For purposes of the first two criteria above, all combined sewer flows in the CSS remaining after implementation of the NMC should be required to receive the following minimum treatment:

- Primary clarification (or equivalent) for the removal of floatables and settleable solids
- Solids and floatables disposal
- Disinfection of effluent, if necessary, to meet WQS and protect human health, including removal of harmful disinfection chemical residuals, where necessary to meet WQS.

For example, if the permittee chooses to capture 85 percent by volume of the combined sewage collected on a system-wide annual basis during precipitation events, these flows should receive the treatment listed previously. The remaining 15 percent by volume should receive treatment to the greatest extent practicable, and this should be addressed in the operational plan. For example, in considering what type of treatment constitutes "to the greatest extent practicable," the permittee may evaluate whether attaching nets as end-of-pipe controls for solid and floatable materials in the remaining 15 percent is achievable within technical and financial constraints.

As stated in the CSO Control Policy, the controls selected under the presumption approach are only "presumed" to meet the water quality-based requirements of the CWA "...provided the permitting authority determines that such presumption is reasonable in light of the data and analysis conducted in the characterization, monitoring and modeling of the system and the consideration of sensitive areas...." Therefore, the selected CSO control program should be designed to allow for cost-effective expansion or cost-effective retrofitting if additional controls are subsequently determined to be necessary to meet WQS.

Demonstration Approach

As an alternative to the presumption approach, the permittee may choose to demonstrate that the selected CSO controls, when implemented, will be adequate to comply with the water

quality-based CWA requirements. An adequate demonstration should include each of the following:

- The planned control program is adequate to provide for attainment of WQS unless WQS cannot be attained as a result of natural background conditions or pollution sources other than CSOs.
- The CSOs remaining after implementation of the planned control program will not preclude the attainment of WQS. If WQS are not met in part because of natural background conditions or pollution sources other than CSOs, a total maximum daily load (TMDL), including a wasteload allocation for point sources, a load allocation for nonpoint sources, and a margin of safety, should be used to apportion pollutant loads to all source discharges.
- The planned control program will provide the maximum pollution reduction benefits reasonably attainable including the cost/performance considerations below.
- The planned control program is designed to allow cost-effective expansion or cost-effective retrofitting if additional controls are subsequently determined to be necessary to meet WQS.

It is important to note some additional considerations pertaining to use of the demonstration approach:

Natural Background Conditions: The decision as to whether natural background conditions preclude attainment of WQS is made during the WQS-setting process by the WQS authority. "Natural background conditions" of a receiving water body include both naturally occurring pollutant concentrations and channel and instream characteristics (e.g., mean stream width and depth, total volume, flow and water velocity, reaeration rates, seasonal changes, turbidity, suspended solids, temperature, sedimentation, and channel stability, obstructions, or changes).

Decisions regarding pollutant sources other than CSOs, on the other hand, are made during the development of wasteload allocations during the TMDL process. Other "pollution sources" to a receiving water body could include additional municipal or industrial point source

dischargers, including facilities or operations with storm water discharges, and nonpoint sources, such as agricultural and roadway runoff or drainage from abandoned mines.

TMDL: A TMDL is a technically sound and legally defensible tool used by a State to calculate and apportion to identified sources the allowable amounts of pollutants that may be discharged into the water body without exceeding numeric criteria or another quantifiable endpoint (e.g., temperature, riparian habitat). The use of a TMDL to apportion pollutant loads is illustrated by the following example:

> *A river segment at the lower end of a watershed is not meeting its designated use because of excessive concentration of one particular metal. Studies determined that sources of the metal include a metal finishing plant (300 kg/yr), a POTW (200 kg/yr), drainage from an abandoned mine (400 kg/yr), CSOs (500 kg/yr), and atmospheric deposition (5 kg/yr). The metal finishing plant is meeting its technology-based permit limits and little reduction in metal loadings can be anticipated without expensive upgrades. No further reductions in loadings can be achieved by the POTW without expensive upgrades. The mine drainage can be treated using BMPs to remove 75 percent of the metal (leaving 100 kg/yr). Design changes to the CSS will reduce the metal loadings to 50 kg/yr.*
>
> *Modeling analyses would then be conducted, and a margin of safety would be identified to accommodate potential new development or lack of certainty in the modeling analysis. If this modeling indicates that the resulting WQS for the particular metal can be achieved through implementation of those allocations (including the margin of safety), the analysis constitutes a TMDL. The TMDL should then be submitted to EPA for review under CWA Section 303(d).*

To help ensure that the demonstration by the permittee will be adequate, the permit writer should consider defining how the above criteria for "adequate demonstration" will be met. If the NPDES permitting authority has particular policies or procedures for evaluating water quality impacts, then the permit writer should place these requirements in the permit.

