Many parts of the economy—manufacturing, construction, processing, formulating, generation, extraction, and refining—generate and discharge process wastewater and/or stormwater. Those discharges are extensively regulated under the Clean Water Act (CWA) through a collaborative federal and state program of facility permits and regulatory standards. This chapter provides a brief overview of the law, a road map of the topics covered in this book, and concluding comments about what may lie ahead.

Historical Background

The first federal statute governing water pollution control was the Rivers and Harbors Appropriation Act of 1899. This statute prohibits the construction of bridges and other structures (section 10) and the deposit of refuse matter (section 13) without approval or a permit from the Army Corps of Engineers (Corps). For decades, these provisions, as administered by the Corps, were not thought to require permits for discharges that did not interfere with navigation.

The Federal Water Pollution Control Act (FWPCA) was first enacted in 1948. The 1948 act allowed a court to grant relief from pollution after considering the practicability and economic feasibility of abatement. The Water Quality Act of 1965 provided for the adoption of water quality standards for interstate waters. However, the approach in the 1965 act was later regarded as ineffective due to its limited scope,
the difficulty in determining when a discharge violated the standards, and its cumbersome enforcement mechanism.

In late 1972, Congress passed a comprehensive revision and recodification of the FWPCA known as the Clean Water Act. Responding in part to a flood of litigation alleging that sources were discharging pollutants unlawfully under the Rivers and Harbors Act, the 1972 act established the National Pollutant Discharge Elimination System (NPDES) permit program as a federal–state system to supplement and replace the Rivers and Harbors Act permit program. The act established a July 1, 1977, deadline for technology-based limits on discharges of pollutants to be achieved by direct industrial dischargers and municipal treatment works as well as any more-stringent, water quality–based standards imposed by states. The act also called for the creation of pretreatment standards for indirect dischargers to municipal treatment systems. In addition, the 1972 act established a program for continuing existing water quality standards while providing for their modification from time to time.

Based on experience with the 1972 amendments, Congress enacted midcourse corrections to the act in 1977. The 1977 amendments contained new provisions to address 65 so-called priority or toxic pollutants. Rather than relying solely on water quality standards, Congress required that “best available technology” (BAT) limitations for toxic pollutants be achieved by July 1, 1984. Congress established new “best conventional pollutant control technology” (BCT) limitations and required that they be achieved by July 1, 1984, for conventional pollutants such as suspended solids, biochemical oxygen demand (BOD), fecal coliform, and pH. The 1977 amendments also added provisions for best management practices, removal credits for pretreatment standards, and modifications of BAT requirements for nontoxic pollutants.

In 1987, Congress adopted amendments to the CWA that established post-BAT water quality requirements, provided for administrative civil penalties, and codified the requirements for stormwater discharges and other features of the program that had been the subject of debate. Section 319 of the act was added to address the

6. Clean Water Act, Pub. L. No. 92-500, 86 Stat. 816 (1972). The modern federal Clean Air Act and the Clean Water Act, although enacted within two years of each other (1970 and 1972, respectively), evolved quite differently. The Clean Air Act’s initial focus was on attaining ambient air quality standards for a relatively limited number of contaminants through state implementation plans but without a national permit program. In contrast, the Clean Water Act featured a national permit program and an emphasis on achieving technology-based limitations. Later, a permit program was added to the Clean Air Act, and the Clean Water Act has increasingly focused on achieving ambient water quality standards.

7. See supra note 3 and 33 U.S.C. § 1342. Permits issued under the 1899 act were deemed permits under the 1972 act and vice versa. 33 U.S.C. § 1342(a)(4). Pending applications under the 1899 act were deemed to be applications under the 1972 FWPCA, and no further permits were to be issued under the 1899 act. 33 U.S.C. § 1342(a)(5).


9. Id. § 1313.


13. Id. §§ 1314(e), 1317(b)(1), 1311(g).

creation of nonpoint source management programs. New section 402(p) of the act established a comprehensive new program for stormwater regulation. In 1995, the Environmental Protection Agency (EPA) issued the “multisection general permit” for stormwater, which was reissued in 2000. In 1998, the Clinton administration announced the Clean Water Action Plan, which would provide resources to targeted areas, focus on watershed-based planning, and implement a national strategy for control of contaminated runoff.

Additional amendments may be expected when the CWA is next reauthorized. Among the issues that have been discussed in hearings and bills are provisions that would amend the definition of the jurisdiction of “waters of the United States” in response to the Supreme Court’s decision in Rapanos v. United States;\(^{15}\) clarify the definition of “fill material” to address mountaintop mining; promote better management of stormwater runoff; and address environmental taxes and fees, pollution prevention, regulation of wetlands, regional water quality issues, and enforcement.\(^{16}\)

**Point Source and Dredge/Fill Permits**

A person responsible for a “discharge of pollutants” into “waters of the United States” from a “point source” (a discrete conveyance)\(^ {17}\) is subject to various provisions of the CWA. One would expect that the basic scope of the act would be well settled by now, more than four decades after the 1972 statute was enacted. However, the meaning of “waters of the United States” continues to be debated. In 2001, the Supreme Court issued a 5–4 decision in Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC),\(^ {18}\) holding that isolated ponds are not subject to the CWA. Subsequently, in the 4–1–4 Rapanos split decision, the plurality opinion by Justice Antonin Scalia opined that waters of the United States include wetlands only if they have a surface connection to traditional water bodies, namely, oceans, streams, and lakes, whereas in Justice Anthony Kennedy’s view, wetlands are covered by the statute if they significantly affect the chemical, physical, and biological integrity of

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17. As discussed in Chapter 10, EPA also implements programs to control nonpoint source discharges.
traditional navigable waters. The government has taken the position that a water body satisfying either the plurality or Justice Kennedy’s test in *Rapanos* falls within the jurisdiction of the CWA. As we shall see in Chapters 2, 3, and 7, this confusion over the scope of the CWA continued to generate controversy and litigation.

In light of this regulatory confusion, in May 2015, EPA and the Corps promulgated final regulations defining waters of the United States, which are intended by the agencies to make waters protected by the act more precisely and predictably defined and determined. The rule was stayed by the Sixth Circuit Court of Appeals on October 9, 2015, and the Supreme Court has ruled that district courts, rather than courts of appeals, have jurisdiction over this matter. The election of Donald Trump as president has created further uncertainty about the fate of the “waters of the United States” given the express opposition of many members of the Republican Party to the Obama-era definition. That being said, in the great majority of cases such contentious issues do not arise, there being no dispute that the discharge is to a traditionally recognized navigable water body regulated under the act.

Dischargers to waters of the United States must obtain and comply with a permit under the NPDES program pursuant to section 402 of the CWA. Permits must be obtained from EPA or from a state that has an EPA-approved permit program. Most states currently implement the NPDES permit program, with EPA retaining the right to review and veto permits that are not in accord with the act. NPDES permits contain effluent limitations that apply the technology-based and water quality–based requirements of the act (discussed later in the chapter) to a particular discharger. As discussed in Chapters 3 and 4, permits also contain schedules of compliance and requirements for regular discharge monitoring and self-reporting of the monitoring results to the appropriate regulatory authorities.

The CWA contains a permit shield; that is, compliance with a permit constitutes compliance with most of the operative provisions of the CWA. Permits may be issued for a term of up to five years and thus must periodically be reissued. Discharges without a permit and violations of permit conditions are subject to federal and state civil and criminal penalties and citizen suits.

