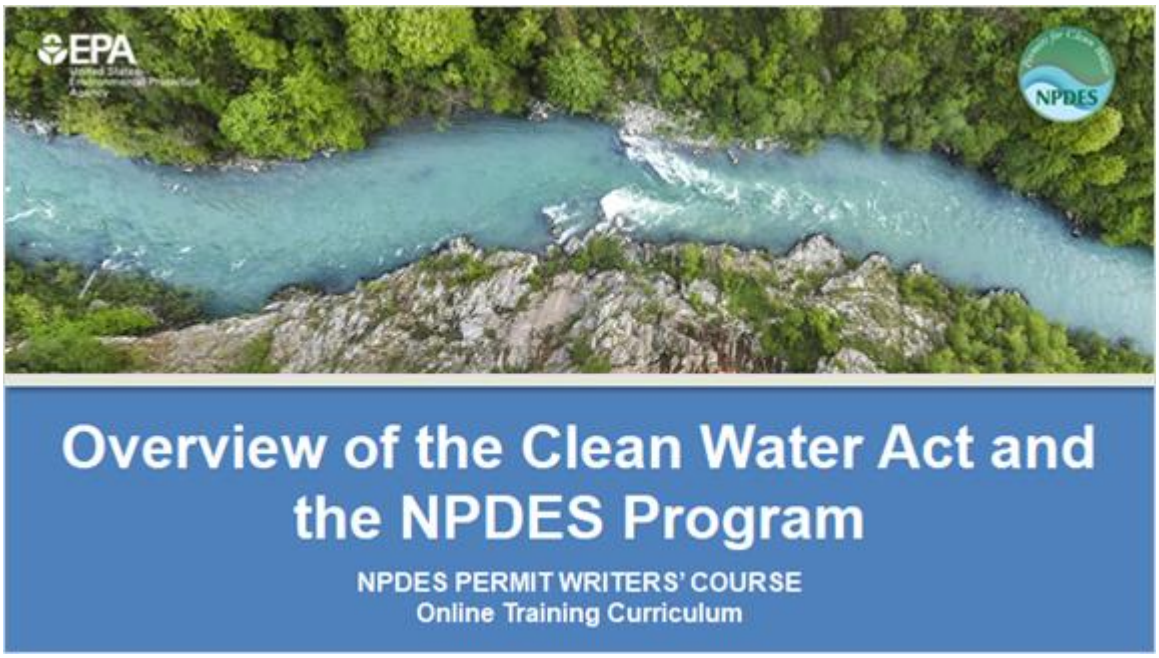
Overview of the Clean Water Act and the NPDES Program

1. NPDES Permit Writers' Course Online Training Curriculum

1.1 Overview of the Clean Water Act and the NPDES Program



Notes:

Welcome to this overview of the Clean Water Act and the National Pollutant Discharge Elimination System, or NPDES, program. This presentation is the first presentation in an online training series on the NPDES program sponsored by the Environmental Protection Agency's Water Permits Division.

You can view this as a stand-alone presentation, or you might be interested in also viewing the next presentation in the series, which covers the regulatory framework of the NPDES program.

Before we get started with this presentation, I'll make some introductions and cover one important housekeeping item.

1.2 Presenters

Notes:

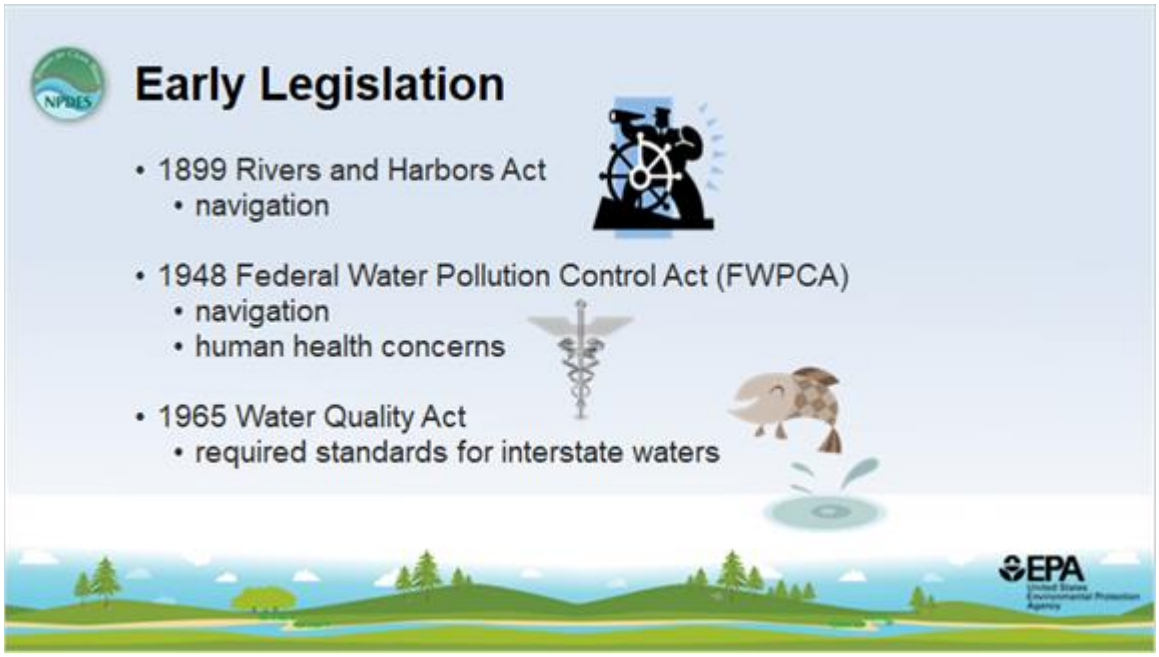
First, the introductions.
Your speakers for this presentation are David Hair, an environmental engineer with the Water Permits Division of USEPA in Washington, DC, and me, Greg Currey, an environmental engineer with Tetra Tech, Incorporated in Fairfax, Virginia.
Now for that housekeeping item. You should be aware that all the materials used in this presentation have been reviewed by USEPA staff for technical accuracy; however, the views of the speakers are their own and do not necessarily reflect those of USEPA. NPDES permitting is governed by the existing requirements of the Clean Water Act and USEPA's NPDES implementing regulations. These statutory and regulatory provisions contain legally binding requirements. The information in this presentation is not binding. Furthermore, it supplements, and does not modify, existing USEPA policy, guidance, and training on NPDES permitting. USEPA may change the contents of this presentation in the future.
Now, let's begin.

1.3 Clean Water Program Development – Selected Legislation and Events

Notes:

In order to understand the structure of the NPDES program and the process for developing and issuing an NPDES permit, it's helpful to know something about the program's history.
Understanding some of the significant legislative and other developments that have affected the NPDES program over the years will give us a better understanding of why the program looks the way it does today.
This slide lists some of these important developments that we'll consider as we move through this presentation.