If natural background conditions or pollution sources other than CSOs are contributing to exceedances of WQS, then the permit writer should coordinate with the appropriate State authorities to determine whether a TMDL has been developed or is in the process of being developed for the watershed in which the permittee is located. Effluent limitations for the CSO outfall must be consistent with any WLA for that CSO prepared by the State and approved by EPA pursuant to 40 CFR 130.7. (See 40 CFR 122.44(d)(1)(vii)(B).) The permittee should demonstrate compliance with such WLA. In the absence of a TMDL for a pollutant or pollutants, the permit writer should coordinate with appropriate State water quality personnel to determine how a permittee will demonstrate compliance with WQS in light of the other source of pollutants.

Under the demonstration approach, the permit writer also should specify clearly what will constitute a reasonable effort by the permittee to demonstrate the maximum pollution reduction benefits reasonably attainable. Maximum pollution reduction that is "reasonably attainable" is the reduction that can be realized through the implementation of CSO controls determined to be feasible for the individual permittee, recognizing factors such as the nature of the individual CSS, the characteristics of the receiving water body, and other factors specific to the CSO and receiving water body.

To provide an adequate demonstration, the permittee should rely upon data collected both during monitoring done as part of NMC implementation and the characterization, monitoring, and modeling completed during the initial stages of LTCP development. Using these data, the permittee should establish that its selected CSO controls will satisfy each of the demonstration criteria.

3.5.1.5 Cost/Performance Considerations

The permit writer should require the permittee to develop and submit with the LTCP appropriate cost/performance curves for each of the CSO control alternatives being evaluated. The permittee develops the curves to demonstrate the relationship between the anticipated effectiveness of CSO control alternatives being considered and the cost of each. Consistent with

the CSO Control Policy, the permittee should be required to include an analysis discussing the point at which the increment of pollution reduction achieved in the receiving water diminishes compared to increased costs (i.e., a "knee of the curve" analysis). The permit writer may also want to require the permittee to evaluate the environmental benefits associated with the cost/ performance curves (e.g., the reduction in the number of days per year that the receiving water exceeds State bacteriological WQS). These analyses will ultimately help guide the selection of CSO controls by the permittee, NPDES permitting authority, WQS authority, and the public. EPA's guidance on LTCPs contains detailed information related to the development and review of cost/performance curves (EPA, 1995a).

3.5.1.6 Operational Plan

The Phase I permit should generally include a requirement that, once the appropriate CSO controls are selected, the permittee will revise the O&M plan developed as part of the NMC to include the selected CSO controls. The operational plan, as it incorporates the O&M program implemented as part of the NMC, will reduce the magnitude, frequency, and duration of CSOs. As described in the CSO Control Policy, the operational plan should be designed to maximize the removal of pollutants during and after each precipitation event using all available facilities within the collection and treatment system. The operational plan should also specify methods to ensure that any flows in excess of the volumes prescribed under the presumption approach (e.g., flows in excess of 85 percent by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis) receive treatment to the greatest extent practicable. EPA's guidance on LTCPs presents additional information on technical considerations in revising an O&M program (EPA, 1995a).

3.5.1.7 Maximization of Treatment at the POTW Treatment Plant

As discussed in Section 3.5.1.4 (Evaluation of Control Alternatives), the permittee should evaluate the maximization of treatment **at the POTW treatment plant** as part of the LTCP. As a component of the LTCP, maximization of treatment at the treatment plant is envisioned to include the use of existing primary excess wet weather flow capacity rather than the construction of additional treatment capacity. However, as part of evaluating whether the use of existing

primary capacity is an appropriate long-term alternative, the permittee should evaluate the feasibility of expanding either primary treatment capacity or both primary and secondary treatment capacities.

This component of the LTCP is distinguished from **maximization of flow to the POTW for treatment,** one of the NMC. The minimum control focuses on maximizing flow through the treatment plant so that the combined sewage flow can receive secondary treatment. Thus, this minimum control takes advantage of existing secondary treatment capacity.