In deference to the well-established role of the Corps, section 404 of the CWA gives the Corps the authority to issue permits for the discharge of dredged or fill material to waters of the United States. This program is most often associated with the protection of wetlands, although the full scope of the program is broader. Activities that may require section 404 authorization include land clearing, construction of dams,

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19. See 40 C.F.R. § 230.3(s).
23. *Id.* § 402(k).
24. *Id.* §§ 1319, 1365.
25. *Id.* § 1344.
Technology-Based and Water Quality–Based Effluent Limitations

As discussed earlier, a discharger of pollutants from a point source to waters of the United States must obtain an NPDES permit. The effluent limits required in such permits are largely dictated by two basic kinds of regulatory controls under the CWA: technology-based requirements and water quality–based requirements. The permit must incorporate both types of requirements, and the more restrictive requirement will govern.

Technology-based requirements are designed to reflect the levels of effluent quality achievable through the use of pollution control technology. Effluent limitations reflecting the application of the “best practicable control technology currently available” (BPT) were required to be achieved by July 1, 1977. The act requires the achievement of limits reflecting “best available technology economically achievable” (BAT) by July 1, 1984, for “toxic pollutants” and by July 1, 1987,
for “nonconventional” pollutants.\textsuperscript{32} In addition, “new source” direct dischargers are subject to standards of performance for new sources.\textsuperscript{33} As discussed in Chapter 3, these requirements are defined by EPA in “effluent guidelines” regulations pursuant to 33 U.S.C. § 1314(b), which sets forth the various factors EPA must take into account in establishing these limits.

“Indirect dischargers” to publicly owned treatment works (POTWs) must comply with pretreatment standards for pollutants that would interfere with or pass through the POTWs.\textsuperscript{34} The new source and pretreatment standards, discussed in Chapters 5 and 6, are generally identical to BAT limits for existing direct dischargers. Indirect dischargers are not required to obtain an NPDES permit, and instead the EPA pretreatment standards themselves are enforceable against indirect dischargers.

EPA’s effluent limitations guidelines and standards are published at 40 C.F.R. part 400, et seq. According to an EPA report, the effluent guidelines and categorical pretreatment standards regulations have been published for 56 industry categories and apply to between 35,000 and 45,000 facilities that discharge directly to the nation’s waters.\textsuperscript{35} In the absence of applicable BPT, BCT, or BAT guideline regulations, EPA exercises “best professional judgment” (BPJ) to establish effluent limitations for a particular plant in issuing a discharge permit.\textsuperscript{36}

The initial focus of the 1972 act was on implementing the new technology-based controls. Subsequently, the emphasis has shifted back to water quality–based controls. As discussed in Chapter 3, water quality requirements consist of a set of rules designed to achieve a given level of quality for a natural body of water. They are based on scientific information about pollutant levels consistent with various uses of water, such as public water supply, recreation, industrial uses, and protection of fish and wildlife. Water quality standards are adopted by the states and submitted to EPA for approval.\textsuperscript{37} These standards must take into account the uses of a body of water, such as public water supply; propagation of fish and wildlife; recreation; and agricultural, industrial, and other purposes. However, in practice, EPA has pressed the states to require all streams to meet standards for fishing and swimming and to include an anti-degradation policy to protect existing uses and high-quality waters.\textsuperscript{38} EPA’s criteria for reviewing state standards are set forth in 40 C.F.R. §§ 131.5 and 131.6.\textsuperscript{39} EPA also has

\begin{enumerate}
\item[32.] Id. § 1311(b)(2)(C), (F). The list of toxic pollutants designated by EPA appears in 40 C.F.R. § 401.15. Nonconventional pollutants cover every pollutant not identified as toxic or conventional. The act also requires that effluent limits reflecting the “best conventional pollutant control technology” be achieved for “conventional pollutants” by July 1, 1984. 33 U.S.C. § 1311(b)(2)(E). A list of conventional pollutants is set forth in 40 C.F.R. § 401.16. They include BOD, total suspended solids, pH, and oil and grease.
\item[33.] 33 U.S.C. § 1316.
\item[34.] Id. § 1317(b). In addition, as discussed in Chapter 5, the act imposes certain requirements on POTWs.
\item[36.] 33 U.S.C. § 1342(a)(1).
\item[37.] Id. § 1313(c)(2).
\item[38.] Id.
\item[39.] If EPA disapproves a state standard and the state does not adopt required changes, EPA may adopt a standard. 33 U.S.C. § 1313(c)(3).
\end{enumerate}
developed certain toxic pollutant effluent limitations and has implemented a program
to develop limits based on effluent toxicity.

Total maximum daily loads (TMDLs), discussed in Chapter 11, are a key tool
to achieve water quality standards. Section 303(d) of the act provides that the states
shall (1) identify waters that failed to achieve water quality standards after application
of technology-based controls; (2) determine the TMDL needed to enable the
water body to comply with water quality standards; and (3) allocate these loads
among dischargers in permits and water quality plans.40 Guidance documents were
issued to the states by EPA in August 1997, clarifying the scope of listed waters and
setting schedules for action. In February 1998, President Bill Clinton announced
a Clean Water Action Plan, which emphasized that runoff is the most important
source of water pollution and that agriculture affects 70 percent of impaired rivers.
In July 2000, EPA issued a TMDL rule, but the rule was subsequently withdrawn
in March 2003 after generating significant criticism.41 EPA has made various guid-
ance materials available concerning TMDLs, and states are proceeding to develop
TMDLs and implement them in NPDES permits. However, the development of
TMDLs is a complex process that has challenged the resources of state agencies. In
2013, EPA announced a new collaborative framework for implementing the Clean
Water Act section 303(d) program with states, which encourages focusing attention
on priority waters and flexibility in using available tools beyond TMDLs to attain
water quality restoration and protection.42 On July 6, 2015, the Third Circuit U.S.
Court of Appeals upheld EPA’s Chesapeake Bay TMDL in American Farm Bureau
Federation v. EPA (No. 13-4079) and the agency’s authority to develop a detailed
TMDL including waste loads and timelines for compliance.

Spill of Hazardous Substances, Stormwater,
and Nonpoint Sources

As discussed in Chapter 8, section 311 of the CWA authorizes EPA to determine by reg-
ulation “those quantities of oil and any hazardous substances the discharge of which
may be harmful to the public health or welfare,” known as “reportable quantities.”43 As
a result of litigation and 1978 amendments, section 311 does not cover discharges that
are in compliance with, or otherwise subject to, an NPDES permit.44

The responsible person is required to notify the appropriate federal agency as
soon as he or she has knowledge of any discharge of oil or a hazardous substance in a
reportable quantity into or upon the navigable waters of the United States.45 A party

40. Id. § 1313(d).
42. EPA, “A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act
/vision_303d_program_dec_2013.pdf.
44. 40 C.F.R. § 117.12.
that discharges a reportable quantity of a hazardous substance is subject to fines. In addition, the federal government is authorized to arrange for the removal of oil or a hazardous substance, and to assess the costs of removal to the responsible party. Parties that can reasonably be expected to harm the environment if a spill of a hazardous substance were to occur are required to prepare a spill prevention control and countermeasure plan.46

Prompted by the 1987 amendments, which added section 402(p) to the act,47 EPA has been developing and implementing a program to regulate stormwater. EPA established a tiered approach toward permitting stormwater, giving priority to stormwater discharges associated with industrial activity, which includes industrial plant yards, storage areas, and access roads. Such dischargers are required to obtain either an individual or a general NPDES permit.48 EPA regulations also cover discharges from large and medium separate municipal storm sewers. Under the second phase of the program, most discharges from small construction activity will likely be regulated through general permits. Most states have been authorized to implement the NPDES stormwater program.