1.4 Early Legislation



Notes:

Some of the earliest clean water legislation in the United States focused on navigation and ensuring protection of public health.
For example, various sections of the 1899 Rivers and Harbors Act establish permit requirements to prevent unauthorized obstruction or alteration of any navigable water of the United States.
In 1948, the Federal Water Pollution Control Act, or FWPCA, was concerned not only with navigation, but also began looking at human health concerns.
Under this Act, the U.S. Surgeon General was charged with developing comprehensive programs to eliminate or reduce the pollution of interstate waters.
1965 saw passage of the Water Quality Act.

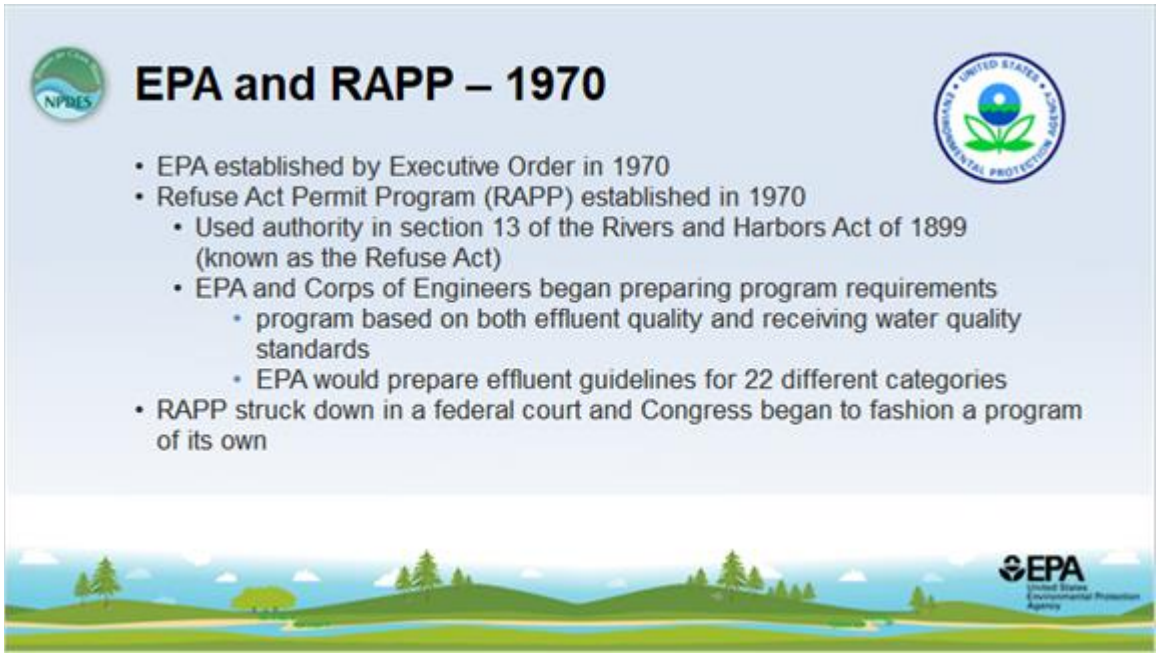
The Water Quality Act created the Federal Water Pollution Control Administration, a predecessor of EPA, and began to focus efforts nationwide on development of water quality standards.

This act gave states one year to develop water quality standards for interstate waters.

Over the next several years, implementation and enforcement of the act were hampered by a lack of progress in developing water quality standards, a burden on the enforcing agency to prove that a discharge was having an impact on water quality in order to require controls, and the lack of criminal or civil penalties for violations.

Despite these implementation problems, the stage was being set for future legislation to address water quality in the nation's waters.

1.5 EPA and RAPP – 1970



Notes:

Departing from our legislative history for a moment, we want to take a look at two executive orders signed by President Nixon in 1970.

On July 9, 1970, the President submitted to Congress Reorganization Plan Number 3 and Plan Number 4 to establish the Environmental Protection Agency and the National Oceanic and Atmospheric Administration.

Later that year, on December 23, another Executive Order established the Refuse Act Permit Program. Under the authority of the 1899 Refuse Act (which is the name given to Section 13 of the 1899 Rivers and Harbors Act), the US Army Corps of Engineers and the newly formed EPA were to prepare program requirements for the Refuse Act Permit Program or RAPP. The Corps of Engineers would administer the program.

This program approached water quality issues differently than implementation under the 1965 Water Quality Act.

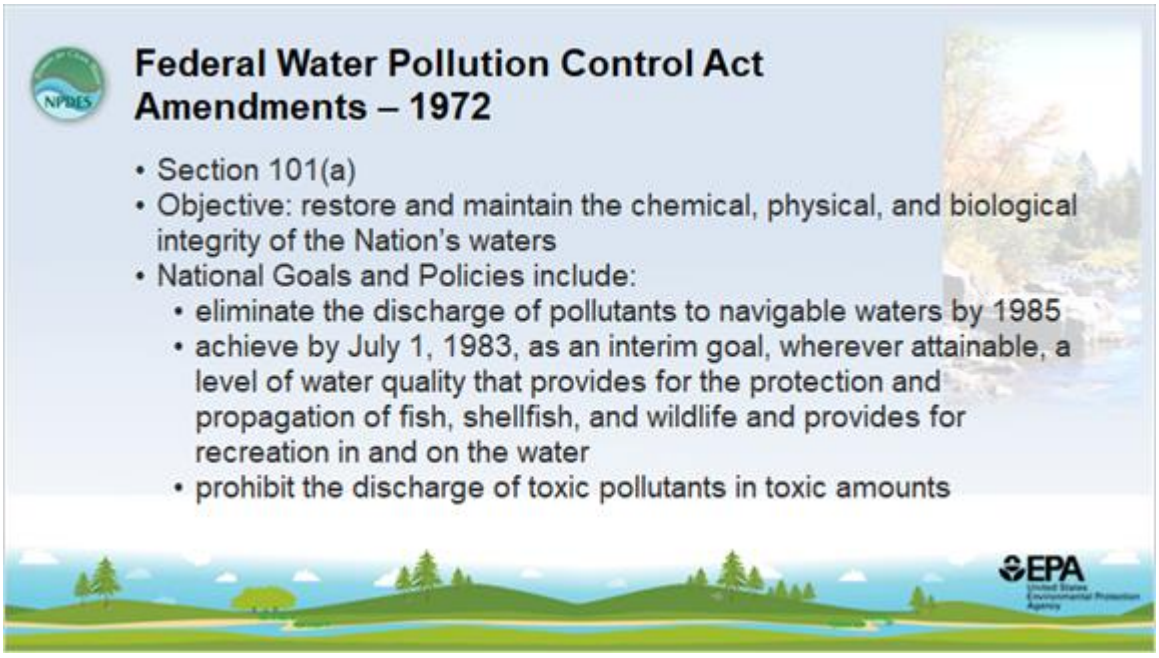
EPA was tasked with developing "guidelines on effluent quality" for 22 different categories of industrial sources of wastewater. A discharger would apply for a permit and the Corps would ask EPA if the proposed effluent discharge was consistent with the newly developed guidelines on effluent quality and with water quality standards developed by states.

