# U.S. Environmental Protection Agency - October 2007
# FY08 – FY10 Compliance and Enforcement National Priority: Clean Water Act, Wet Weather, Concentrated Animal Feeding Operations (CAFOs)

**What is the Environmental Problem?**

CAFOs have been regulated under the National Pollutant Discharge Elimination System (NPDES) program since the mid-1970s. In February 2003, EPA promulgated new CAFO regulations to update the NPDES program and prevent environmental harm from these operations through better management of animal waste. The 2003 regulation required all CAFOs with a potential to discharge to be covered by NPDES permits. Because of the 2005 decision by the U.S. Court of Appeals for the Second Circuit in *Waterkeeper v. EPA* (399 F.3d 486), EPA requires only CAFOs that discharge or propose to discharge to apply for a NPDES permit. EPA is also revising its CAFO regulations regarding the development of nutrient management plans to address changes mandated by the *Waterkeeper* decision.

An ongoing trend toward fewer but larger farm operations, together with greater emphasis on intensive animal production methods, increases environmental and public health risks by concentrating large volumes of animal waste within geographic areas. In addition, many large operations often do not have sufficient cropland to effectively utilize the manure they generate as fertilizer. The U.S. Department of Agriculture estimates that operations that confine livestock and poultry animals generate about 500 million tons of manure annually – three times EPA's estimate of 150 million tons of human sanitary waste produced annually in the U.S. Under Section 305(b) of the CWA, states have consistently identified agricultural sources - including CAFOs - as a leading contributor of water quality impairment in state-assessed surface waters.

Pollutants associated with animal waste primarily include nutrients -- mainly nitrogen and phosphorus -- but animal waste may also include organic matter, solids, pathogens, pesticides, antibiotics, hormones, salts and various trace elements (including metals). If manure and wastewater are not properly managed, pollutants can be released into the environment through discharges from animal confinement areas, manure storage areas, and/or from cropland where manure is applied as fertilizer.

**Why Are We Addressing this Problem?**

Inadequate manure management and the resulting risks, a pattern of CWA noncompliance in the industry, and the need for EPA leadership in implementing the federal CAFO regulations contributed to OECA's decision to continue CAFOs as a CWA national priority. The 2005 *Waterkeeper* decision that eliminated the requirement that virtually all CAFOs obtain permits, resulted in uncertainty in the regulated community regarding the direction of the CAFO program. EPA's strategy helps to clarify that the CWA and the federal regulations prohibit discharges from a CAFO, even one that is unplanned or accidental, unless it is authorized by the terms of a permit.

Any facility that meets the regulatory definition of a "CAFO" as it was defined in the 1976 rule and discharges, needs a NPDES permit now.

Nationwide, EPA's Office of Water estimates that there are approximately 19,000 large and medium CAFOs, and roughly 8,300 or 43 percent of these operations currently have NPDES permits. EPA will lead by example and focus on identifying and addressing those facilities most likely to need NPDES permits based on provisions of the federal CAFO regulations that have been on the books since the 1970s.

**How will the Problem be Addressed?**

Because it is impossible for EPA to identify and address all CAFOs that have unauthorized discharges and need permits in a timely manner, strategically targeted inspections and enforcement actions and publicized enforcement results will be utilized. Federal inspections and enforcement actions will focus primarily on existing large and medium CAFOs identified as discharging without a permit to maximize deterrence against noncompliance with the permitting requirement of the CWA and to improve the technical capability of EPA Regions and, ultimately, states to identify and address CWA violations at CAFOs. In selecting which facilities to investigate, EPA will consider factors such as: size and type of operation, proximity to waters of the U.S., proximity to impaired waters or priority watersheds, citizen complaints and manure spill data, environmental harm, compliance history, and environmental justice.

EPA will continue to refine its understanding of the CAFO universe, improve targeting of compliance and enforcement activities to increase CAFO NPDES permit coverage, and assess and communicate the effectiveness of its actions. EPA believes that ensuring that CAFOs that need permits obtain them is critical to improving manure management and addressing the environmental problems associated with this industry.

Through this strategy, EPA will consider the critical role of individual state commitments to CAFO permitting in achieving a level playing field. EPA will target compliance and enforcement activities in states with lower levels of CAFO permit coverage.