EPA has also established regulations governing various diffuse sources, such as concentrated animal feeding operations (CAFOs), silviculture, and aquaculture. CAFOs that are not excluded must apply for a permit and comply with technology-based effluent limitations.49 EPA regulates a subset of forestry and aquaculture operations, and, as discussed in Chapter 10, the remaining activities are excluded as nonpoint sources.

Finally, section 319 of the act,50 enacted in 1987, requires states to develop management programs for water bodies that require the control of nonpoint sources to meet applicable water quality standards and provides grants to states to develop these programs. As discussed in Chapter 11, the TMDL program has shifted the focus of state management planning. In 2009, President Barack Obama issued an executive order51 making the restoration of the Chesapeake Bay a national priority, focusing largely on the reduction of nonpoint source discharges.

**Enforcement and Judicial Review**

Several enforcement options and procedures are available to the United States. They include administrative orders, blacklisting, and civil and criminal suits. Section 309(a)(3) of the CWA authorizes EPA to issue an administrative order whenever it finds that a person is in violation of enumerated provisions of the act or an NPDES permit.

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46. *Id.* § 1321(j)(4), (5); 40 C.F.R. pt. 112.
47. 33 U.S.C. § 1342(p).
49. In 2012, EPA announced the results of its review of the CAFO regulations and concluded that there is a continued need for the CAFO regulations. See Docket ID #EPA-HQ-OW-2012-0813.
implementing these provisions. EPA may “blacklist”—or suspend from government contracting—any company convicted of an offense under section 309 of the CWA. EPA’s general regulations governing debarment are set forth in 40 C.F.R. part 32, as discussed in Chapter 12.

Sections 309(d) and 309(g) of the act authorize EPA to sue for civil penalties for any violation of an NPDES permit, an EPA order, or the act. Section 309(c) of the CWA authorizes EPA to seek criminal penalties against responsible persons for willful or negligent violations and for knowingly making any false statement or report. The term “person” for these purposes means a corporation or any responsible corporate officer. In Sackett v. EPA, the Supreme Court held that the Sacketts could bring a lawsuit to challenge an EPA compliance order alleging that the Sacketts had unlawfully filled a wetland and that the Sacketts need not await EPA enforcement to obtain judicial review. This ruling has implications for EPA actions under other statutes, as recognized in a March 21, 2013, memorandum by EPA’s Office of Enforcement and Compliance Assurance. Subsequently, on May 31, 2016, in United States Army Corps of Engineers v. Hawkes Co., Inc., the Supreme Court ruled unanimously that a jurisdictional determination by the Corps of Engineers regarding the presence or absence of waters of the United States on a particular property is a final agency action judicially reviewable under the Administrative Procedure Act.

Section 505 of the CWA authorizes citizen enforcement and has been used since 1982 as the basis for a large number of suits against discharges. Under this provision, any citizen may bring a civil action against any person who is alleged to be in violation of an effluent limitation or standard under the act or an administrative order issued by EPA or a state. However, the courts have imposed limitations on the extent to which such citizen suits may be brought when the defendant has come into compliance. The courts in such suits may award civil penalties under section 309(d) of the CWA and enforce appropriate limitations or orders. All penalties are paid to the Treasury. Citizen groups may be awarded their costs of litigation, including attorneys’ and expert witness fees.

EPA’s Environmental Appeals Board (EAB) decides appeals on penalty proceedings and permit decisions. Practice before the EAB is established by federal regulations. Respondents may seek judicial review of administrative enforcement decisions.

53. Id. § 1368.
54. Id. § 1319(d).
55. Id. § 1319(c).
56. Id. § 1319(a)(3).
60. 33 U.S.C. § 1365.
63. See 40 C.F.R. pts. 22, 124.
64. See id. § 1.25(e). The EAB provides additional information about its procedures in the responses to Frequently Asked Questions (FAQs) on the EAB’s website at http://www.epa.gov/eab.
As discussed in Chapter 13, section 509(b)(1) of the CWA provides that specified EPA actions, such as the promulgation of regulations and the issuance of permits, are subject to exclusive jurisdiction in the U.S. courts of appeals. The enumerated actions are subject to appellate review if suit is commenced within 120 days from the date of EPA's action, unless new grounds subsequently arise. Suits may be commenced in the circuit court within which the petitioner resides or transacts business affected by EPA's action. Other EPA actions not enumerated in section 509(b) are subject to judicial review in federal district court.

What Lies Ahead

The scope of the CWA, which regulates discharges to “navigable waters,” is still being debated in light of recent decisions of the Supreme Court and lower courts. As previously noted, EPA's final rule defining “Waters of the United States” has generated considerable debate and has already been the subject of considerable litigation. There has been significant litigation concerning what is a discharge of a pollutant, mainly relating to transfers between water bodies and the application of pesticides. The regulation of wetlands remains controversial in some quarters. The provisions of the act dealing with water quality and nonpoint sources have proven difficult to implement in practice. The TMDL program under section 303(d) of the act is another initiative—slow to be implemented—that will have a significant impact on both point and nonpoint sources. A water quality trading program to address water quality goals more efficiently has been suggested as a means to establish effective incentives.

In the years ahead, one may expect continued discussion of whether new contaminants should be regulated under the act, including potential endocrine disruptors. Finally, the relationship between energy and the environment intersects the water quality programs at EPA, which is currently dealing with the issues ranging from the impacts of hydraulic fracturing, to climate change, to the 2010 BP Gulf Coast oil spill. EPA is undertaking a national study to understand the potential impacts of hydraulic fracturing on drinking water resources. EPA released a progress report in December 2012 and a final draft assessment report has not yet been issued. EPA is also examining the disposal methods employed by industry to ensure that there are regulatory

66. Id.
69. See EPA's Endocrine Disrupter Screening Program at http://www.epa.gov/endo.
and permitting frameworks in place to provide safe and legal options for disposal of flowback and produced water.

For 2015, EPA’s strategic plan identifies three strategies: (1) continued implementation of core national water programs, giving priority to improving water quality monitoring and information management, as well as working with the states to strengthen water quality standards, improve discharge permits, and reduce pollution from diffuse or “nonpoint” sources; (2) sustain and secure the nation’s water infrastructure through investments in state revolving loan funds, innovative financing, and technical assistance to utilities; and (3) a watershed approach to restoring polluted waters, including developing TMDLs and promoting water quality trading and watershed permitting.70

In short, although the act might be called a “mature” program, many tasks and challenges remain for EPA, the states, and the regulated community.

For many years, the efforts of the U.S. Environmental Protection Agency (EPA) to regulate water pollution through the National Pollutant Discharge Elimination System (NPDES) program focused almost exclusively on controlling the discharge of process wastewater from industrial plants and the discharge of sewage from municipal treatment works. Since the late 1980s, however, EPA’s NPDES permitting and enforcement programs have placed increasing emphasis on efforts to control wet weather discharges such as those from combined sewer overflows, industrial and municipal stormwater systems, and concentrated animal feeding operations (CAFOs).

This chapter builds on the description of the NPDES program in Chapters 3 and 4 by summarizing the Clean Water Act (CWA) authorities that govern these point source wet weather discharges. The chapter discusses the application requirements and effluent limitations and other permit conditions for industrial and municipal stormwater discharges and for CAFOs. It also discusses the requirements governing wet weather discharges from silviculture and aquatic animal production facilities. A related topic, sewer overflows, is covered in Chapter 5.

**Stormwater**

The primary focus of the NPDES program’s efforts to improve water quality traditionally has been on controlling the discharge of industrial process wastewater and municipal sewage. Stormwater runoff in the early days of the NPDES program was treated as a diffuse source of nonpoint source pollution. This may have seemed logical because...
most runoff cannot efficiently be controlled using the strict end-of-pipe effluent limitations that are effective in regulating traditional industrial and municipal discharges.