States would be asked to examine permit applications and advise EPA on whether or not existing or proposed treatment processes would meet established water quality standards. EPA would review the state's response for interstate waters, then would instruct the Corps whether or not to issue the permit.

The RAPP was struck down in Federal Court because the court found that certain provisions were inconsistent with authorities given in the Refuse Act and with certain provisions of the National Environmental Policy Act.

However, Congress took note and, overcoming traditional differences in their preferred approaches to water pollution control, key lawmakers in the House and Senate began to fashion a legislative program.

1.6 Federal Water Pollution Control Act Amendments – 1972



Notes:

In November 1972, overriding a Presidential veto, Congress enacted the Federal Water Pollution Control Act Amendments, a comprehensive recodification and revision of Federal water pollution control law. These Amendments marked a distinct change in the philosophy of water pollution control in the United States and represented the beginning of the programs and philosophy we know today as part of the Clean Water Act, including the NPDES program.

Under this Act, the Federal government assumed a major role in directing and defining water pollution control programs. In establishing the basis for clean water programs, Congress sought a balance between economics - considering both the costs and benefits of cleanup - and ecology - setting deadlines and ambitious requirements for reducing discharges of pollutants and restoring water quality.

The very first section of this legislation, section 101(a), states its objective, which is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.

Under this objective are several national goals and policies. Two important goals and one policy that relate to the

NPDES program are:

1. eliminate the discharge of pollutants into navigable waters by 1985;
2. achieve by July 1, 1983, wherever attainable, an interim goal of water quality that provides for the protection and propagation of fish, shellfish and wildlife, and provides for recreation in and on the water-you might have heard someone express this goal using the shorthand phrase “fishable and swimmable waters”; and
3. prohibit the discharge of toxic pollutants in toxic amounts.

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We’ll see as we move through this and other presentations that these goals and policy form the foundation for the standards that, in turn, are the basis for effluent limitations and other conditions in NPDES permits. The goal of eliminating the discharge of pollutants is the underlying basis for development of technology-based standards while the “fishable and swimmable” goal and the “no toxics discharged in toxic amounts” policy underlie the development of water quality standards.

1.7 Pollutant Source Control Programs Established by FWPCA Amendments

Notes:

In addition to setting national goals and policies, the Federal Water Pollution Control Act Amendments established control programs for a variety of pollutant sources.

In 1970, Congress had amended the FWPCA to give the federal government broad authority to clean up oil spills, to make the polluter pay the cost of clean-up, and to levy fines and penalties against him. EPA, the Coast Guard, and other agencies administered the law and drafted the National Contingency Plan for removal of oil spills. Section 311

of the 1972 Amendments extended these provisions to the discharge of hazardous substances.

To curb pollution of coastal and navigable waters, EPA was also given authority, in 1970, to set performance standards for marine sanitation devices. These standards were first published in June 1972. Section 312 of the FWPCA amendments provided even broader authority for states to prohibit all discharges of sewage from marine vessels under certain circumstances. Administration of this program is also a cooperative effort between EPA and the Coast Guard.

Section 404 established a program to regulate the discharge of dredged or fill material into waters of the United States. This program is jointly administered by the U.S. Army Corps of Engineers and EPA. The Corps is responsible for day-to-day administration and permit review, while EPA provides program oversight.

Finally, section 402 establishes the NPDES program, which, of course, is the topic for the rest of this presentation.

1.8 Federal Water Pollution Control Act Amendments – 1972

Notes:

Numerous provisions in the 1972 Federal Water Pollution Control Act Amendments established NPDES and related program requirements that make up the structure of the program we have today. Let's take a look at some of these provisions.

First, section 402 specifically authorized the NPDES, pretreatment, and construction grants programs. One important feature of the NPDES program is that the amendments make it clear that a point source cannot discharge pollutants to waters of the United States without a permit.

Along with establishing the permit program, the amendments also established a maximum permit term of five years;

Requirements for both technology- and water quality-based effluent limitations were laid out along with compliance deadlines for meeting these requirements.

Technology-based effluent limitations are required under section 301, embodying the desire for a technology-driven program.

In addition, reflecting the desire for an ecology-driven program, section 301 also requires development of water quality-based effluent limitations where technology-based effluent limitations are not sufficiently protective of water quality.

The amendments provided for authorization of state programs to administer the NPDES program in partnership with EPA. We'll talk about the status of state programs in a later presentation.

Another important provision of this legislation is that it indicated that permit compliance is a shield. In other words, in most cases, if a facility complies with its permit, the facility is considered to be in compliance with all of the relevant and applicable sections of the Act intended to be addressed by the permit.

Finally, the Amendments established penalties for non-compliance, which, you might recall, was a feature missing from the 1965 Water Quality Act.

1.9 Natural Resources Defense Council Consent Decree – 1976

Notes:

Let's depart from the legislative history again for just a moment to talk about an important court case.

Section 307(a) of the 1972 Amendments required EPA to develop a list of toxic pollutants within 90 days and publish standards for them 6 months later.

In the five year period following enactment of the Amendments, EPA's focus was on control of conventional pollutants, such as biochemical oxygen demand and total suspended solids, typically discharged by municipal wastewater treatment plants. Consequently, the Agency published only six standards for toxics.

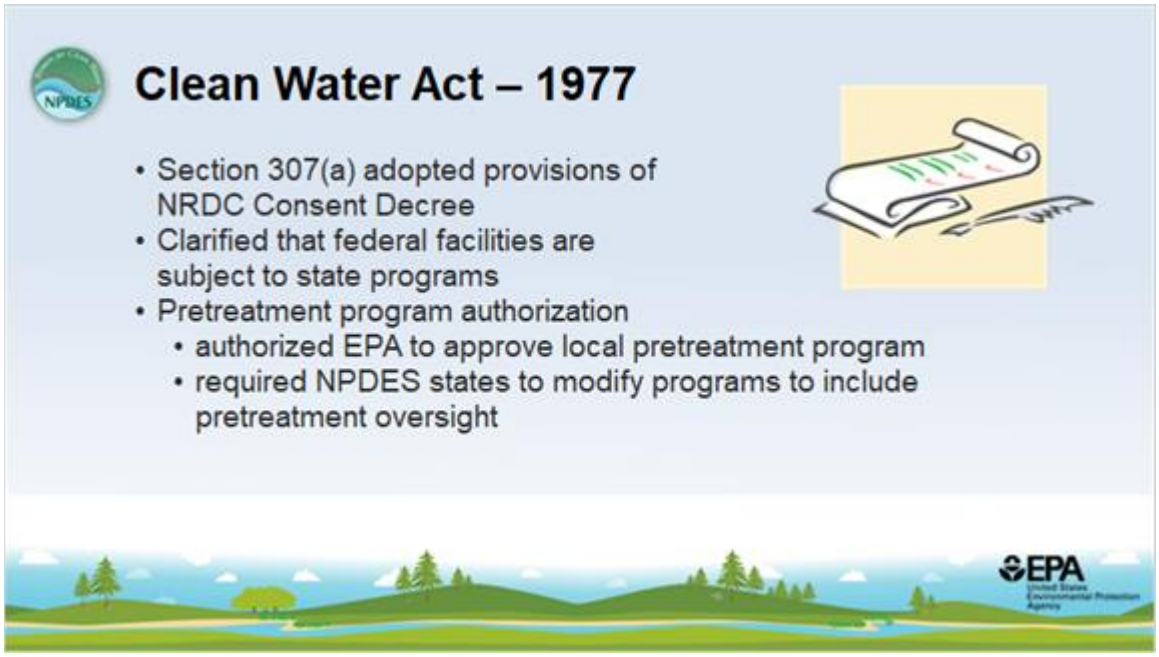
During this time, several groups, including the Natural Resources Defense Council, found EPA's rate of progress unacceptable and pointed out this fact to EPA by way of a lawsuit.