Although not the emphasis of EPA's strategy, some federal actions will address CAFOs that have NPDES permits and are in violation of their permit requirements. These actions also support the overall theme of EPA's strategy that appropriate CAFO permit coverage resulting in proper manure management is important.

**Highlights from the FY 2005-2007 Planning Cycle**

EPA has established an internal national CAFO work group to provide a forum for discussing CAFO compliance and enforcement issues and identifying training needs. OECA has provided and continues to develop additional technical training to support EPA Regions in the development of CAFO CWA cases.

In fiscal year 2006, nine out of ten EPA Regions either met or significantly exceeded their CWA commitments to conduct federal CAFO inspections and to conduct joint CAFO inspections with their states, resulting in 262 federal CAFO inspections conducted and 130 CAFO joint and/or oversight inspections conducted. EPA also concluded 56 enforcement actions against CAFOs for CWA violations that year, with a total value of over $400,000 in administrative penalties and an estimated 12 million pounds of pollutants reduced via those actions.

A number of EPA Regions are using a variety of sampling and modeling tools to develop cases against existing CAFOs with unauthorized discharges. Recent EPA enforcement actions reflect the high level of sophistication at which some Regions are performing in conducting CAFO compliance investigations.

# U.S. Environmental Protection Agency - October 2007 FY08 – FY10 Compliance and Enforcement National Priority: Clean Water Act, Wet Weather, Combined Sewer Overflows

**What is the Environmental Problem?**

Combined sewer systems (CSSs) are designed to collect storm water runoff, domestic sewage, and industrial wastewater in the same pipe and transport it to a sewage treatment plant, where it is treated and then discharged to a water body. During periods of rainfall or snowmelt, however, the wastewater volume in a combined sewer system can exceed the capacity of the sewer system or treatment plant. When the capacity of the system or the treatment plant is exceeded, the excess wastewater overflows directly into nearby streams, rivers, or other water bodies, typically causing the receiving water not to meet water quality standards. Combined Sewer Overflows (CSOs) are primarily caused by wet weather events, when the combined volume of wastewater and storm water entering the system exceeds the capacity of the CSS or treatment plant. Overflow frequency and volume varies from system to system and from outfall to outfall within a single CSS. Discharges from a CSS during dry weather, referred to as dry weather overflows, are prohibited under the NPDES program.

Annual untreated discharges from CSOs are estimated to be 850 billion gallons. When full implementation of the measures described in EPA's 1994 Combined Sewer Overflow Control Policy is achieved, the Office of Water estimates that approximately 160 billion gallons of untreated CSOs would be discharged annually from CSSs. This is a volume reduction of approximately 80%. Typical pollutants found in CSOs include total suspended solids (TSS), metals, bacteria, viruses, nutrients, oxygen-demanding compounds and other pollutants washed from city streets and parking lots. CSO impacts include adverse human health effects often due to recreational exposure, (e.g., gastrointestinal illness), beach closures, shellfish bed closures, toxicity for aquatic life, and aesthetic impairment.

There are approximately 836 permits for an estimated 772 CSS communities. Affected communities are located in 32 states (including the District of Columbia), primarily concentrated in the Northeast and Midwest, and serve approximately 46 million people. Of these systems, 181 are located in population centers greater than or equal to 50,000 (representing approximately 22% of the total number of CSO permits).

**Why Are We Addressing this Problem?**

EPA's *1994 Combined Sewer Overflow Control Policy* (59 FR 18688) (CSO Policy) provides a comprehensive national strategy to ensure that CSO communities, NPDES permit authorities, water quality standards authorities, EPA and the public engage in a coordinated planning effort to achieve cost-effective CSO controls that ultimately meet the requirements of the CWA. The CSO Policy establishes objectives for CSO communities: (1) to implement the nine minimum controls (NMCs) and submit documentation on NMC implementation; and (2) to develop and implement a long-term control plan (LTCP). CSS operators were expected to implement the NMCs and to submit appropriate documentation no later than January 1, 1997. *The 2004 Report to Congress on the Impacts and Control of CSOs and SSOs (2004 RTC)* stated that 94% of the active CSO permits required implementation of the NMCs. In addition to implementing the NMCs, CSO communities are expected to develop and implement an LTCP that includes measures to provide for attainment of water quality standards. LTCP implementation schedules are expected to include project milestones and a financing plan for design and construction of necessary controls as soon as practicable. The 2004 RTC indicates that implementation of enforceable LTCPs has not been achieved for the vast majority of combined sewer systems nationally. Thus, OECA's focus is to increase the universe of CSO communities implementing enforceable LTCPs.

