



Module 2

Overview of EPA, the Clean Water Act, and Water Quality Standards


-
- What will we we learn in this Academy?
 - Who plays what roles in protecting water quality?
 - What is the Clean Water Act?
 - What are Water Quality Standards?

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Overview

- 
- EPA - Mission and Function
 - Key Environmental Laws
 - Office of Water - what we do
 - EPA Regions - what they do
 - What do states and tribes do
 - The Clean Water Act (CWA)
 - How are Laws, Regulations and Policy different?
 - Two approaches to water quality control
 - Water Quality Standards (WQS) Overview
 - Where do WQS apply?
 - Example WQS

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What is EPA?

- **Mission - Protect Human Health and safeguard the natural environment**
 - ◆ **Tools: Laws enacted by Congress and the implementing regulations**
- **A Regulatory Agency**
 - ◆ **Regulatory Responsibilities in Air, Water, Solid Waste, Pesticides, Radiation, Toxic Substances and Hazardous Waste**
 - ✍ **No single "Environmental Statute"**
- **A Science Agency**
 - ◆ **Laboratories, Office of Research and Development**

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Source: Water Quality Standards Academy Instructor Manual, Overview Module. March 2002.

Established in the Executive Branch December 2, 1970, pursuant to Reorganization Plan No. 3 No single "environmental Statute"; the laws were enacted when a particular environmental issue was seen as needing national legislative and regulatory action EPA's website: <http://www.epa.gov>

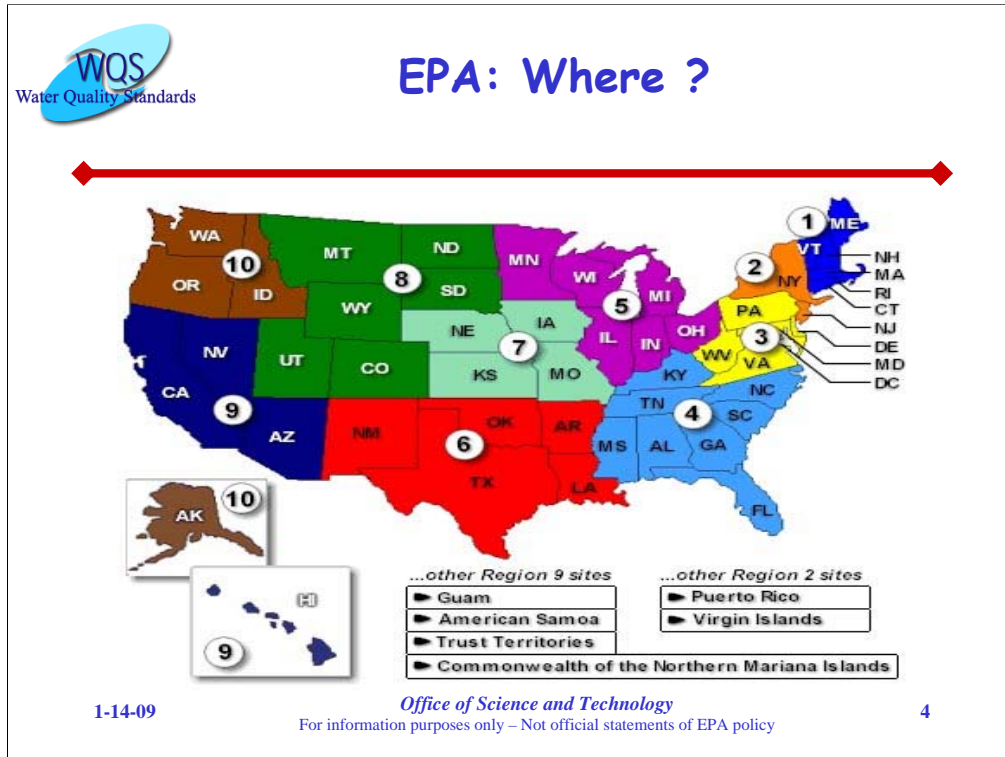
EPA's mission is to protect human health and to safeguard the natural environment - air, water, and land - upon which life depends.

EPA employs app. 18,000 people in Headquarters program offices, 10 regional offices, and 17 labs across the country.


- technically trained staff, more than half of whom are engineers, scientists, and environmental protection specialists,
- in addition to legal, public affairs, financial, and computer specialists.