However, many sources of stormwater runoff are discharged through discrete conveyances or separate storm sewers and thus legally meet the definition of a “point source.” As a result, EPA was directed by court order to require NPDES permits for the discharge of stormwater runoff. Since that time, the appropriate means of regulating point source discharges of stormwater has been a matter of serious concern and controversy. EPA promulgated NPDES stormwater regulations in 1973, 1976, 1979, and 1984, most of which resulted in extensive litigation but little, if any, real control of stormwater discharges.

In 1987, however, Congress added section 402(p) to the Clean Water Act, which established a comprehensive new scheme for regulation of stormwater. Section 402(p) provided that, except for five categories of stormwater discharges specified in section 402(p)(2), the EPA (or an approved NPDES state) could not require an NPDES permit for discharges composed entirely of stormwater until after October 1, 1994. The five categories for which permits could be required before October 1, 1994, were the following:

1. A discharge with respect to which a permit had been issued prior to February 4, 1987;
2. A discharge associated with industrial activity;
3. A discharge from a municipal separate storm sewer system serving a population of 250,000 or more;
4. A discharge from a municipal separate storm sewer serving a population of 100,000 or more, but less than 250,000; and
5. A discharge for which the EPA administrator or the state, as the case may be, determines to contribute to a violation of a water quality standard or is a significant contributor of pollutants to the waters of the United States.

Section 402(p) thus established a phased and tiered approach to permitting stormwater discharges. The five categories just identified comprise what EPA refers to as Phase I of its stormwater permit program. All stormwater discharges not included in these five categories are covered in Phase II of the program, discussed later in the chapter.

Stormwater is defined in EPA regulations to include stormwater runoff, snowmelt runoff, and surface runoff and drainage. Specifically excluded by statute from the

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9. 40 C.F.R. § 122.26(b)(13).
definition of point source are agricultural stormwater discharges. EPA has also clarified that “stormwater control features constructed to convey, treat, or store stormwater that are created in dry land” are not “waters of the United States” (and are likely, instead, point sources discharging to waters of the United States).

**Phase I Stormwater Discharges**

**Discharges Associated with Industrial Activity**

EPA defines the term “discharge associated with industrial activity” to mean a discharge from any conveyance that is used for collecting and conveying stormwater and that is directly related to manufacturing, processing, or raw material storage areas at an industrial plant in one of the following 11 industrial categories:

1. Facilities subject to stormwater effluent limitation guidelines, new source performance standards, or toxic pollutant effluent standards (except such toxic standards as are specifically exempted);
2. Facilities in Standard Industrial Classification (SIC) code 24, Industry Group 241 that are rock crushing, gravel washing, log sorting, or log storage facilities operated in connection with silvicultural activities defined in 40 C.F.R. 122.27(b)-(2)-(3), and Industry Groups 242 through 249; 26 (except 265 and 267), 28 (except 283), 39, 311, 32 (except 323), 33, 3441, or 373; (not included are all other types of silviculture facilities);
3. Facilities in SIC codes 10 through 14 (mineral industry), including active or inactive mining operations (except for certain postreclamation activities) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge stormwater contaminated through contact with overburden, raw materials, intermediate products, finished products, by-products, or products located on the site of such operations;

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11. 40 C.F.R. §122.2(2)(vi) (Note that this rule was being challenged as this edition of the Handbook went to press, and may no longer be in effect.).
12. Id. §122.26(b)(14)(i)-(xi).
13. In 1997, the SIC code system was replaced by the North American Industrial Classification System (NAICS). See http://www.census.gov/epcd/www/naics.html for information. EPA has not updated its regulations at 40 C.F.R. §122.26 to conform, but one can assume that the permit applicant should use the equivalent NAICS codes instead.
15. The regulation of stormwater discharges from inactive mining operations under CWA section 402(p) was specifically upheld in American Mining Congress v. EPA, 965 F.2d 759 (9th Cir. 1992).
16. See the section title Exclusions for discussion of a statutory exemption for certain stormwater discharges from mining and oil and gas operations.
4. Hazardous waste treatment, storage, or disposal facilities, including those operating under interim status or pursuant to a Resource Conservation and Recovery Act (RCRA) subtitle C permit;
5. Landfills, land application sites, and open dumps that receive or have received any industrial wastes, including facilities subject to RCRA subtitle D;
6. Recycling facilities, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards, including SIC codes 5015 and 5093;
7. Steam electric power-generating facilities, including coal handling sites;¹⁷
8. Transportation facilities classified under SIC codes 40, 41, 42 (except 4221–4225), 43, 44, 45, and 5171 that have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations;
9. Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment devices or systems used in the storage, treatment, recycling, or reclamation of municipal or domestic sewage. Excluded are farmlands, domestic gardens, lands used for the beneficial application of sludge, or areas in compliance with CWA section 405;
10. Construction activity including clearing, grading, and excavation activities, except operations that result in the disturbance of less than five acres of land; and
11. Facilities covered under SIC codes 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, and 4221–4225.¹⁸

EPA’s definition of stormwater discharge associated with industrial activity includes, but is not limited to, discharges from industrial plant yards; immediate access roads; rail lines used to carry materials and products; material handling sites; refuse sites; sites used for the application or disposal of process wastewater; sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials and products; and areas where

¹⁷. This provision does not include discharges from major electrical powerline corridors. 55 Fed. Reg. 47,990, 48,015 (Dec. 16, 1990); cf. Ecological Rts. Fdn. v. Pacific Bell Tel. Co., 713 F.3d 502 (9th Cir. 2013) (stormwater discharges from electrical utility poles are also not “associated with industrial activity”).
¹⁸. Under EPA’s original regulations, facilities in category 11 were required to obtain permits only if there was actual exposure of significant materials to stormwater. 55 Fed. Reg. 47,990, 48,063 (Nov. 16, 1990) (promulgating 40 C.F.R. § 122.26(b)(14)(xi)). In Natural Resources Defense Council v. EPA, 966 F.2d 1292 (9th Cir. 1992), the Ninth Circuit struck down the exclusions recognized by category 10 (construction areas that disturb less than five acres) and category 11 (light industries without actual exposure), remanding both for further EPA proceedings. The court found that EPA’s rulemaking record did not support these exclusions. EPA subsequently announced the position that the Ninth Circuit’s decision did not have the effect of automatically subjecting stormwater discharges in the two affected categories to immediate permit application and issuance requirements, and that further rulemaking would be necessary to bring them into the permit program. 57 Fed. Reg. 60,444, 60,446 (Dec. 18, 1992). These sources remained unregulated until EPA promulgated its Phase II regulations in 1999. See 64 Fed. Reg. 68,722, 68,783 (Dec. 8, 1999).
Industrial Stormwater Discharges to Separate Storm Sewer Systems

Dischargers of stormwater associated with industrial activity that is discharged through a municipal separate storm sewer to a water of the United States are required to obtain their own NPDES permit, separate from that issued to the municipality. Such discharges are classified as discharges “associated with industrial activity.” As such, they are subject to the best available technology/best conventional technology (BAT/BCT) requirements of section 301(b)(2) and are subject to additional limitations to protect water quality imposed under CWA section 301(b)(1)(C).

Similarly, all operators of stormwater discharges associated with industrial activity that discharge into a privately or federally owned stormwater conveyance are required to be covered by an NPDES permit (individual, general, or as a co-permittee to a permit issued to the portion of the system that discharges directly to a water of the United States).