As stated in the CSO Control Policy, maximization of treatment has two benefits:

- Treatment of increased flows during wet weather may enable the permittee to minimize overflows to sensitive areas
- Combined sewer flows would receive at least primary treatment.

In addition, use of existing primary treatment capacity at the treatment plant may prove to be a cost-effective alternative based on the cost/performance analyses of CSO control alternatives.

If a permittee determines during its LTCP development that utilization of excess primary treatment capacity is a feasible long-term CSO control, the permit writer will need to consider authorization of a CSO-related bypass for the permittee. Section 4.9.1 contains a detailed discussion of CSO-related bypass, which is likely to be addressed in the special conditions section of the Phase II permit.

3.5.1.8 Implementation Schedule

The permit should require the permittee to develop a schedule that will ensure timely implementation of the selected CSO controls. The proposed CSO implementation schedule should include construction schedules, financing plans, and milestones for any other permitting requirements (e.g., environmental reviews, siting of facilities, site acquisition, and Army Corps

of Engineers permits). These schedules may be phased depending on the following environmental and financial factors:

- Elimination of CSOs to sensitive areas as the highest priority
- Use impairment of receiving water
- Permittee's financial capability, including consideration of such factors as:
  - Median household income
  - Total annual wastewater and CSO control costs per household as a percent of median household income
  - Overall net debt as a percent of full market property value
  - Property tax revenues as a percent of full market property value
  - Property tax collection rate
  - Unemployment
  - Bond rating
- Grant and loan availability
- Previous and current residential, commercial, and industrial sewer user fees and rate structures
- Other viable funding mechanisms and sources of financing.

EPA's guidance documents on LTCPs (EPA, 1995a) and financial capability assessment (EPA, 1995e) contain information on scheduling and financial capability.

3.5.1.9 Post-Construction Compliance Monitoring Program

The post-construction compliance monitoring plan should be submitted by the permittee as part of the LTCP and reviewed by the permit writer (see Section 4.5.2). The permit writer should require that this plan detail the monitoring protocols and associated schedules (including the duration of the different monitoring activities). The monitoring protocols should include the necessary effluent and ambient monitoring and, where appropriate, biological assessments, whole effluent toxicity testing, and sediment sampling.

The monitoring plan should include ambient monitoring at locations appropriate to determine the full range of CSO impacts on the water body. The types of pollutants and parameters to be analyzed, which will depend on the WQS in the receiving water body, might include chemical (e.g., biochemical oxygen demand, total suspended solids, metals, oil and grease, herbicides, and pesticides), physical (e.g., temperature, turbidity, sedimentation), and biological (e.g., fish, benthic invertebrates, and zooplankton) parameters. The monitoring should be coordinated with any ongoing or planned State monitoring programs and programs of other permittees within the same watershed.

The permit writer should encourage the permittee to develop appropriate measures of success as part of its monitoring plan. The permittee's measures of success should be based on site-specific circumstances. Section 2.8 discusses potential measures of success for the CSO program.

Because construction of the selected CSO controls may extend over several permit terms, it might be appropriate to defer all or some requirements for development of the post-construction monitoring plan to later permits when construction of the CSO controls is complete. The permit writer may also consider requiring the permittee to conduct certain types of monitoring (e.g., for specified parameters) for the duration of the permit and other monitoring for a time period shorter than the permit term. EPA's guidance for monitoring and modeling presents information on the development of a post-construction compliance monitoring program (EPA, 1995d).

3.5.2 Schedule for Development of the Long-Term Control Plan

The permit writer should establish a deadline for completing and submitting the LTCP. According to the CSO Control Policy, this deadline should be within two years of the effective date of the Phase I permit or other implementation mechanism (such as an enforcement order). As stated in the CSO Control Policy, the permit writer may extend the two-year deadline on a case-by-case basis to account for site-specific factors that might complicate the planning process

for the permittee. A schedule for completion of the LTCP should be included in an appropriate enforceable mechanism.

The permit writer should also consider establishing a periodic reporting schedule that requires the permittee to report on progress related to LTCP development. These progress reports should describe progress made to date on each of the primary LTCP components, identify problems that might affect completion of the LTCP, and describe remedial measures to be taken when necessary. Depending on the specific circumstances and complexity of the CSS, a permit writer may require submission of progress reports on a regular basis (e.g., quarterly, biannually), customize the schedule to track critical path components (e.g., to ensure public participation occurs early in the process or that CSS characterization is proceeding), or require the submission of progress reports at the completion of each component of the LTCP.

