INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Title: Capacity Analysis Evaluation of Combined Sewer Overflow (CSO) Communities
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Dates Revised: None
Other Policies Repealed or Amended: None
Brief Description of Subject Matter: The purpose of this policy is to outline the procedure for a Capacity Analysis Evaluation of a designated CSO Community that may result in the issuance of a Sewer Ban Early Warning notification.
Citations Affected: 327 IAC 4

Disclaimer: This nonrule policy document (NPD) is intended solely as guidance and does not have the effect of law or represent formal Indiana Department of Environmental Management (IDEM) decisions or final actions. This NPD shall be used in conjunction with applicable laws. It does not replace applicable laws, and, if it conflicts with these laws, the laws shall control. This NPD may be put into effect by IDEM 30 days after presentation to the appropriate board. Under IC 13-14-11.5, this policy will be available for public inspection for at least 45 days prior to presentation to the appropriate board. If the nonrule policy is presented to more than one board, it will be effective 30 days after presentation to the last board. IDEM will submit the policy to the Indiana Register for publication. Revisions to the policy will follow the same procedure of presentation to the board and publication.

1. PURPOSE

The purpose of this policy is to outline the procedure for a Capacity Analysis Evaluation of a designated CSO community that may result in the issuance of a Sewer Ban Early Warning notification.

All wastewater treatment plants are designed to treat a certain quantity of flow and organic loading. Wastewater flows or organic loads, or both, that exceed design criteria can be difficult to treat. Inadequately treated wastewater degrades water quality in the receiving stream and can be a public health hazard. 327 IAC 4, Wastewater Treatment Facilities; Overload Condition, is the regulatory basis for the state's Sewer Connection Ban Early Warning System.

2. SCOPE

This policy affects all CSO communities and is for all staff in the Office of Water Quality (OWQ) who analyze wastewater treatment facilities for hydraulic or organic, or both, overload conditions and write Sewer Ban Early Warning Notifications.

3. SUMMARY

Capacity analysis of a CSO community must evaluate influent and effluent flow, precipitation data, and Carbonaceous Biochemical Oxygen Demand (CBOD) loading by utilizing specific procedures that separate the wet and dry weather flows in order to determine whether the community should receive an early warning letter for a potential sewer ban. In addition, the community's long-term control plans (LTCP) and compliance with the LTCP will be factored into the determination on whether or not an early warning letter for potential sewer ban is issued.

4. DEFINITIONS

The following definitions apply to the defined term as used in this NPD:

"Bypasses": Flows that bypass part of the treatment process in a wastewater treatment plant. Bypassed wastewater may or may not be combined with treated wastewater at the main outfall. Wet weather bypasses that occur in CSO communities may be permissible if the intent is to maximize wastewater treatment plant flow and minimize CSOs during precipitation events. Treatment plant bypasses are not permitted in non-CSO communities. Bypassed wastewater is reported on State Form 48373 (3R/10-05) and faxed to IDEM OWQ compliance evaluation section within 24 hours of occurrence.

"Carbonaceous Biochemical Oxygen Demand (CBOD) Concentration": The concentration (amount) of carbon-containing organic material found in effluents. This parameter is an indicator of the impact of the organic matter on receiving waters. It measures the amount of dissolved oxygen required by microorganisms to decompose this organic material.

"Combined Sewer Overflows (CSOs)": Overflows from permitted outfalls in sewers designed and constructed to transport both storm water and raw sewage.

"CSO community": A community that has a wastewater collection system designed and constructed to convey sanitary wastewaters and storm water through a single-pipe system to a publicly owned treatment works.
"Dry Weather Overflows": IDEM OWQ Compliance Evaluation Section considers dry weather overflows from combined sewer systems to be overflows that occur four or more days after a precipitation event.
"Exceedance": A measurement during the monitoring period that exceeds the maximum (or minimum, or both, as appropriate) permit requirement for a wastewater parameter such as CBOD, total suspended solids (TSS), ammonia, dissolved oxygen (DO), or TRC, etc.
"Hydraulic Overload": Wastewater plant flows that exceed the average hydraulic design (MGD) capacity of the wastewater plant. This definition can also include wet weather flows that cause wastewater plant bypassing and unpermitted sewer overflows.
"Infiltration": Groundwater that infiltrates (seeps) into sewers through cracks, bad connections, or other defects in the sewer laterals and pipes.
"Inflow": Storm water that flows into sewers through direct connections, such as storm drains and open cleanouts, or defects, such as holes in the sewer pipe.
"Long-Term Control Plan (LTCP)": A Long-Term Control Plan is a plan for control of CSOs that requires the permittee to develop and submit an approvable plan that will ultimately result in compliance with the Indiana water quality standards and Clean Water Act requirements. The planning approach consists of three major steps: system characterization, development and evaluation of alternatives, and selection and implementation of the controls.
"MGD": Million gallons per day.
"National Pollution Discharge Elimination System (NPDES) Discharge Permit": A legally enforceable agreement between the regulatory agency (U.S. EPA/state) and the direct dischargers on the quality of effluent released into receiving waters. It sets limits on the pollutants in the direct dischargers' effluent. NPDES Discharge Permits for CSO communities in Indiana contain an attachment labeled "Attachment A". Attachment A contains the permitted CSO outfalls and their locations. Attachment A also contains requirements for monitoring and reporting of overflows.
"Outfall": The point source discharge that is the end of the pipe.
"Organic Overload": Carbonaceous Biological Oxygen Demand (CBOD) waste that exceeds the aeration capacities of the wastewater plant.
"Sanitary Sewers": Sewers that are designed to carry wastewater from residences, commercial establishments, and industries to a wastewater treatment plant.
"Sanitary Sewer Overflows (SSOs)": Unpermitted sanitary sewer system overflows containing raw sewage. SSOs are reported on State Form 48373 (3R/10-05) "Bypass/Overflow Incident Report" and faxed to IDEM OWQ compliance evaluation section within 24 hours of occurrence. Unpermitted SSOs can also occur in communities that have partially combined sewer systems.