Exclusions

The term “discharges associated with industrial activity” excludes discharges from facilities or activities that are already excluded from the NPDES program under 40 C.F.R. part 122.

In particular, section 402(l)(2) of the CWA exempts from NPDES permitting requirements stormwater discharges that are not contaminated by contact with any overburden raw material, intermediate products, finished products, by-products, or waste products located on the site of oil, gas, or mining operations. Congress recognized that in the mining and oil and gas industries, stormwater often is channeled around plants and operations to prevent stormwater from becoming contaminated. Conveyances at such operations used to collect stormwater located at the plant or directly related to manufacturing, processing, or raw-material storage are required to obtain an NPDES permit.

EPA had interpreted section 402(l)(2) to exclude only operating oil, gas, or mining facilities, and, thus, construction of a facility engaged in such operations would be subject to stormwater permitting as a construction discharge. This interpretation did not have much practical effect until EPA adopted its Phase II regulations, and dropped the threshold for permits for construction activities from five acres to one.

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21. Id. § 122.26(a)(6).
22. 40 C.F.R. § 122.26(b)(14); see also id. § 122.3 for exclusions from the NPDES program.
25. See Appalachian Energy Grp. v. EPA, 33 F.3d 319 (4th Cir. 1994) (describing EPA’s interpretation that the 402(l)(2) exemption applies only to the oil and gas activity under 40 C.F.R. § 122.26(c)(1)(iii) and not to construction activity under § 122.26(b)(14)(x)).
acre or greater in size. In the face of significant concerns about the impact on oil and
gas production, Congress amended the Clean Water Act to add a definition of “oil and
gas operations”—a term which otherwise appears only in section 402(l)(2)—which
made clear that the term includes “activities necessary to prepare a site for drilling
and for the movement and placement of drilling equipment, whether or not such field
activities or operations may be considered to be construction activities.” 26 In light
of the amendment and applicable EPA regulations, a stormwater discharge from an
oil and gas facility, including a facility under construction, does not require a permit
unless the facility has had a discharge of a reportable quantity of oil or a hazardous
substance at any time since November 16, 1987, or unless the facility contributes to
the violation of a water quality standard. 27

Conditional Exclusion for No Exposure of Industrial Activities and
Materials in Stormwater

EPA regulations exclude from coverage as industrial activity discharges composed
entirely of stormwater (other than construction sites) where there is no exposure of
industrial materials to stormwater. 28 To qualify for the exclusion, the operator of the
discharge must provide a storm-resistant shelter to protect industrial materials from
exposure to stormwater, certify once every five years that there are no contaminated
stormwater discharges from the entire facility, and allow for inspection of the facility
by the permit-issuing authority and by the municipal separate storm sewer systems
(often referred to as MS4s), if the discharge is through an MS4. 29 The certification
requirement is very detailed. The facility must provide its name, address, phone num-
ber, and geographical information, and must further indicate that none of the fol-
lowing materials or activities are, or will be, exposed to precipitation: areas for use,
stORAGE, or cleaning of industrial equipment; materials on the ground from spills or
leaks; materials or products from past industrial activity; material handling equipment
(other than adequately maintained vehicles); materials or products during loading/
unloading or transporting activities; materials or products stored outside (except for
final products intended for outside use, such as cars); materials in open, deteriorated,
or leaking drums, barrels, tanks, or containers; materials or products handled/stored
on roads or railways owned/maintained by the discharge; waste material; application

§ 1362(24)).
27. 40 C.F.R. § 122.26(c)(1)(iii). Following congressional adoption of the new definition of “oil and
gas operations” subject to the exemption in section 402(l)(2), EPA promulgated new regulations that
clarified that a discharge from an oil and gas construction activity that discharged only sediment could
qualify for the exemption even if that sediment discharge contributed to a violation of a water quality
standard. 71 Fed. Reg. 33,628 (June 12, 2006) (codified at 40 C.F.R. § 122.26(a)(2)(ii)). The U.S. Court
of Appeals for the Ninth Circuit subsequently overturned this regulation. NRDC v. U.S. EPA, 526 F.3d
591 (9th Cir. 2008). Although the regulation has been vacated, EPA has not amended its regulations to
reflect this, although it recognizes the provision is no longer in effect. See https://www.epa.gov/npdes
/oil-and-gas-stormwater-permitting#undefined.
28. 40 C.F.R. § 122.26(g).
29. 40 C.F.R. § 122.26(g)(1).
or disposal of process wastewater (unless otherwise permitted); and particulate matter or residuals from roof stacks/vents (unless otherwise regulated).  

A facility that qualifies for the exclusion and submits the required certification does not need to obtain an NPDES permit for its stormwater discharges, unless it is subsequently designated for permit coverage by the permit-issuing authority as contributing to a water quality standards violation or as a significant contributor of pollutants.31

Types of Permit Applications for Discharges Associated with Industrial Activity

Operators of discharges of stormwater associated with industrial activity, like all others in need of permit, are required to obtain either an individual NPDES permit or a general NPDES permit (if an applicable general permit is available). For further details on general permits, see Chapter 4.

Individual Permits. Facilities required to, or choosing to, obtain an individual permit must submit Form 2F—the NPDES application form applicable to discharges composed entirely of stormwater. (All permit applicants must also submit Form 1 when seeking an NPDES permit.)

Form 2F requires facility-specific information, including (1) a detailed site topographic map, (2) the identification of significant materials treated or stored on site and associated management and disposal practices, (3) the location and description of structural and nonstructural controls to reduce pollutants in the stormwater runoff, (4) an estimate of impervious surface areas, (5) a detailed narrative description of facility activities, (6) a certification that stormwater outfalls have been tested or evaluated for the presence of unpermitted non-stormwater discharges, and (7) any existing information on significant leaks and spills to toxic or hazardous pollutants occurring within three years of application submittal.32 In addition, an individual applicant must submit quantitative analytical data from stormwater outfalls collected during storm events.33

General Permits. A general permit application is the other basic alternative available to dischargers of stormwater associated with industrial activity, and the one that most dischargers, as well as EPA and authorized states, appear to prefer. Where EPA has issued a general permit for a group of dischargers, an eligible facility need only submit a notice of intent (NOI) to be covered by the permit. The information requirements imposed in an NOI usually are established in the general permit and generally are far less burdensome than those imposed by an individual or group application. At a minimum, the NOI must request information on the legal name and address of the owner or operator, the facility name and address, the type of facility or discharge, and the receiving stream.34

30. Id. § 122.26(g)(4).
31. Id. § 122.26(g)(3)(iv).
32. Id. § 122.26(c)(1)(i)(A)–(D).
33. Id. § 122.26(e)(1).
34. Id. § 122.28(b).
In 1992, EPA issued its first general permits covering stormwater discharges associated with industrial activity, except for discharges from construction activity. These general permits, which EPA later referred to collectively as the Baseline Industrial General Permit, were applicable in numerous states and territories (and in Indian country) where EPA has permit-issuing authority. Among other things, these general permits required facilities covered to develop and implement stormwater pollution prevention plans (SWPPPs) and to undertake limited monitoring that varies according to the type of industrial activity. These permits also serve as models for states issuing stormwater permits. EPA later replaced the Baseline Industrial General Permits with the Multi-Sector General Permit (MSGP).