In addition to progress reports, the permit writer should consider establishing interim deadlines and deliverables for various components of the LTCP to ensure that the permittee is making adequate progress during the term of the permit. Example permit language requiring the submission of interim deliverables is provided in Exhibit 3-5, presented earlier. The submission of interim deliverables prior to completion of the LTCP gives the permit writer and other key participants, such as WQS authorities, an opportunity to review critical components of the LTCP early in the planning process and avoid delays in issuing the Phase II permit due to the submission of inadequate information or analyses. Generally, EPA expects the permit writer to receive the following interim deliverables prior to completion of the LTCP:

- Public participation plan
- CSS characterization, monitoring, and modeling plan
- CSS characterization, monitoring, and modeling results, including identification of sensitive areas
- Identification of CSO control alternatives
- Evaluation of CSO control alternatives and cost/performance curves

- Operational plan
- Proposed implementation schedule, including supporting analyses
- Post-construction compliance monitoring plan.

Upon receipt of an interim deliverable, the permit writer should work closely with the permittee to ensure that any inadequacies or other issues are addressed prior to submittal of the final LTCP and issuance of the Phase II permit. Section 3.10 provides more detail on the responsibilities of the permit writer while reviewing interim deliverables.

The specific deadlines in the permit or other enforceable mechanism will depend on the circumstances of the CSS being permitted. For example, if a permit writer requires the development of a public participation plan, the permit writer should impose deadlines for completion of the plan and, after review by the NPDES permitting authority, for its implementation. In other cases, the information, such as CSS characterization data needed to identify sensitive areas, might not be available prior to issuance of the Phase I permit. Due to the importance of evaluating alternatives to protect sensitive areas, the permit writer should establish a deadline for the submission of information on sensitive areas early in the LTCP development process.

3.5.3 Considerations for Previous or Ongoing CSO Control Efforts and Small Combined Sewer Systems

Generally, the permit writer should consider two special factors when establishing the requirements to develop the LTCP: the permittee's previous efforts to control CSOs and the limited resources of small communities.

3.5.3.1 Recognition of Previous or Ongoing Efforts at Controlling CSOs

The permit writer will probably determine that municipalities are at different stages of CSO characterization and CSO control implementation. Some municipalities might have already

begun planning, monitoring, and implementing CSO controls in response to EPA's 1989 CSO Control Strategy and other initiatives.

The CSO Control Policy recommends that the permit writer consider, on a case-by-case basis, the following efforts that a permittee might have undertaken prior to Phase I permitting: 1) substantial completion of construction of CSO controls that appear to provide for attainment of WQS, 2) CSO control programs substantially developed or implemented pursuant to existing permits or enforcement orders, and 3) previous construction of CSO control facilities designed to provide for attainment of WQS but where WQS have not been attained due to remaining CSOs.

If the permit writer has determined that the permittee has "substantially completed" construction of projects designed to provide for attainment of WQS, the permit conditions for LTCP development may be modified to reflect these efforts. The permit writer may choose not to require the initial planning and construction provisions of the LTCP. The permittee, however, should be required to complete the relevant components of the LTCP that might not have been addressed by the permittee's previous efforts or that represent ongoing commitments, including development of an O&M program and post-construction compliance monitoring plan. If subsequent monitoring shows that the WQS are **not** being attained and CSOs continue to contribute to the impairment of designated uses or exceedances of water quality criteria, notwithstanding efforts to coordinate with WQS authorities, then an enforceable order should require a revised/amended LTCP, and the permit should be modified as appropriate.

If the permittee has substantially developed or is implementing a CSO control program pursuant to an existing permit or enforcement order but has not completed construction of the selected CSO controls, and the control program is expected to provide for attainment of WQS and is consistent with the objectives of the CSO Control Policy, the permit requirements should be modified to require evaluation of sensitive areas and financial capabilities, as well as development of a post-construction monitoring plan.

If the permittee has previously constructed CSO facilities in an effort to attain WQS but has failed to meet the applicable standards because remaining CSOs are not sufficiently controlled, the permit writer may consider these previous efforts when identifying further CSO control planning activities. The previous construction of CSO control facilities, although not yet attaining WQS, may mitigate the need to complete each step in the LTCP. In some cases, a permit writer may need to require the development of a complete, although abbreviated, LTCP (e.g., further CSS characterization might be needed or other alternative CSO controls identified and costs and funding mechanisms developed).