**How is OECA Addressing the Problem?**

OECA's primary focus for the *FY08-FY10 CSO Performance-based Strategy* is to ensure that communities representing significant population centers are making appropriate progress towards addressing their CSO problems and violations. In addition, CSO communities in non-compliance and causing environmental or human health risks warranting Federal attention need to be addressed. Appropriate EPA actions to achieve compliance with the CSO Policy include taking appropriate, enforceable steps to address combined sewer overflow problems and violations through implementation of enforceable LTCPs. Critical steps to achieving these goals include: (1) targeting violators posing significant risks and conducting effective compliance monitoring activities and investigations; (2) using the appropriate administrative or judicial enforcement forum to achieve compliance and associated environmental improvements; and, (3) effectively providing compliance assistance.

Because enforcement actions involving CSO violations are often highly complex and resource-intensive for EPA and authorized states, this strategy also emphasizes the need for effective coordination of Federal and state resources. In 2005, EPA and a group of interested states formed a joint workgroup to provide clarity on when the federal government would pursue enforcement actions in CSO and SSO cases. These guidelines for Federal involvement include situations where: (1) significant environmental impact is occurring due to noncompliance and has not been addressed adequately; (2) CSO violations have occurred which may impact watersheds that cross state or international boundaries; (3) violations of EPA orders or consent decrees exist; and (4) a state requests that EPA take an enforcement action.

**Highlights from the FY 2005-2007 Planning Cycle**

Since EPA issued its Combined Sewer Overflow (CSO) Control Policy on April 19, 1994, it has focused its attention on bringing communities with combined sewer systems designed to collect storm water runoff, domestic sewage, and industrial wastewater into compliance with the Clean Water Act, through judicial and administrative enforcement, and through compliance assistance. As a result of EPA's actions during FY 2005 and FY 2006, an estimated 51.6 million pounds of pollutants have been reduced, treated or eliminated, and 50 sewage outfalls within 1 mile proximity of a drinking water intake have been addressed so that drinking water is protected from waterborne pathogens known to spread serious diseases, including gastroenteritis, cholera, and typhoid. In the judicial arena, States have often participated as co-plaintiffs, and EPA intends to continue to work closely with States in bringing enforcement actions. The more significant of the six federal judicial settlements (Judicial Consent Decrees) concluded in FY 2005 and FY 2006 include decrees in the District of Columbia, (District of Columbia Water and Sewer Authority), (entered in March 2005), and Louisville, Kentucky, (entered August 2006). In FY 2007, the settlements in CSO cases include decrees in the following cases: Indianapolis, Indiana, (entered December 2006), Greater Lawrence Sanitary District (GLSD), Massachusetts, (entered January 2007), and Sanitation District of Northern Kentucky, (entered April 2007).

# U.S. Environmental Protection Agency - October 2007
# FY08-FY10 Compliance and Enforcement National Priority
# Clean Water Act, Wet Weather, Sanitary Sewer Overflows

**What is the Environmental Problem?**

Properly designed, operated, and maintained sanitary sewer systems are meant to collect and transport all of the sewage that flows into them to a publicly owned treatment works (POTW) for treatment. However, releases of raw sewage from municipal sanitary sewers can occur in these systems. These types of releases, called sanitary sewer overflows (SSOs), may be caused by poor sewer collection system management, and often pose a substantial risk to public health and the environment.

The main pollutants in raw sewage from SSOs are bacteria, viruses, pathogens, excessive nutrients, industrial wastes, toxic pollutants such as oil and pesticides, and wastewater solids and debris. SSOs are of special concern to public health because they expose citizens to bacteria, viruses, intestinal parasites, and other microorganisms that can cause serious illness such as cholera, dysentery, hepatitis, cryptosporidiosis, and giardiasis. Sensitive populations - - children, the elderly and those with weakened immune systems - - can be at a higher risk of illness from exposure to sewage from SSOs.