Under its 1990 regulations, EPA gave industrial facilities a one-time opportunity to submit a group permit application. The group application process resulted in the issuance of the MSGP, which EPA first issued in 1995, and subsequently reissued a number of times, most recently in 2015. EPA received more than 1,200 group applications representing more than 60,000 different industrial facilities. EPA organized these facilities into 29 different industrial sectors, representing nearly all of the types of facilities (except construction sites) regulated by the Phase I industrial stormwater regulations, including, for example, lumber and wood products facilities; paper manufacturing facilities; chemical manufacturing facilities; asphalt paving and roofing materials manufacturers; stone, clay, glass, and concrete products facilities; primary metals facilities; metal mines; coal mines; oil and gas extraction facilities; quarries; hazardous waste treatment, storage, or disposal facilities; landfills; automobile salvage yards; scrap and waste material processing and recycling facilities; steam electric power–generating facilities; transportation facilities, including bus terminals and airports; wastewater treatment plants; and many others. EPA later expanded the scope of the MSGP to a number of additional industrial categories and terminated the earlier Baseline Industrial General Permit.

The MSGP is similar to the Baseline Industrial General permit in its reliance on requirements for SWPPPs as the primary means to control industrial stormwater discharges, though the MSGP also contains technology-based and water quality–based effluent limitations. The SWPPP requirements establish general management practices and other requirements for inclusion in the permittee's SWPPP. The MSGP also provides tailored SWPPP requirements for facilities that manage hazardous substances in amounts that trigger section 313 of the Emergency Planning and Community

37. 40 C.F.R. § 122.26(c).
38. 60 Fed. Reg. 50,804 (Sept. 29, 1995).
41. Id. at 50,804.
Right-to-Know Act (EPCRA)\(^{43}\) and for salt storage facilities.\(^{44}\) The MSGP initially added, and then expanded over time, numeric effluent limitations for certain industrial categories based on previously promulgated effluent guidelines: discharges from phosphate fertilizer manufacturing,\(^{45}\) asphalt paving and roofing emulsions,\(^{46}\) cement manufacturing materials storage pile runoff,\(^{47}\) discharges resulting from the spray-down of lumber and wood products storage yards (wet decking),\(^{48}\) mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities,\(^{49}\) runoff from hazardous waste and non-hazardous waste landfills,\(^{50}\) runoff from coal storage piles at steam electric generating facilities,\(^{51}\) and discharges associated with aircraft deicing operations.\(^{52}\) Finally, the MSGP includes analytical pollutant monitoring requirements that are tailored for each industry based on the data received in the group application process (and, for the post-1995 permits, monitoring data reported to comply with the earlier permits).\(^{53}\)

For discharges associated with construction activity, EPA issued a Baseline Construction General Permit in 1992\(^{54}\) and reissued it several times, most recently in 2012.\(^{55}\) Similar to the baseline permit for non-construction industrial facilities, the Baseline Construction General Permit contained requirements to submit a NOI to be covered (at least 48 hours prior to commencing construction), a prohibition on discharging sources of non-stormwater, requirements for releases of hazardous substances or oil in excess of reporting quantities, requirements for developing and implementing stormwater pollution prevention plans, and requirements for site inspections. The centerpiece of the Construction General Permit is the pollution prevention plan, which is required to include (1) a site description; (2) a description of controls to be used at the site (e.g., erosion and sediment controls to prevent contaminated runoff during construction, and stormwater management measures, which are structural features built into the site during construction but which are designed primarily to control post-construction pollution); (3) a description of maintenance and inspection procedures; and (4) a description of pollution prevention measures for any non-stormwater discharges that exist. The construction general permits, in essence, federalize existing state or local erosion and sediment control programs, in that the permittee must pro-

\(^{43}\) 42 U.S.C. § 11,023.

\(^{44}\) 65 Fed. Reg. 64,746, 64,766 (Oct. 30, 2000).

\(^{45}\) 40 C.F.R. pt. 418.

\(^{46}\) Id. pt. 443.

\(^{47}\) Id. pt. 411.

\(^{48}\) Id. pt. 429.

\(^{49}\) Id. pt. 436.

\(^{50}\) Id. pt. 445.

\(^{51}\) Id. pt. 423.


\(^{53}\) See id. at 39–46.


vide a certification that its stormwater pollution prevention plan reflects requirements related to protecting water resources that are specified in state or local sediment and erosion plans or stormwater management plans.\textsuperscript{56}

Since 1998, the EPA general permits have generally specified a design requirement for use of temporary sediment basins for projects disturbing ten or more acres based on the 24-hour, two-year storm level.\textsuperscript{57} In 2009, EPA promulgated an effluent limitation guideline that established a numeric turbidity standard for discharges from construction sites of more than ten acres based on the use of sediment basins or other forms of passive stormwater treatment.\textsuperscript{58} EPA subsequently stayed the numeric effluent limit,\textsuperscript{59} and later withdrew it.\textsuperscript{60} The 2012 EPA general permit reflects non-numeric requirements established in the 2009 effluent guideline mandating installation and maintenance of effective erosion and sediment controls and specifying other site controls and pollution prevention measures.\textsuperscript{61}

Discharges from Large and Medium Municipal Separate Storm Sewer Systems

The other major part of the EPA Phase I program regulates MS4s.\textsuperscript{62} EPA regulations define “municipal separate storm sewer” to include any conveyance or system of conveyances that is owned or operated by a state or local government entity, that is designed or used for collecting and conveying stormwater, that is not a combined sewer,\textsuperscript{63} and that is not part of a publicly owned treatment works.\textsuperscript{64}

Systems serving 250,000 or more residents are “large” MS4s; systems serving between 100,000 and 250,000 are “medium” MS4s.\textsuperscript{65} EPA’s regulations identify over 200 cities and counties as having either large or medium MS4s.\textsuperscript{66} The permit-issuing authority also may designate a municipal system as a large or medium system on a site-specific basis due to its interrelationship to a system that otherwise meets the definition of a large or medium system.\textsuperscript{67}

\textsuperscript{56} 40 C.F.R. § 122.44(s) (requiring construction stormwater permits to include qualifying state, tribal, or local erosion and sediment control requirements).


\textsuperscript{59} 75 Fed. Reg. 68,215 (Nov. 5, 2010).

\textsuperscript{60} 80 Fed. Reg. 25,235 (May 4, 2015) (removing and reserving 40 C.F.R. § 450.22(a)–(b)).

\textsuperscript{61} 77 Fed. Reg. 12,286, 12,289–90 (Feb. 29, 2012); see 40 C.F.R. 450.21 (specifying non-numeric effluent limitations for construction sites).

\textsuperscript{62} 40 C.F.R. § 122.26(b)(19).

\textsuperscript{63} A combined sewer system is one that combines municipal sewage with stormwater runoff. It is a point source that must be permitted in accordance with normal permit issuance procedures. 40 C.F.R. § 122.26(a)(7).

\textsuperscript{64} 40 C.F.R. § 122.26(b)(8).

\textsuperscript{65} Id. § 122.26(b)(4), (7).

\textsuperscript{66} Id.

\textsuperscript{67} Id.
Application Requirements for Large and Medium Municipal Separate Storm Sewer Systems

EPA established a detailed two-part application process for large and medium MS4s. Part 1 of the application was a form requiring general information about the MS4, qualitative and quantitative data regarding the quality of the system's stormwater discharges, and a description of existing structural and nonstructural controls to reduce discharges from the system.68 Part 2 of the application form was designed to supplement information obtained in part 1 and to provide municipalities with the opportunity to propose a comprehensive stormwater management plan to control, to the maximum extent possible, discharges from municipal separate storm sewers. The stormwater management plan needed to address four types of pollutant sources: (1) runoff from commercial and residential areas, (2) runoff from industrial areas, (3) runoff from construction sites, and (4) non-stormwater discharges resulting primarily from illicit connections to the system and improper disposal practices.69 All Phase I MS4 permit applications were due no later than 1993,70 and the permit-issuing authority had one year to issue or deny the permit after both parts of the application had been submitted.71

Permits must be obtained for all discharges from both large and medium municipal separate storm sewers. NPDES permits are required for point source discharges through the municipal storm sewers to the waters of the United States. One system-wide permit may be issued to cover all dischargers, either as permittees or as co-permittees72 with the municipality, or distinct permits may be issued for any discharge or category of discharges into the system.73

NPDES Permit Conditions for Municipal Separate Storm Sewer Systems

Section 402(p)(3)(B) of the CWA provides that permits for discharges from municipal separate storm sewers

1. May be issued on a system-wide or jurisdiction-wide basis;
2. Shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and
3. Shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices; control techniques and system, design, and engineering methods; and such other provisions as the EPA administrator or the state determines appropriate for the control of such pollutants.