In 1976, EPA entered into a Consent Decree, a court-supervised agreement, with NRDC.

Through this Consent Decree, EPA established lists of 65 classes of toxic pollutants and their compounds and 21 industrial categories most likely to discharge those toxic pollutants. These "primary industries," as they're known, would become the focus of regulation aimed at controlling the discharge of toxic pollutants.

Under the Consent Decree, EPA also had to develop requirements for these toxic pollutants and primary industries by December 31, 1980.

1.10 Clean Water Act – 1977



Notes:

Over the following decade Congress passed two additional major clean water statutes: the Clean Water Act and the Water Quality Act.

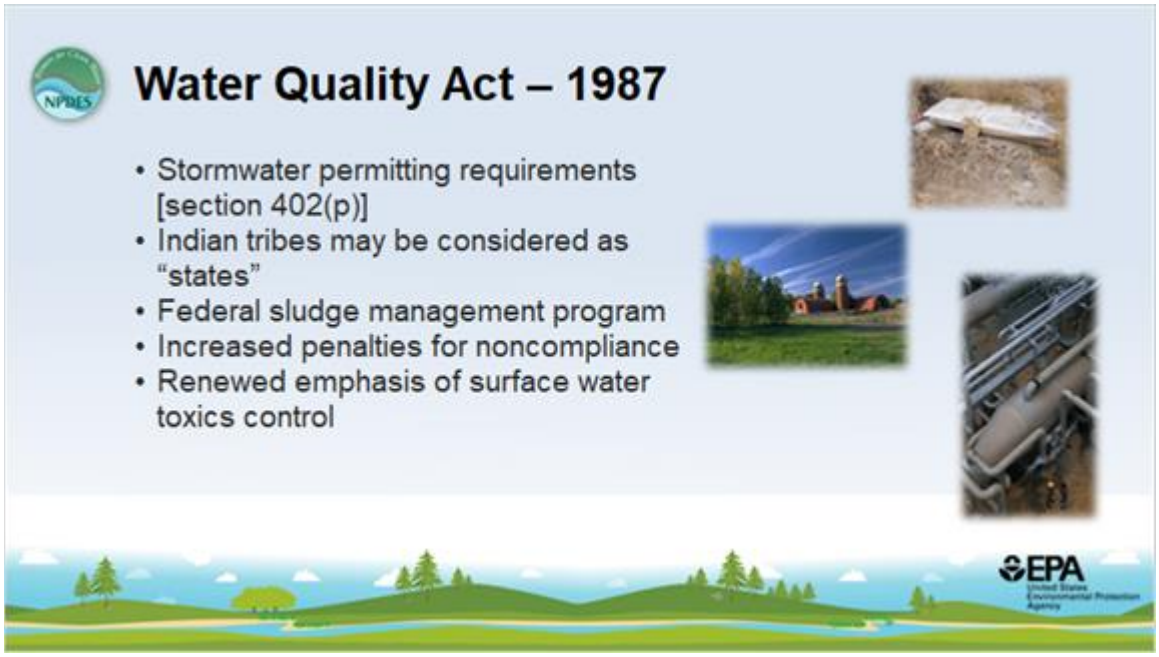
The 1977 Clean Water Act focused EPA's efforts on addressing the priority pollutants listed as a result of the NRDC consent decree, particularly through regulations called effluent guidelines, which set national technology-based requirements for these pollutants.

Important provisions of the 1977 Clean Water Act included:

- adopting the provisions of the NRDC Consent Decree into law;
- clarifying that federal facilities, such as Department of Defense or Department of Energy facilities, are subject to state NPDES programs; and
- authorizing EPA to approve local pretreatment programs so that authorized states could oversee local governments rather than administering the pretreatment programs themselves.
-

We should also note here that the name for 1977 Act, the "Clean Water Act," became the official name for our clean water statute. I guess it rolls off the tongue a bit easier than "Federal Water Pollution Control Act Amendments."

1.11 Water Quality Act – 1987



Notes:

The second major piece of legislation from this time period was the Water Quality Act of 1987.

This Act focused resources on addressing attainment of water quality standards and also on permitting discharges of stormwater.

It clarified that stormwater discharges, including discharges of stormwater associated with industrial activity and municipal separate storm sewer systems, or MS4s, are subject to NPDES requirements.

The 1987 Act also included a provision specifying that Indian tribes can be considered "states" under the Act. This provision means that tribes can develop their own water quality standards and seek authorization to administer the NPDES program. Thus, references to "states" in the Act, or in this presentation, also apply to "tribes."

The 1987 Water Quality Act renewed an emphasis on surface water toxics control by requiring individual control strategies to address toxic "hot spots" in the nation's waters. The procedures developed to implement these requirements in NPDES permits are the same basic procedures still recommended by EPA for developing water quality-based effluent limitations for toxic pollutants.