The most common effects of sewage-related illness are gastroenteritis, which is an infection of the gastrointestinal tract, skin rashes, and infection of open cuts. Gastroenteritis affects the entire gastrointestinal tract, including the stomach and small and large intestines. Symptoms typically include abdominal cramps, watery diarrhea and vomiting which can last from one to ten days, depending on the severity of the illness and the sensitivity of the individual. Infected cuts and rashes can become swollen and red, and in some cases can result in septicemia or blood poisoning. Although symptoms can be treated, no curative medical treatment is available for some sewage-related illnesses.

The untreated sewage from SSOs can contaminate waters, in some cases causing serious water quality problems and threats to public health. SSOs may also occur in basements, parks, recreational streams, beaches, on city streets and backyards, and other areas where people are in close contact with the overflow. The public can be exposed to raw sewage from SSOs through street flooding, recreational contact such as swimming and fishing, drinking contaminated water and collection system back-ups into homes. It is important to note that the threat to public health and the environment posed by SSOs is not necessarily limited to large volume or extended-duration overflows. Some of the greatest threats from SSOs stem from viruses and pathogens which can present a public health threat even in small volume, intermittent overflows.

**Why is EPA Addressing the Problem?**

The non-compliance universe of municipal authorities experiencing SSOs is constantly being updated. However, empirical data indicate that there is a significant non-compliance problem. EPA estimates that nationally there may be 25,000 to 89,000 SSOs each year. Further, it is estimated that there are anywhere from 3 to 10.6 billion gallons of SSO discharges per year. *[The 2004 Report to Congress on the Impacts and Control of CSOs and SSOs (2004 RTC).]*

Because of the estimated high number of SSOs occurring each year, and the adverse effects on public health and the environment and the current level of impaired waterways, the focus on reduction or elimination of SSOs could result in significant benefits to public health and the environment. EPA believes the number of SSOs can be dramatically reduced through proper management, operation, and renewal of sewer infrastructure.

The federal government has an interest in the protection of public health and in the condition of the U.S. infrastructure of collection systems and sewage treatment capacity. Many of the systems were built with federal dollars. The federal government has the ultimate responsibility for writing permits for sewage treatment plant discharges and must also ensure compliance with the NPDES program and with individual / general permits.

**How Will The Problem Be Addressed?**

SSOs have a variety of causes, including but not limited to severe weather, improper system design and/or inadequate capacity, improper management, operation and/or maintenance, and vandalism. Of these causes, the most common related to SSOs are inadequate capacity, improper management, and improper operation and maintenance of sanitary sewer collection systems. In FY 2008 - FY 2010, EPA and the States will continue to address these problems using various derivatives of the capacity, management, operation and maintenance (CMOM) concept which encourages the use of self-assessments and pro-active correction of system deficiencies to avoid further deterioration of the sanitary sewer infrastructure and resultant SSOs. In some cases, EPA and the States will use a combination of administrative and civil judicial enforcement action to achieve these goals.

**Highlights from the FY 2005-2007 Planning Cycle**

One of the primary goals under the first cycle of the strategy (FY2005-FY2007) was to protect the public investment in wastewater infrastructure by ensuring municipal collection systems have sufficient capacity and use proper asset management, operation, and maintenance practices. EPA and the states made a great deal of progress in the first cycle addressing many of the medium and large municipal authorities targeted under the strategy. For example, EPA issued 31 administrative compliance orders for SSOs during the first cycle of the strategy. In addition, EPA concluded 16 SSO judicial case settlements during the first cycle of the strategy. States have been co-plaintiffs in the vast majority of these cases. The injunctive relief required by three of these judicial case

settlements alone will result in the reduction of SSOs estimated at 290 million gallons annually (Louisville, KY (218 MG); Los Angeles, CA (46 MG); Washington Suburban Sanitary Commission, MD (26 MG).

# U.S. Environmental Protection Agency - October 2007 FY08 – FY10 Compliance and Enforcement National Priority: Clean Water Act, Wet Weather, Storm Water

**What is the Environmental Problem?**

Storm water discharges continues to be a national enforcement and compliance priority. Storm water runoff from urban areas, including discharges from municipal storm sewers, industrial facilities and construction sites can have significant adverse impacts on water quality. These water quality impacts can be defined by two key problems - storm water quality and storm water quantity. EPA's *National Water Quality Inventory: 2000 Report*, prepared under Section 305(b) of the Clean Water Act, states that urban storm water runoff and discharges from storm sewers are a primary cause of impaired water quality in the United States. Runoff from rain and melting snow is responsible for beach closings, swimming and fishing advisories, and habitat degradation.