68. Id. § 122.26(d)(1).
69. Id. § 122.26(d)(2)(i), (iv).
70. Id. § 122.26(e)(3), (4).
71. Id. § 122.26(e)(7)(ii), (iii).
72. Co-permittees are only responsible for compliance with permit conditions relating to the discharge from the municipal system for which they are considered operators. 40 C.F.R. § 122.26(a)(3)(vi).
73. 40 C.F.R. § 122.26(a)(3)(ii).
Through section 402(p)(3)(B), Congress modified the substantive requirements that must be met by municipal stormwater discharges. Such discharges need not meet the technology-based requirements of section 301 of the CWA (either BAT/BCT controls or secondary treatment). Instead, municipal separate storm sewers simply must “require controls to reduce the discharge of stormwater to the maximum extent practicable.” Also, by explicitly allowing for systemwide or jurisdiction-wide permits, section 402(p)(3)(B) avoids the thorny issue of determining where all of the point source discharges occur within a municipal separate storm sewer system, as such systems may have thousands of discharge points and because traditional watercourses are often channelized or paved, making the dividing line between the sewers and the waters of the United States hard to determine.74

One key issue unanswered by section 402(p)(3)(B), however, is whether Phase I municipal stormwater permits must ensure compliance with water quality standards, as required for other NPDES permits pursuant to section 301(b)(1)(C) of the CWA.75 EPA had interpreted the answer to this question to be “yes.” In a 1991 legal opinion issued by EPA's General Counsel, EPA explained that the “maximum extent practicable” standard was designed to modify the technology-based requirements of section 301 but not the water quality–based requirements.76 In 1996, EPA issued its Interim Permitting Approach for Water Quality–Based Effluent Limitations in Storm Water Permits,77 which implicitly reaffirmed the 1991 opinion, but further noted that EPA intended to use best management practices (BMPs) in lieu of numeric effluent limits as the primary means of ensuring compliance with water quality standards in municipal stormwater permits. As EPA explained,

The interim permitting approach uses best management practices (BMPs) in first-round stormwater permits, and expanded or better-tailored BMPs in subsequent permits, where necessary, to provide for the attainment of water quality standards. In cases where adequate information exists to develop more specific conditions or limitations to meet water quality standards, these conditions or limitations are to be incorporated into stormwater permits, as necessary and appropriate.78

74. See, e.g., Los Angeles Cnty. Flood Control Dist. v. NRDC, 568 U.S. 78, 82 (2013), NRDC v. Cnty. of Los Angeles, 725 F.3d 1194, 1197–98 (9th Cir. 2013) (describing LA MS4 system and relationship to Los Angeles and San Gabriel rivers).
9. Wet Weather Regulations

The U.S. Court of Appeals for the Ninth Circuit reviewed EPA's interpretation of section 402(p)(3)(B) and the interim permitting approach in its 1999 decision, *Defenders of Wildlife v. Browner.* The Ninth Circuit disagreed with EPA's interpretation that section 301(b)(1)(C) applied to municipal stormwater permits, saying that the structure of section 402(p)(3)(B) made it clear that Congress intended to “replace[]” the requirements of section 301 with a new standard. The court then went on to rule, nonetheless, that EPA had authority under section 402(p)(3)(B) to “require strict compliance with state water quality standards, through numerical limits or otherwise.”

The court noted that section 402(p)(3)(B)(iii) states that “[p]ermits for discharges from municipal storm sewers . . . shall require . . . such other provisions as the Administrator . . . determine appropriate for the control of such pollutants.” In light of the discretion in that statutory language, the court noted that EPA could require strict compliance with water quality standards or less-than-strict compliance, and could do so through numeric effluent limitations or BMPs, as EPA saw fit.

In the 15-plus years since the Ninth Circuit’s decision, EPA’s policy regarding water quality–based requirements for municipal stormwater permits has evolved. In 1999, EPA announced in response to the Ninth Circuit decision that it would continue to follow the interim permitting approach and include effluent limitations, primarily in the form of BMPs, to meet water quality standards in light of the Ninth Circuit’s decision. EPA subsequently put out memos in 2002, 2010, and most recently 2014 that have moved increasingly toward expecting numeric water quality–based effluent limits in stormwater permits. EPA now envisions that, since stormwater permits have been issued for several cycles, if BMPs are shown to be inadequate to meet WQS and other CWA requirements, permits will need to contain more specific conditions or limitations, including “numeric effluent limits or other quantifiable measures to address water quality impairment.”

**Compliance Deadlines**

Section 402(p)(4) provides that all Phase I discharges must comply with permit conditions as expeditiously as practicable, but in no event later than three years from the date of permit issuance.

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79. 191 F.3d 1159 (9th Cir. 1999).
80. Id. at 1165 (emphasis in original).
81. Id. at 1166.
83. Id.
86. Id. at 3.
87. 40 C.F.R. § 122.42(d).
Phase II Stormwater Discharges

Phase II of the stormwater program covers all stormwater discharges not addressed under the five Phase I categories described previously. Section 402(p)(5) of the CWA required EPA to conduct two studies of Phase II stormwater discharges, identifying additional stormwater sources for possible control and procedures or methods for controlling such sources. Section 402(p)(6) of the CWA further required EPA to issue regulations, based on the (p)(5) studies, that designated additional stormwater discharges that should be regulated to protect water quality and to establish a comprehensive program to regulate such designated discharges. EPA issued its regulations under 402(p)(6) in 1999, extending NPDES permit requirements to discharges from small construction sites and small MS4s. All other Phase II discharges are excluded from NPDES requirements, unless specifically designated as contributing to a violation of water quality standards or as a significant contributor of pollutants.

Discharges from Small Construction Activity

EPA expanded the coverage of the stormwater permit program to cover construction sites that disturb more than one acre of land (or are part of a larger common plan of development that will disturb more than one acre). Unlike sites of more than five acres, however, EPA regulations provide that sites one to five acres in size may qualify for a waiver from permitting requirements if the operator of the site certifies to the permit-issuance authority that (1) the construction site is in a region with a “rainfall erosivity factor” of less than five (as determined by the 1997 USDA handbook Predicting Soil Erosion by Water: A Guide to Conservation Planning with the Revised Universal Soil Loss Equation (RUSLE), or (2) the activity will occur in an area where controls are not needed to protect water quality (based on a total maximum daily load (TMDL) or equivalent water quality analysis). Sites of less than one acre can be designated for permitting by EPA or an authorized state where the discharge has the potential to contribute to a violation of water quality standards or to be a significant contributor of pollutants.