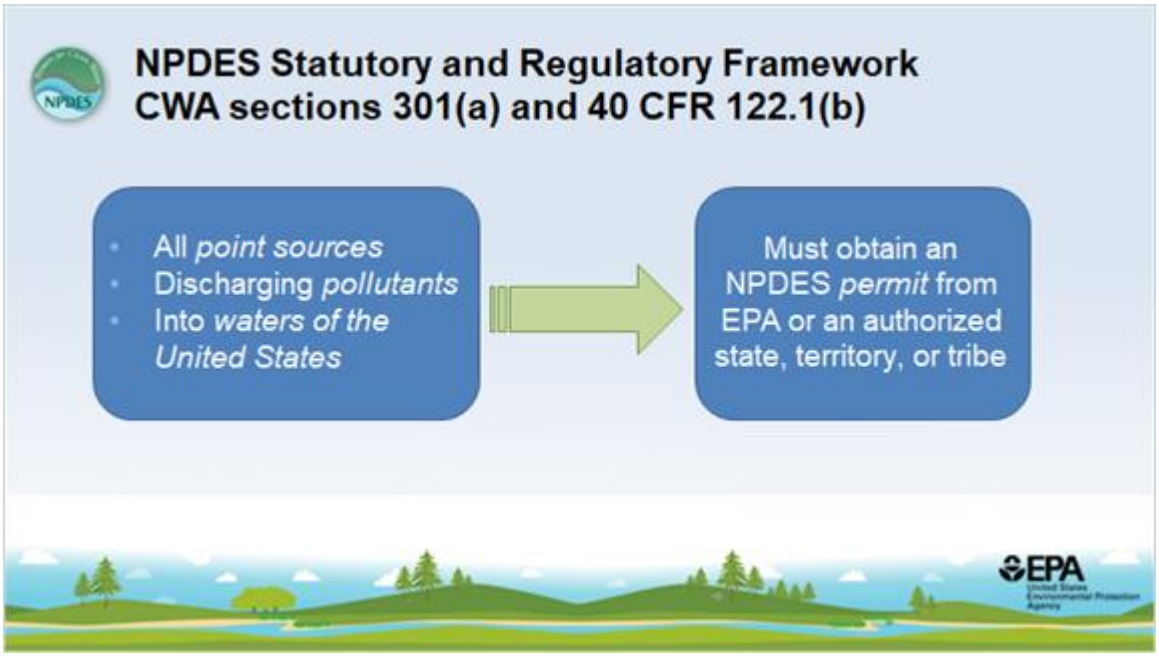
You can find out more about these procedures by viewing the series of four Web-based training presentations on establishing water quality-based effluent limitations. You'll find links to these presentations on the same website where you found the link for this presentation.

Well, that completes our brief history of clean water legislation. I'm going to turn it over to Dave now to look at the

framework for the NPDES program that these statutes have created.

1.12 NPDES Statutory and Regulatory Framework

CWA sections 301(a) and 40 CFR 122.1(b)



Notes:

Thanks, Greg.

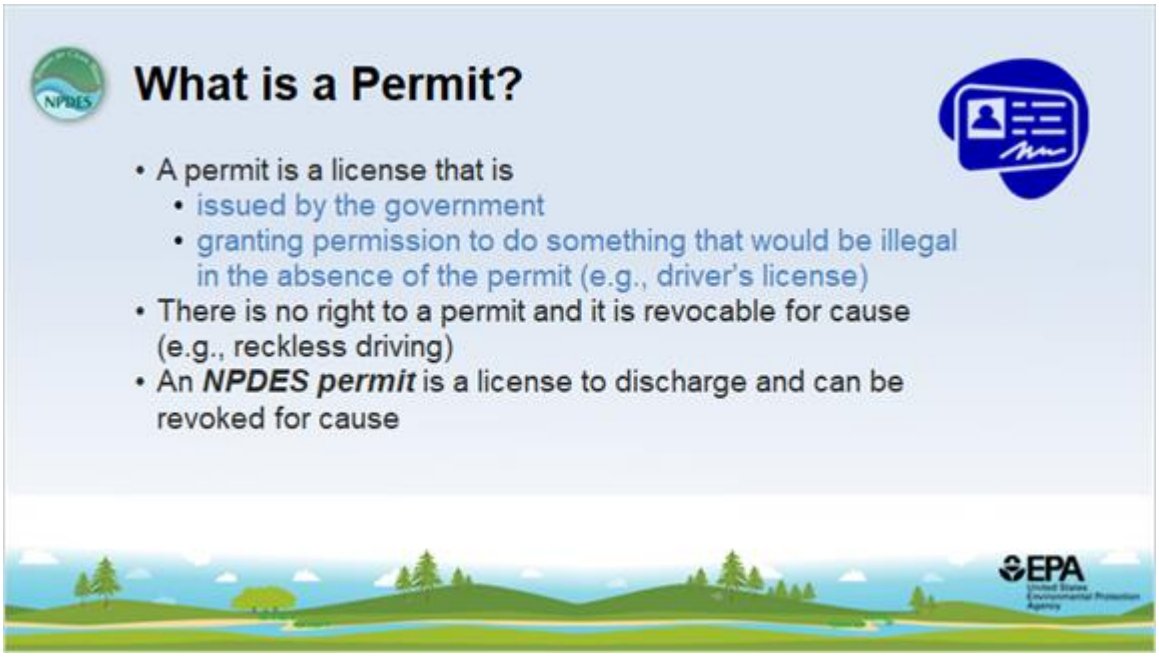
Section 301 of the Clean Water Act states that, except in compliance with several other sections of the Act, including section 402 which lays out requirements for the NPDES program, the discharge of pollutants by any person shall be unlawful.

The regulatory scope of the NPDES permit program derives from this Clean Water Act provision and is provided in the regulations at 40 CFR 122.1(b). This regulation states that the NPDES program requires permits for the discharge of pollutants from any point source into waters of the United States.

To understand the scope and framework of the program, it's important then, to define and understand the meanings of the key terms provided in the regulations, specifically, the terms "permit," "pollutant," "point source," and "waters of the United States." These terms have been established, defined and interpreted by either the Clean Water Act, the NPDES regulations, or the courts.

We'll cover each of these terms in the following slides.

1.13 What is a Permit?



Notes:

Let's start with the first term, and a very basic question, "What is a permit?"

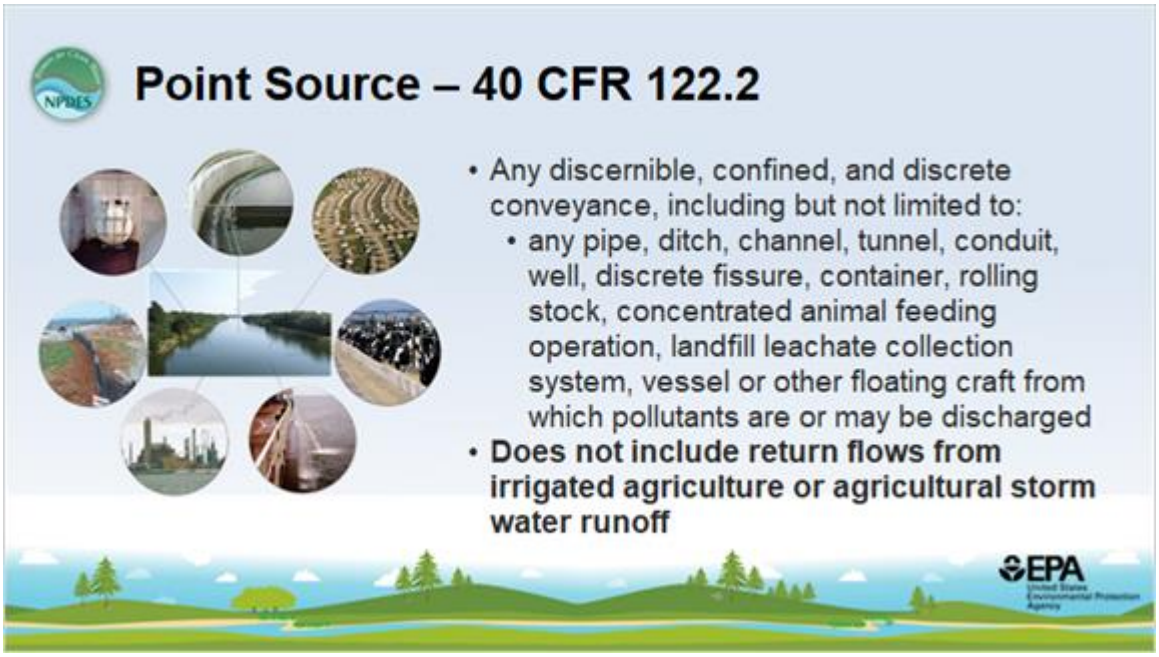
Well, my dictionary defines a permit as, "Permission, especially in written form, such as a certificate, license, or warrant." A very common example of a permit would be a driver's license. A driver's license provides the government's permission to an individual to operate a specific class of motor vehicle. Without the government's permission, it is illegal to drive. Of course you can still do it, but if you get caught driving without a license, you're probably going to be in serious trouble.

