-001. U.S. Environmental Protection Agency. Office of Water, Washington, DC. <www.epa.gov/npdes/pubs/owm0237.pdf>.

[16] U.S. Environmental Protection Agency. 1994. *Land Application of Sewage Sludge—A Guide for Land Appliers on the Requirements of the Federal Standards for the Use or Disposal of Sewage Sludge in 40 CFR Part 503*. EPA-831/B-93-002b. U.S. Environmental Protection Agency, Office of Water, Washington, DC. <www.epa.gov/npdes/pubs/sludge.pdf>.

[17] U.S. Environmental Protection Agency. 1994. *Surface Disposal of Sewage Sludge—A Guide for Owner/Operators of Surface Disposal Facilities on the Monitoring, Record Keeping, and Reporting Requirements of the Federal Standards for the Use or Disposal of Sewage Sludge in 40 CFR Part 503*. EPA-831/B-93-002c. U.S. Environmental Protection Agency, Office of Water, Washington, DC. Publication available on NEPIS Website <www.epa.gov/nscep/> as document 831B93002c.

[18] U.S. Environmental Protection Agency. 1993. *Preparing Sewage Sludge for Land Application or Surface Disposal—A Guide for Preparers of Sewage Sludge on the Monitoring, Recordkeeping, and Reporting Requirements of the Federal Standards for the Use or Disposal of Sewage Sludge in 40 CFR Part 503*. EPA-831/B-93-002a. U.S. Environmental Protection Agency, Office of Water, Washington, DC. Publication available on NEPIS Website <www.epa.gov/nscep/> as document 831B93002a.

[19] U.S. Environmental Protection Agency. 1993. *Domestic Septage Regulatory Guidance—A Guide to the EPA 503 Rule*. EPA-832/B-92-005. U.S. Environmental Protection Agency, Office of Water, Washington, DC. <www.epa.gov/npdes/pubs/owm0026.pdf>.

[20] U.S. Environmental Protection Agency. 1992, Rev. 2003. *Control of Pathogens and Vector Attraction in Sewage Sludge*. EPA-625/R-92-013. U.S. Environmental Protection Agency, Office of Research and Development, Washington, DC. <www.epa.gov/nrmrl/pubs/625r92013/625R92013.pdf>.

[21] U.S. Environmental Protection Agency. 1995. *Combined Sewer Overflows–Guidance for Long-Term Control Plan*. EPA-832/B-95-002. U.S. Environmental Protection Agency, Office of Water, Washington, DC. <www.epa.gov/npdes/pubs/owm0272.pdf>.

[22] U.S. Environmental Protection Agency. 1995. *Combined Sewer Overflows–Guidance for Nine Minimum Controls*. EPA-832/B-95-003. U.S. Environmental Protection Agency, Office of Water, Washington, DC. <www.epa.gov/npdes/pubs/owm0030.pdf>.

[23] U.S. Environmental Protection Agency. 1995. *Combined Sewer Overflows–Guidance for Screening and Ranking*. EPA-832/B-95-004. U.S. Environmental Protection Agency, Office of Wastewater Management, Washington, DC. <www.epa.gov/npdes/cso>.

[24] U.S. Environmental Protection Agency. 1995. *Combined Sewer Overflows–Guidance for Monitoring and Modeling*. EPA-832/B-99-002. U.S. Environmental Protection Agency, Office of Water, Washington, DC. <www.epa.gov/npdes/pubs/sewer.pdf>.

[25] U.S. Environmental Protection Agency. 1995. *Combined Sewer Overflows–Guidance for Financial Capability Assessment and Schedule Development*. EPA-832/B-97-004. U.S. Environmental Protection Agency, Office of Water and Office of Wastewater Management, Washington DC. <www.epa.gov/npdes/pubs/csofc.pdf>.

[26] U.S. Environmental Protection Agency. 1995. *Combined Sewer Overflows–Guidance for Funding Options*. EPA-832/B-95-007. U.S. Environmental Protection Agency, Office of Water, Washington, DC. <www.epa.gov/npdes/pubs/owm0249.pdf>.

Endnotes for this chapter continued on the next page.

[27] U.S. Environmental Protection Agency. 1995. *Combined Sewer Overflows–Guidance for Permit Writers*. EPA-832/B-95-008. U.S. Environmental Protection Agency, Office of Water, Washington, DC. <www.epa.gov/npdes/cso>.

[28] U.S. Environmental Protection Agency. 2001. *Combined Sewer Overflows–Guidance: Coordinating Combined Sewer Overflow (CSO) Long-Term Planning with Water Quality Standards Reviews*. EPA-833/R-01-002. U.S. Environmental Protection Agency, Office of Water, Washington, DC. <www.epa.gov/npdes/pubs/wqs_guide_final.pdf>.

[29] U.S. Environmental Protection Agency. 2004. *Report to Congress on the Impacts and Control of CSOs and SSOs*. EPA 833-R-04-001. U.S. Environmental Protection Agency, Office of Water, Washington, DC. <www.epa.gov/npdes/csossoreport2004>.