3.5.3.2 Small System Considerations

The CSO Control Policy acknowledges that portions of the LTCP may prove to be difficult to implement for small municipalities and recommends that for CSSs in jurisdictions with populations under 75,000, the permit requirement to develop the LTCP should reflect the capabilities of such "small" jurisdictions. The permit writer should ensure that the permittee has gathered enough information to implement effective CSO controls. The permit requirements for developing a plan should include consideration of sensitive areas, public participation in the selection of the CSO controls, and a post-construction compliance monitoring program sufficient to determine whether WQS are attained. Thus, for jurisdictions with populations less than 75,000, the permit writer may use discretion in deciding not to include specific requirements for the following components of the LTCP: system characterization, monitoring and modeling; evaluation and selection of alternatives (including cost/performance analyses); operational plan; maximization of treatment at the POTW treatment plant; and implementation schedule. Overall, the permit writer should be aware that a delicate balance needs to be achieved between resources spent on monitoring and modeling and resources spent on implementation of controls.

3.6 EFFLUENT LIMITATIONS

The CWA requires that technology-based effluent limitations be established for all point source discharges. In addition, a point source may also be subject to more stringent limitations, including those necessary to meet WQS. During Phase I permitting, the permit writer should establish technology-based requirements and any other limitations necessary to meet WQS in the

form of narrative requirements since he or she will probably not have sufficient data or information to establish numeric effluent limitations. During subsequent CSO permitting phases, as data and information related to the CSOs and CSO controls implemented by permittees improve, it may be appropriate to develop numeric effluent limitations.

3.6.1 Technology-Based Requirements

Section 301 of the CWA requires effluent reductions based on various degrees of control technology for all discharges of pollutants. For existing nonmunicipal dischargers, these technology-based effluent limitations must reflect BAT/BCT for toxic, conventional, and nonconventional pollutants.

NPDES regulations at 40 CFR 122.44(a) require the establishment of technology-based effluent limitations for pollutants of concern discharged by point sources that will be regulated under an NPDES permit. Although CSOs are subject to technology-based requirements, they are not subject to secondary treatment standards applicable to POTWs. According to 40 CFR 125.3(c), in the absence of national effluent guidelines and standards for point source discharges, technology-based effluent limitations are to be established on a case-by-case basis using the permit writer's BPJ.

The CSO Control Policy recommends the use of the NMC, in the form of best management practices (BMPs), as the technology-based requirements for CSOs. The use of BMPs in lieu of numeric technology-based effluent limitations is allowed under 40 CFR 122.44(k)(2) where it is infeasible to calculate a numeric limit. BMPs are considered particularly applicable for CSOs because the types, concentrations, and quantities of pollutants expected from a precipitation event are generally unpredictable.

As stated in the CSO Control Policy, Phase I permits should at least require the permittee to "immediately implement BAT/BCT, which includes the nine minimum controls, as determined on a BPJ basis by the permitting authority." Thus, where the permit writer determines on a BPJ basis that the implementation of the NMC in Phase I and Phase II permits meets the technology-

based requirements, he or she should not need to develop numeric technology-based effluent limitations. Exhibit 3-3, presented previously, provides example permit language requiring implementation of the NMC.

If the permit writer determines that numeric technology-based effluent limitations are warranted for CSOs, EPA's *Training Manual for NPDES Permit Writers* (EPA, 1993) should be consulted for guidance on developing limits on a case-by-case basis using BPJ. Although this EPA manual is intended to address continuous discharges, it may provide useful information for wet weather flows.

3.6.2 Water Quality-Based Requirements

Section 301(b)(1)(C) of the CWA and NPDES regulations at 40 CFR 122.44(d) require that NPDES permits contain water quality-based effluent limitations for all discharges that cause, contribute to, or have the potential to cause an exceedance of a numeric or narrative water quality standard.

EPA expects that it will be extremely difficult in the early stages of permitting to determine whether numeric water quality-based effluent limitations are necessary. This is due to many factors including the lack of point source and ambient data for conventional, toxic, and nonconventional pollutants of concern. Thus, it is likely to be very difficult or inappropriate for the permit writer, at this point, to "back-calculate" effluent limits based on WQS.