Similarly, an NPDES permit provides the government's permission to an owner or operator of a point source, allowing them to discharge pollutants to waters of the United States. Again, a facility could discharge pollutants to waters of the United States without a permit, but if it gets caught, there could be significant penalties.

An NPDES permit is also like a driver's license in that it spells out conditions under which a discharge is permissible. A driver's license might limit or condition your operation of a vehicle so that you can only drive when you wear corrective lenses or, perhaps, only during daylight hours. The types of conditions that must be or may be included in an NPDES permit can be quite a bit more complicated and are based on the requirements established in the Clean Water Act and NPDES regulations.

By understanding that a permit is a license, like a driver's license, it becomes clear that one of the fundamental principles of the Clean Water Act is that an NPDES permit allowing a facility to discharge is a privilege, not a right, and that privilege (in other words, the NPDES permit), like a driver's license, can be revoked for cause.

1.14 Point Source – 40 CFR 122.2



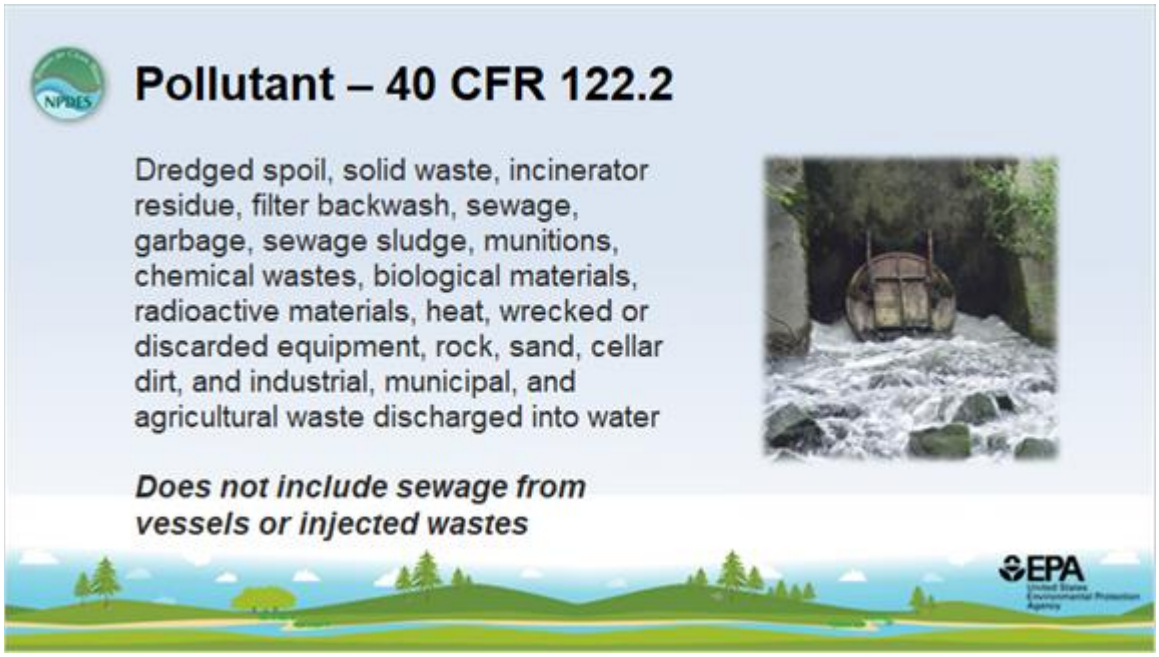
Notes:

Next, let's define the term, "point source." For regulatory purposes, discharges to surface water are generally categorized as either "point sources" or "nonpoint sources." A "point source" is defined in the NPDES regulations at 40 CFR 122.2 and the definition is provided on this slide.

As you can see, the definition is very broad, and includes nearly anything you can think of that could be a source of discharge to a water of the United States. Typically, point sources include discharges from publicly-owned treatment works, or POTWs, industrial facilities, and discharges associated with urban runoff. However, the definition also includes things that are very different from the typical "pipe" that we might envision as a "point source," such as concentrated animal feeding operations, rolling stock, and vessels.

It's equally important to note the sources that are specifically excluded from the point source definition. In establishing the scope of the Clean Water Act, Congress specifically chose to exclude "return flows from irrigated agriculture" and "agricultural storm water" from the definition of "point source;" thus, NPDES permits are not required for these sources.

1.15 Pollutant – 40 CFR 122.2



Notes:

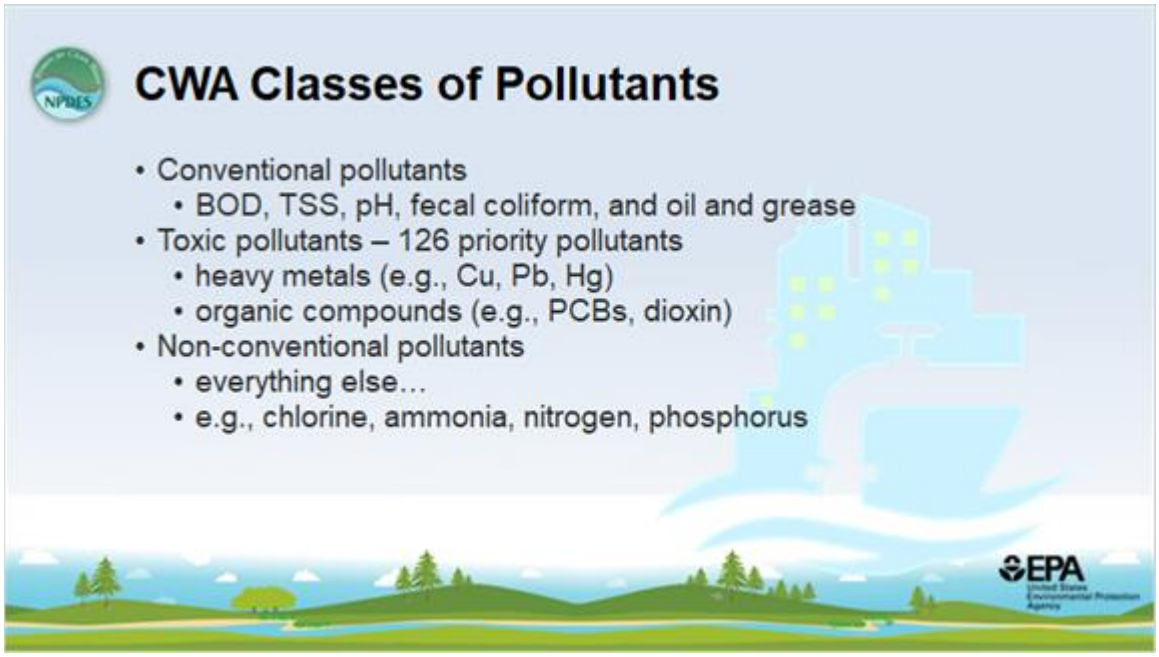
Now let's talk about the term "pollutant."