As storm water flows through urbanized areas, or over construction or industrial sites, it can pick up a variety of pollutants that can harm the environment and public health, including bacteria, sediment, debris, pesticides, petroleum products, chemicals, solvents, asphalts and acids. Without on-site controls, this storm water generally flows untreated directly to the nearest waterway. The large number of municipal separate storm water sewer systems or Municipal Separate Storm Sewer Systems (MS4s) (about 8,000), construction sites (over 240,000 new sites per year), and industrial sites (over 100,000), and the diversity of these activities, make this a large and complex problem.

Changes in land use associated with development and urban sprawl affect the volume and rate of storm water discharged to receiving streams. The volume and rate of storm water runoff will continue to grow as development replaces porous surfaces with impervious blacktop, rooftops, compacted soil, and concrete. In urban areas, it is not uncommon for impervious surfaces to account for 45% or more of the land cover. The increasing volumes and rates of storm water runoff can affect the equilibrium that exists in natural, undisturbed waters, resulting in such impacts as increased stream bank erosion, which in turn causes increased silt in waterways and habitat destruction. With land development and sprawl increasing at a rate faster than population growth, urbanization's negative impact on water quality is a significant problem that may only get worse without more aggressive controls.

## How and Why OECA is Addressing the Problem?

EPA will use compliance assistance, compliance monitoring and enforcement tools, as appropriate, towards achieving goals and environmental outcomes of the strategy. During 2008 - 2010, EPA will focus on three main areas of the storm water program: (1) homebuilding construction; (2) big box store[1] construction; and, (3) ready mix concrete[2] with crushed stone and sand and gravel operations. The size and diversity of these sectors, and the levels of observed noncompliance, reveal the problem to be national in scope. As a result, the Agency can play a unique and significant role in addressing this problem. For example, many construction and industrial companies operate nationwide in multiple states, and EPA has the ability to take enforcement actions that address these companies on a national basis. In addition, EPA is able to provide consistent and widespread compliance assistance to these sectors. Finally, EPA is also exploring whether the following sectors should be considered for additional focus in future years: MS4s, Ports, Road Building, and Federal Facility Construction.

## Highlights from the FY 2005-2007 Planning Cycle

From 2000 - 2006, EPA has conducted over 4,500 storm water inspections and 37 MS4 audits. Compliance and enforcement activities in the construction sector have reduced the amount of sediment that would have been discharged by an estimated 281 million pounds in FY2005 and 195 million pounds in FY2006. EPA has provided compliance assistance to state agencies and the regulated community, and has developed several enforcement and compliance tools to help meet the strategy goals. For example, EPA finalized the Storm Water Post-Inspection Implementation Guide and its associated fact sheet and web site, and a brochure, "Role of Local Governments in Implementing the NPDES Storm Water Program for Construction Sites," which provide information to the regulated community about the storm water program. EPA also provided numerous seminars and workshops to the regulated community and states on the storm water program to increase awareness, improve understanding, improve environmental management practices, and reduce pollution. To measure reductions in pollutants discharged as a result of enforcement activities, EPA developed pollutant reduction calculators for 19 of the 29 non-construction industries included in the Multi-Sector General Permit. EPA also issued revised guidance for Expedited Settlement Offers for the construction sector in response to concerns from the regulated community, and

[1] **Big Box Store:**
There is no universal definition of a Big Box Store. As a result the Strategy focused on three factors: average square footage of a company's store (average footprint), the company's total revenues, and the number of new stores a company projects will be constructed over the next 3 years. Taken together these factors can be an indicator of a company's potential impact on the environment.

[2] **Ready Mix Concrete/Crushed Stone/Sand and Gravel:**
The Strategy focuses on a group of sectors composed of three "sub-groups": 1) sand and gravel producers (SIC code 144), 2) crushed stone producers (SIC code 142), and 3) ready-mix concrete producers (SIC 3273). These sectors were selected based on EPA inspections which indicated noncompliance and environmental impacts associated with each sub-sector to be significant and approximately equivalent.

developed a MS4 Audit/Inspection Train-the-Trainer Workshop to improve and enhance state capability to conduct audits and inspections of MS4 permittees.