As with larger construction sites, EPA designed its regulatory program with the expectation that most discharges from small construction activity would be regulated through general permits. EPA relaxed the requirement for small construction facilities to submit an NOI to be covered under a general permit, leaving it to the discretion of the permit-issuance authority whether to require small construction sites to submit NOIs, though EPA still requires an NOI for all construction sites covered

88. 64 Fed. Reg. 68,722 (Dec. 8, 1999). The Phase II regulations were largely upheld on judicial review.
90. 40 C.F.R. § 122.26(b)(15).
91. Id. § 122.26(b)(15)(ii)(A).
92. Id. § 122.26(b)(15)(ii)(B).
93. Id. § 122.26(b)(15)(ii).
by its own general permit. For small construction sites that do not obtain coverage under a general permit, the operator must submit the same individual permit application that larger construction sites submit. As with larger construction sites, permits for small construction sites must incorporate appropriate requirements from state, tribal, or local erosion and sediment control programs. EPA has provided guidance for contractors and developers of small residential projects to simplify the process of developing stormwater pollution prevention plans.

Discharges from Small Municipal Separate Storm Sewer Systems

EPA expanded the municipal stormwater program to all MS4s located within a census-determined urbanized area, which the Census Bureau defines generally as a place that is densely settled and contains a minimum population of 50,000. All municipal storm sewers within urbanized areas thus are required to obtain an NPDES permit, although EPA provided a possibility for waiver of requirements for municipalities with populations below 10,000 persons. For an MS4 serving a population of fewer than 1,000, the municipality must show that its municipal storm sewers are not contributing substantially to the pollutant loadings of any larger MS4 to which its sewers are connected and that, if that smaller MS4 is discharging any pollutant of concern to an impaired water body, no additional stormwater controls are needed based on an existing TMDL for that water body. For an MS4 serving a population of 1,000 to 10,000, there is a slightly higher showing: the permit-issuance authority must evaluate all waters to which the MS4 discharges and determine that the MS4 is not discharging pollutants at levels requiring additional stormwater controls (nor will the MS4 have the future potential to cause a violation of water quality standards). Similar to the industrial stormwater program, EPA or an authorized state can designate otherwise unregulated MS4s for permitting where (1) the MS4 has the potential for significant water quality impacts, (2) the state determines a permit is necessary to implement a comprehensive watershed plan, (3) the MS4 contributes substantially to the pollutant loadings of another regulated MS4, or (4) in response to a citizen petition.

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96. 40 C.F.R. § 122.26(c)(1)(ii).
97. Id. § 122.44(c)(1).
99. 40 C.F.R. § 122.32(a)(1).
100. 64 Fed. Reg. 68,751 (Dec. 8, 1999).
101. 40 C.F.R. § 122.32(d).
102. Id. § 122.32(c).
103. Id. § 122.32(a)(2).
104. Id. § 123.35(b)(1).
105. Id. § 123.35(b)(3).
106. Id. § 123.35(b)(4).
107. Id. § 122.26(f).
Like the Phase I program, EPA has based Phase II NPDES permit requirements on development of comprehensive stormwater management plans. Phase II permits must “include terms and conditions to reduce the discharge of pollutants to the maximum extent practicable (MEP), to protect water quality, and to satisfy the water quality requirements of the Clean Water Act.” The small MS4 permit must include requirements for implementing the six “minimum control measures” addressing the following:

1. Public education and outreach on stormwater impacts,
2. Public involvement/participation,
3. Illicit discharge detection and elimination,
4. Construction site stormwater runoff control,
5. Post-construction stormwater management in development and redevelopment, and
6. Pollution prevention/good housekeeping for municipal operations.

The MS4 is required to develop and implement a stormwater management program (SWMP) that identifies the BMPs that the MS4 or another entity will implement for each of the six minimum measures, as well as measurable goals to demonstrate the effectiveness of those BMPs; the MS4 can select BMPs from a list provided by EPA or the authorized state. The permit must also include more-stringent effluent limitations that modify or add to the six minimum controls based on an approved TMDL or equivalent analysis, as needed to protect water quality. Finally, the Phase II permit must contain conditions requiring evaluation of the effectiveness of BMPs in meeting the measurable goals, as well as monitoring, reporting, and record-keeping requirements. Small MS4s that do not wish to adopt a program that includes all of the minimum measures specified in the Phase II regulations may instead apply for a permit using the Phase I MS4 permit application requirements.

One change from the Phase I program is that small MS4s do not necessarily need to apply for and obtain individual NPDES permits covering just their own municipal systems. EPA’s Phase II regulations authorize issuance of general permits for small MS4s, and the MS4 may seek coverage under such a general permit once issued by EPA or the authorized state. EPA and authorized states have two options for authorizing an MS4 to discharge under a general permit. The general permit may either include all required permit terms and conditions, or use a two-step process to provide

108. Id. § 122.34(a).
109. Id. § 122.34(b).
110. Id. § 122.34(d).
111. Id. § 122.34(e)(1).
112. Id. § 122.34(c).
113. Id. § 122.34(a) (allowing a small MS4 to apply for a permit under § 122.26(d)). These requirements have been found to eliminate any concerns under the Tenth Amendment that a municipality is being compelled by the federal government to regulate its citizens. City of Abilene v. EPA, 325 F.3d 657 (5th Cir. 2003); Envtl. Def. Ctr. Inc. v. EPA, 344 F.3d 832, 848 (9th Cir. 2003), cert. denied sub nom. Texas Cities Coal. v. Stormwater v. EPA, 541 U.S. 1085 (2004).
114. 40 C.F.R. § 122.33(b)(1).
the public notice and the opportunity to request a public hearing on an NOI submitted by a small municipality and the proposed additional permit terms and conditions that would apply to the MS4.\textsuperscript{115}

**Phase II Permit Application Deadlines**

EPA generally has allowed small construction sites and small MS4s three years from designation to obtain NPDES permit coverage. Thus, small construction sites initially had to obtain permit authorization by March 10, 2003,\textsuperscript{116} unless the site had been designated previously as contributing to a water quality standards violation or otherwise as a significant contributor of pollutants, in which case the site must have submitted a permit application (or seek coverage under an existing general permit) within 180 days of designation; the 180-day deadline also applied to sites smaller than one acre that are designated.\textsuperscript{117} The deadlines for small MS4s were essentially the same: March 10, 2003, was the deadline for most MS4s.\textsuperscript{118} For MS4s serving populations less than 10,000, the regulations gave the permit-issuing authority the discretion to phase in permit requirements on a five-year schedule through March 8, 2007.\textsuperscript{119} Small MS4s that are designated for permit coverage must submit a permit application within 180 days of designation.\textsuperscript{120}

After the 2010 census, many additional small MS4s became subject to the Phase II requirements because their jurisdiction had become part of an urbanized area.\textsuperscript{121} EPA regulations do not specify the application deadline for newly added MS4s and EPA has not provided any specific guidance as to when such sources should seek permit coverage.

**Concentrated Animal Feeding Operations**

When it passed the 1972 Federal Water Pollution Control Act (Clean Water Act), Congress included within the definition of “point sources” subject to NPDES regulation any “concentrated animal feeding operation . . . from which pollutants are or may be discharged.”\textsuperscript{122} The CWA does not define “concentrated animal feeding operation” (CAFO) or offer any specific guidance as to how discharges from this type of point


\textsuperscript{116} 40 C.F.R. § 122.26(e)(8).

\textsuperscript{117} Id. §§ 122.26(e)(5), 124.52(c).

\textsuperscript{118} Id. § 122.26(e)(9)(i).

\textsuperscript{119} Id. § 123.35(d)(3).

\textsuperscript{120} Id. § 122.26(e)(9)(ii).

\textsuperscript{121} See https://www.epa.gov/npdes/urbanized-area-maps-npdes-ms4-phase-ii-stormwater-permits (providing census maps).

\textsuperscript{122} 33 U.S.C. § 502(14).