"Pollutant" is defined in Section 502 of the Clean Water Act, and in the NPDES regulations at 40 CFR 122.2. A slightly shortened, but no less exciting, definition is provided on this slide.

What does the definition tell us? Well the definition relates Congress' intent that almost anything that could be put into or that could change the physical, chemical, or biological characteristics of a receiving water, could be considered a "pollutant." Of course, over the past 30 years of program implementation, EPA and the courts have provided a few interpretive decisions affecting some very specific applications of the definition, but in general, the definition is intended to be very comprehensive and inclusive.

One other important thing to note is that there are two specific exceptions included in the statutory and regulatory definitions. The definition of "pollutant" specifically excludes sewage from vessels and injected wastes, as these types of discharge are addressed through other non-NPDES provisions of the Clean Water Act.

1.16 CWA Classes of Pollutants



Notes:

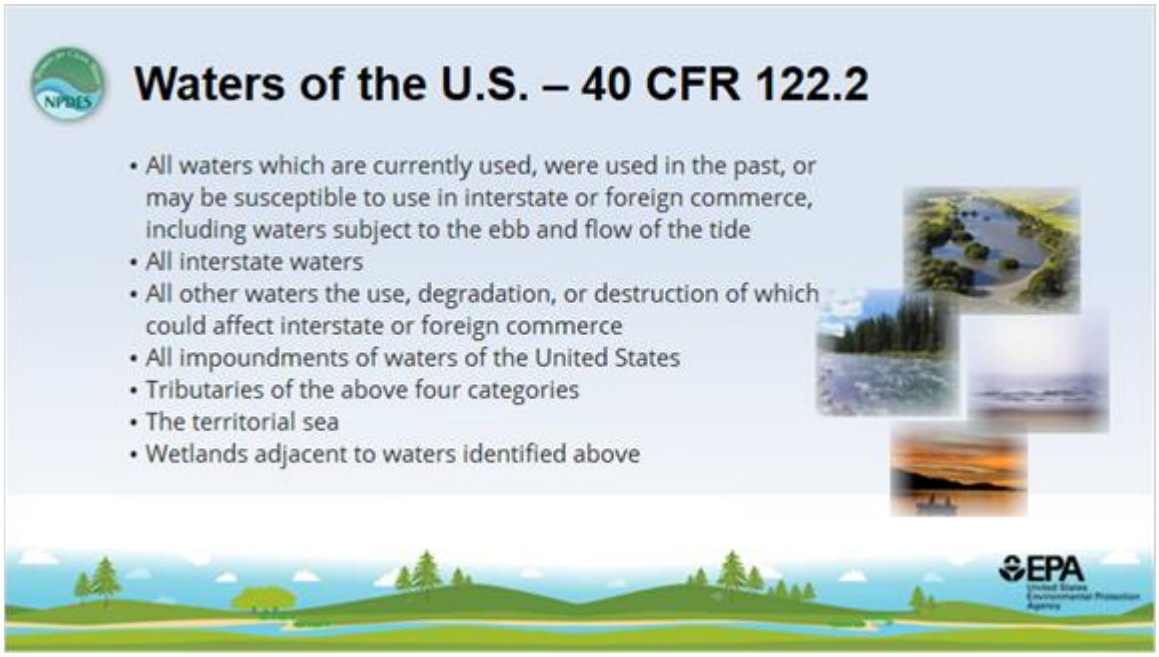
For certain regulatory purposes, such as technology standard setting, Congress established three categories, or classes, of pollutants. These classes include, conventional, toxic, and non-conventional pollutants.

Conventional pollutants are those that are prevalent in domestic wastewater, and are the focus of municipal wastewater treatment processes. The five specific conventional pollutants are listed at 40 CFR 401.16 and comprise biochemical oxygen demand (or BOD), total suspended solids (or TSS), pH, fecal coliform bacteria, and oil and grease.

Toxic pollutants (or "priority pollutants") are a list of pollutants established under Section 307(a) of the Clean Water Act, and incorporate a list of 65 classes of compounds, made up of 126 specific pollutants. These priority toxic pollutants were developed as part of a 1976 Consent Decree that settled a law suit brought by the Natural Resources Defense Council and others. The list of 126 toxic pollutants can be found in Appendix A of 40 CFR Part 423 and includes a variety of heavy metals and toxic organic compounds.

Non-conventional pollutants are basically everything else. In other words, if something is a "pollutant," but it's not specifically listed as a conventional or toxic pollutant, then it falls in the "non-conventional" category. It's important to note, that the term "non-conventional" does not mean "non-toxic." There are many parameters, such as chlorine and ammonia that can be highly toxic to aquatic life, but fall into the non-conventional category.

1.17 Waters of the U.S. – 40 CFR 122.2



Notes:

Let's look another key term to defining the scope of the NPDES Program-"waters of the United States."

"Waters of the United States" is included in the definitions section of the regulations at 40 CFR 122.2. This slide includes the major points of the regulatory definition found at 122.2 and, as you can see, the definition appears quite comprehensive.

1.18 Waters of the U.S. (continued)

Notes:

What kinds of waters would fit into the definition of waters of the United States?