As described in the CSO Control Policy, Phase I permits should at least require that the permittee immediately comply with applicable WQS expressed in the form of a narrative limitation. Such a requirement to comply with narrative WQS is justified for CSOs if, prior to the development of the LTCP, sufficient data are not available to evaluate the need for numeric water quality-based effluent limits.

Exhibit 3-8 provides example permit language requiring compliance with narrative WQS. The specific narrative standards a permit writer should include as permit conditions will depend

on, and should be consistent with, State WQS. All State WQS have narrative criteria that address aesthetic qualities (e.g., all waters shall be free from discharges that settle to form objectionable deposits). Although State narrative standards can be incorporated into the permit by reference, EPA recommends that the permit writer include the specific narrative language in the permit to ensure that the permittee understands exactly what standards it must meet.

Exhibit 3-8. Example Permit Language for Requiring Compliance with Narrative Water Quality Standards

I. Effluent Limits

B. Water quality-based requirements for CSOs.
The permittee shall not discharge any pollutant at a level that causes or contributes to an in-stream excursion above numeric or narrative criteria developed and adopted as part of **[insert State name]** water quality standards.

Site-Specific Language:

1. *The permittee shall not discharge any floating debris, oil, grease, scum, foam, or other objectionable materials that may result in amounts sufficient to be unsightly or otherwise objectionable or to constitute a nuisance under State law.*

2. *The permittee shall not discharge settleable solids, sediments, sludge deposits, or suspended particles that may coat or cover submerged surfaces.*

3. *The permittee shall not discharge any pollutants that may impart undesirable odors, tastes, or colors to the receiving water body or to the aquatic life found therein, may endanger public health, or may result in the dominance of nuisance species.*

3.7 MONITORING

Phase I permit monitoring requirements should address both NMC implementation and LTCP development activities. Under the NMC, the CSO Control Policy recommends monitoring to characterize CSO impacts and to determine the efficacy of CSO controls. The objectives of such monitoring include the following:

- To map the drainage area for the CSS
- To identify all CSO outfall locations and develop a record of overflow occurrences (i.e., total number, frequency, and duration)

- To compile existing information about the receiving water (e.g., existing uses and water quality criteria) and whether WQS are currently being attained in the water body

- To compile existing information on water quality impacts associated with CSOs (e.g., beach closing).

The information collected as part of this control should be used to establish baseline conditions both prior to and subsequent to implementation of the NMC. Exhibit 3-3, given previously, presents example permit language for the NMC monitoring requirement.

The second aspect of Phase I monitoring is CSS characterization as part of LTCP development. The objectives of such monitoring include the following:

- To obtain a thorough understanding of the CSS, including its response to various precipitation events

- To evaluate the impacts of CSOs on the receiving water

- To assess the effectiveness of various CSO control alternatives in reducing the impacts of CSOs on the receiving water.

Exhibit 3-5, given previously, contains example permit language for the monitoring requirements associated with LTCP development. During LTCP development, the permittee should prepare a monitoring and modeling plan to be reviewed by the NPDES permitting authority and other members of the review team (see Section 3.10) before conducting monitoring and modeling activities. This review should ensure that adequate but not unnecessary information and data are collected to support LTCP development and the review and revision, if appropriate, of WQS to reflect site-specific wet weather conditions.

The permit writer and permittee should not view monitoring conducted as part of NMC implementation and LTCP development as independent activities, but rather as related components in the CSO control planning process. In many cases, the permittee will be conducting NMC implementation and LTCP development concurrently. Thus, where monitoring objectives overlap, the permit writer should coordinate the monitoring requirements into one

comprehensive permit condition. For example, the permit writer could put all monitoring requirements into one section of the permit.

In some cases, monitoring associated with the NMC and the LTCP might require special characterization studies (e.g., if existing site-specific information implies that CSOs are causing substantial water quality impacts). These studies might include the following:

- Sediment studies
- Whole effluent toxicity testing
- Biological assessment.

This type of monitoring can be required as a short-term study special condition. Typically, such a study is required in response to specific information indicating that the CSO is impairing the designated use or water quality. The permit writer might want to develop permit conditions that require 1) a separate monitoring plan to be developed for each special study, 2) the plan be submitted for review prior to performing the monitoring, and 3) the final report to be submitted to the NPDES permitting authority within a specified time after study completion.