5. ROLES

Capacity analysis evaluations for possible hydraulic or organic, or both, overload are conducted in the OWQ compliance evaluation section in coordination with OWQ's wet weather section. Requests for capacity analysis frequently come from OWQ municipal permit writers, OWQ facility construction permit reviewers, wastewater plant inspectors, and IDEM enforcement staff. Requests for capacity analysis are based upon a review of monthly reports and the wastewater inspector's observations.

6. POLICY

6.A.

Procedure for Capacity Analysis:

• Retrieve the NPDES permit file from the Agency Central File Room. Review the NPDES permit, inspection summaries, monthly discharge monitoring report/monthly report of operation (DMR/MRO) reports, and recent correspondence, especially violation letters. Contact the OWQ permits section or OWQ wet weather section, or both, if the NPDES permit is missing. Check to see if the NPDES permit has combined sewer outfalls (CSOs) in Attachment A. Check for SSOs and wastewater plant bypasses.
• Review any Agreed Orders and notices of violations (NOVs) that have been prepared by the IDEM enforcement staff for the facility being evaluated. They are posted on the IDEM website. Agreed Orders and NOVs provide important information regarding past problems and enforcement actions on the wastewater plant that is being evaluated for capacity problems.
• Coordinate with the wet weather section to evaluate the impact a community's LTCP, including compliance with the LTCP, has on the capacity analysis.
• Access the electronic database for unpermitted wastewater plant bypasses and SSOs that is maintained by the OWQ compliance evaluation section. Retrieve a summary for the community that shows all unpermitted

bypasses and SSOs within the last two years.
• Access the electronic ICIS database that is maintained by the U.S. EPA. Retrieve summaries of NPDES violations, wastewater plant flows, and inspection reports for the past two years.
• Review the facility design summary that was prepared by the OWQ facilities construction section for the wastewater plant being evaluated. Wastewater plants are designed to treat wastewater, based upon average design flow and CBOD load. Facility design summaries contain specific information regarding the treatment plant processes and hydraulic/organic design values.
• Obtain the average hydraulic design flow (MGD) and CBOD design (lb/day) load from the NPDES permit and facility design summary.

The following specific review procedures are for capacity analysis on CSO communities:
Step 1.

Analyze wastewater plant hydraulic capacity, based upon dry weather flows. CSO communities are required, by their NPDES permits, to maximize wastewater plant flows in wet weather in order to minimize overflows through the CSO outfalls. That is the reason only dry weather flows are analyzed in CSO communities.

Step 2.

Enter daily wastewater flows in MGD, precipitation data and CBOD (mg/L) concentrations, from the monthly reports of operation (MROs), into a spreadsheet that separates the wet and dry weather flows (those flows occurring four or more days after a precipitation event). Combined Sewer Discharge Monitoring Reports (CSO DMRs) can be an alternate source of information for wastewater plant flows and precipitation. The spreadsheet calculates average annual dry weather flows in MGD, along with average CBOD loadings in lb/day and compares them to the design values.

Step 3.

Review the CSO DMRs for the facility and check for excessive or dry weather, or both, overflows that persist four or more days after a precipitation event and are not related to snow melt. Excessive overflows that occur for days or weeks, or both, at a CSO outfall can be an indication of a problem, such as an unknown source of inflow that suddenly appeared, possibly a water main break, etc.

Review Note: Snow melt in cold weather months can occur days or weeks after the actual precipitation event and cause overflows at CSO outfalls. The CSO DMR report should state snow melt in the precipitation column.

Review Note: Wastewater plant bypassing, following the primary tank, may be permitted by the NPDES permit in a CSO community if the intent is to maximize wastewater plant flow in wet weather and minimize overflows at the CSO outfalls.

Review Note: Some LTCPs will have storage/bleed-back systems (for full treatment) as part of a community's remedial plan to address CSO overflows. As such, there may be times when the bleed-back from these systems may exceed the four days discussed in Step 2 and Step 3 above.

6.B.
Early Warning Decision:

• If the dry weather flow or the organic loading, or both, are found to be equal to or greater than 90% of the design capacity or if excessive dry weather overflows or SSOs, or both, are occurring and after considering the impact of a community's compliance with their LTCP, an early warning notice will be prepared and issued to the community's principal executive officer.

7. REFERENCES

327 IAC 4

8. SIGNATURES

Thomas W. Easterly, Commissioner Indiana Department of Environmental Management	Date
Bruno L. Pigott, Assistant Commissioner	Date

Office of Water Quality

This policy is consistent with agency requirements.

Quality Assurance Program, Planning and Assessment
Indiana Department of Environmental Management

Date

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