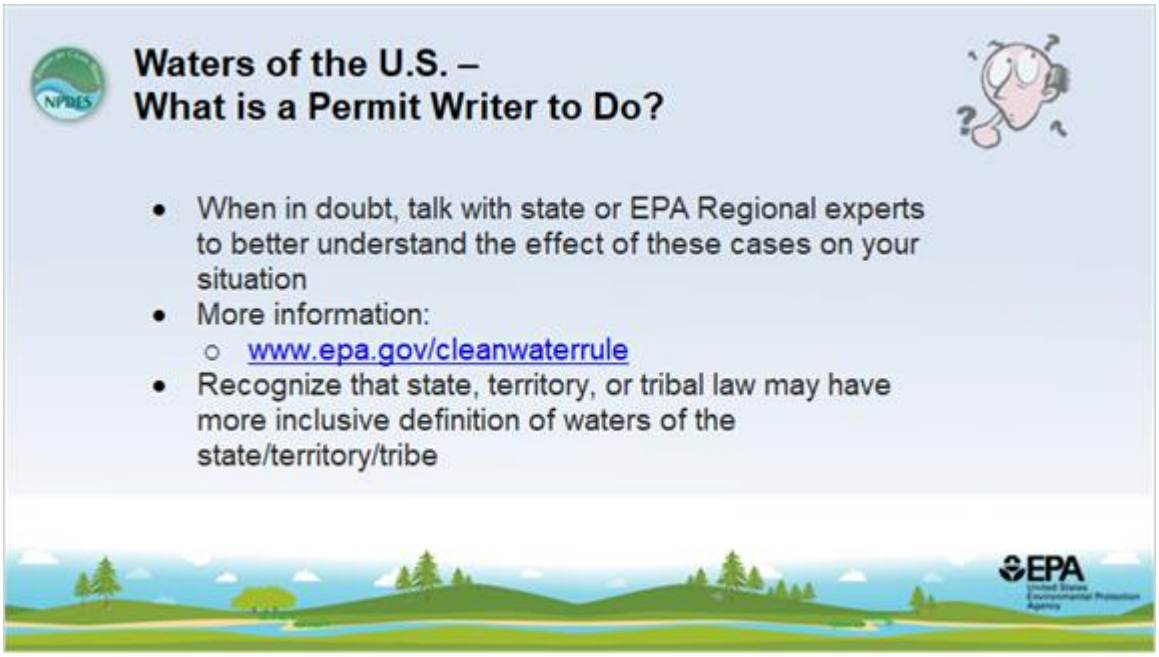
The regulatory definition includes an additional provision that lists and incorporates most typical surface waters features including those shown on this slide. However, the list of included features is no longer quite as simple as it seems.

Over the past decade, the Supreme Court of the United States has ruled in several specific cases, and the effect of these rulings has narrowed what we may now consider a water of the United States.

While important, these changes are somewhat subtle, and beyond what we can cover in this introductory presentation.

1.19 Waters of the U.S. –

What is a Permit Writer to Do?



Notes:

Given these Supreme Court decisions and the current uncertainty over the definition of "water of the United States," what should a permit writer do?

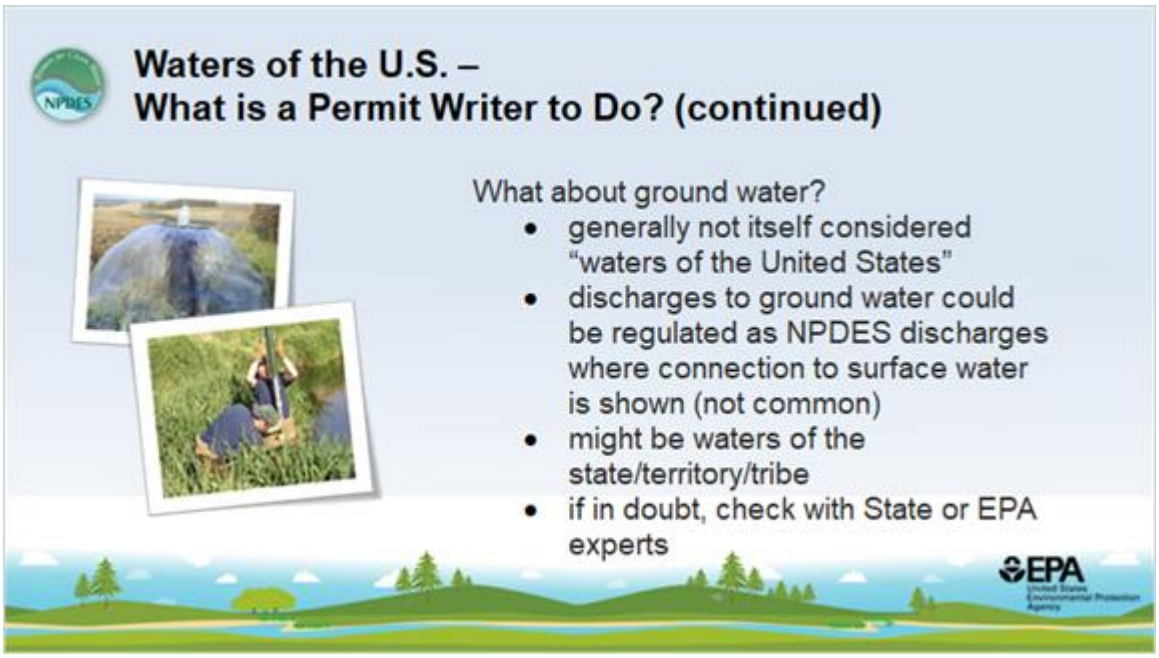
First, where doubt has been raised as to the status of a particular water body with regard to Clean Water Act jurisdiction, permit writers should talk to their state or EPA Regional jurisdictional experts or legal counsel to better understand the effect of these Supreme Court decisions on their specific situations.

Second, stay informed about the latest developments. To help with that, the EPA Web site, where you can find the latest EPA guidance regarding waters of the U.S., is provided in the second bullet on this slide.

Third, remember that even in cases where a water body is not under Clean Water Act jurisdiction, it might still be (and probably will be) considered a "water of the state." Waters of the state are governed under state law and, therefore, discharges to such waters would likely be regulated under a state permitting program.

1.20 Waters of the U.S. –

What is a Permit Writer to Do? (continued)



Notes:

Another question you might be considering is whether or not ground water is considered a water of the United States?

The short answer is that groundwater is not itself considered a water of the United States, so discharges to ground water generally don't require an NPDES permit. However, there are some situations where a federal court has determined that, if the permitting authority demonstrates that there is a "direct hydrologic connection" between the ground water and a surface water, then a discharge to ground water does come within the jurisdiction of the Clean Water Act. This is not a very common occurrence, and there are limitations to when and where it can be applied, so always check with state or EPA experts if this situation arises.

Permit writers should also be aware that, while ground water may not be a water of the United States, it is very likely that it is considered a water of the state and, therefore, subject to state-specific requirements.

1.21 Point Source Dischargers

Notes:

So, in wrapping up this overview of the Clean Water Act and NPDES program, lets take a look at some of the common sources of pollutants to waters of the United States.

As you can see from the slide, pollutants can enter waters of the U.S. through a variety of pathways. As we've discussed, typical point sources include discharges from publicly-owned treatment works and industrial and commercial facilities, including concentrated animal feeding operations.

Some others depicted here are industrial, municipal, and construction stormwater and combined sewer overflows, which we often refer to as "urban wet weather" sources. And, based on a recent court decision, we now include direct application of pesticides and herbicides to waters of the U.S. as a point source.

As we noted earlier, other types of discharge, such as agricultural storm water and return flow from irrigated agriculture, are categorized as nonpoint sources and are not addressed through the NPDES program.