The permit writer should review the monitoring plans carefully to ensure that the CSO information collected can be correlated with water quality impacts; otherwise, the studies might not provide conclusive evidence of the cause of impact. Other studies might be needed in conjunction with these special studies. For example, sediment studies might not be meaningful without a contaminant transport modeling study, and a bioassay might not provide meaningful results without toxicity data and CSO data. The permittee should include appropriate quality assurance/quality control procedures as part of these studies to ensure that the results can be verified. EPA's guidance on monitoring and modeling contains additional information on these types of studies (EPA, 1995d).

3.8 REPORTING

Reporting requirements related to CSO controls that should be included in the Phase I permit fall into two categories: 1) documentation of NMC implementation and 2) LTCP development. Exhibit 3-4, presented previously, provides example permit language, and Section 3.4.2 contains a detailed discussion of the recommended reporting requirements associated with the NMC. Section 3.5 discusses the recommended LTCP interim deliverables, as well as the requirement to submit the completed LTCP, and provides example permit language.

In addition to the CSO control-related reporting mentioned above, permittees should be required to periodically report the results from monitoring requirements established in the permit, including any special monitoring studies.

3.9 SPECIAL CONDITIONS

This section discusses two special conditions. The first, CSO-related bypass, should be used in certain limited circumstances to authorize bypasses under 40 CFR 122.41(m). The second special condition, a reopener clause, should appear in every permit covering CSOs.

3.9.1 CSO-Related Bypass

Some POTW treatment plants might have existing primary treatment capacity that significantly exceeds secondary treatment capacity. The CSO Control Policy recognizes that 40 CFR 122.41(m) can be interpreted to allow an advance authorization of a CSO-related bypass in the NPDES permit to take advantage of the opportunity to provide at least primary treatment of most or all wet weather flows. The CSO Control Policy envisions that the permittee would evaluate the feasibility of this as part of the LTCP; for this reason, this special condition is most likely to occur in the Phase II permit. If the permit writer believes that a CSO-related bypass might be an effective CSO control available for use in the Phase I permit, however, he or she should require the permittee to submit the necessary information as part of the permit application. Section 4.9.1 contains a detailed discussion of CSO-related bypass.

3.9.2 Permit Reopener Clause

As with any NPDES permit, the permit writer should include an appropriate reopener clause. Exhibit 3-9 provides an example reopener clause generally appropriate for a Phase I permit. This reopener language allows the permit to be modified or revoked and reissued to incorporate requirements to implement selected CSO controls in advance of the normal permit reissuance. This will assist the permit writer in accelerating the implementation of selected CSO controls. The permit writer should evaluate this language carefully to ensure that it is appropriate for the permittee. The permit writer might decide that the generic reopener clause already included in NPDES permits is sufficiently broad to address CSOs.

Exhibit 3-9. Example Permit Language for a Phase I Reopener Clause

This permit may be modified or revoked and reissued, as provided pursuant to 40 CFR 122.62 and 124.5, for the following reasons:

- To include new or revised conditions developed to comply with any State or Federal law or regulation that addresses CSOs that is adopted or promulgated subsequent to the effective date of this permit
- To include new or revised conditions if new information, not available at the time of permit issuance, indicates that CSO controls imposed under the permit have failed to ensure the attainment of State water quality standards
- To include new or revised conditions based on new information generated from the long-term control plan.

In addition, this permit may be modified or revoked and reissued for any reason specified in 40 CFR 122.62.

3.10 ADDITIONAL ACTIVITIES DURING PHASE I PERMITTING

The permit writer should be responsible for ensuring the receipt and coordinating the review of NMC documentation and all interim CSO-related documents submitted as part of the LTCP development. This will enable the permit writer to begin evaluating the permittee's progress in implementing the NMC and developing an LTCP. The early review during Phase I will assist the permit writer in identifying and resolving issues prior to the development of the Phase II permit. If the review of progress made by the permittee during the Phase I permit term is not performed until just prior to the development of the Phase II permit, significant delays

might occur, particularly if a permit writer detects extensive deficiencies in the progress made by the permittee.

To ensure that the NMC documentation and all LTCP deliverables are reviewed properly and to facilitate the expeditious review of these submissions, the permit writer should coordinate among appropriate representatives of the NPDES permitting authority, and should establish a review team made up of NPDES permitting and enforcement personnel, State WQS personnel, and State watershed personnel (see Section 4.5.1). The permit writer should identify team members and coordinate with them to review the NMC documentation and LTCP interim deliverables. The review team may also be useful in assisting the permit writer in developing permit conditions.