EPA is led by the Administrator who is appointed by the President of the United States.

- Endeavors to abate and control pollution systematically, by proper integration of a variety of research, monitoring, standard setting, and enforcement activities.
- Coordinates and supports research and anti-pollution activities by State and local governments, private and public groups, individuals, and educational institutions.
- Reinforces efforts among other Federal agencies with respect to the impact of their operations on the environment.
- Designed to serve as the public's advocate for a livable environment
- Based on Research, responsibilities to **Educate** <=> **Regulate**, to reduce the impact of human actions on the environment



EPA has 1 Headquarters in Washington DC and 10 regional offices located throughout the United States. Regional Office locations are shown at the bottom of Handout 2-1.



EPA What?: Seven Major Environmental Statutes

- Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)
- Clean Air Act (CAA)
- Toxic Substances Control Act (TSCA)
- Resource Conservation and Recovery Act (RCRA)
- Comprehensive Environmental Response Compensation and Liability Act (CERCLA)
- Safe Drinking Water Act (SDWA)
- **Federal Water Pollution Control Act (FWPCA), or the Clean Water Act (CWA)**


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EPA is responsible for implementing these important environmental statutes, which include:

- the Federal Insecticide, Fungicide, and Rodenticide Act, or FIFRA;
- the Clean Air Act, or CAA;
- the Safe Drinking Water Act, or SDWA;
- the Toxic Substances Control Act, or TSCA;
- the Resource Conservation and Recovery Act, or RCRA; and
- the Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA [commonly referred to as Superfund].
- the Safe Drinking Water Act, or SDWA
- the Federal Water Pollution Control Act or FWPCA, which is now referred to as the Clean Water Act;

Other environmental laws EPA plays a role in: National Environmental Policy Act,

- Endangered Species Act,
- Marine Protection, Resources and Sanctuaries Act,
- Coastal Zone Reauthorization Act Amendments <http://www.epa.gov/owow/nps/czmact.html>,
- Magnusson-Stevens (Essential Fish Habitat) Act



EPA HQ: Office of Water (OW)

- **Implements:**
 - ◆ **Clean Water Act**
 - ◆ **Safe Drinking Water Act**
 - ◆ **Others (portions)**
- **Structure**
 - ◆ **American Indian Environmental Office**
 - ◆ **Office of Ground and Drinking Water**
 - ◆ **Office of Wetlands Oceans and Watersheds**
 - ◆ **Office of Wastewater Management**
 - ◆ **Office of Science and Technology (OST)**

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Several organizations make up the Office of Water: Office of Wetlands, Oceans and Watersheds, Office of Science and Technology, Office of Wastewater Management and the Office of Ground Water and Drinking Water. Separate fact sheets are available on them. Policy, communications and budget staff support the overall operation of the Office of Water. In addition, Water Divisions in all ten regional offices work with stakeholders to implement all programs.

See: <http://www.epa.gov/ow>:

<http://www.epa.gov/waterscience>

An Organizational Chart for the Office of Water is provided at Handout 2 -2 of your manual. The Office of Water consists of four individual offices. The role of the Office of Water is to provide Agency-wide policy, guidance and direction for EPA's water related programs. These include:

- Water Quality
- Drinking water
- Wetlands
- Marine and Estuarine protection
- Others

. An organization chart for the Office of Water is provided as Handout 2-2 in your manual.



WQS: Who Plays?




- **States, Territories and Indian Tribes with Program Authorization**
- **EPA Regions**
- **EPA Headquarters (Office of Science and Technology) (OST)**

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WQS: States, Territories and Authorized Tribes


- **Adopt, review and revise water quality standards and implementation procedures in a public process (Section 303(c))**
 - ◆ **May adopt standards more stringent than recommended by EPA (Section 510)**
- **May certify that federally licensed activities that may result in any discharge to their waters meet WQS (Section 401)**

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States and Tribes do the “heavy lifting”: They determine the designated uses, adopt the criteria protective of the uses, adopt the antidegradation and implementation procedures. States have primary responsibility for the water quality standards program. When a State (or Indian Tribe) adopts new or revised water quality standards, it is required under section 303(c) of the Clean Water Act to submit the standards to EPA. At least once every 3 years, the State must hold public hearings for the purpose of reviewing applicable water quality standards, and modify and/or adopt standards, where appropriate. This is often called the triennial review. States have the primary authority for establishing and revising water quality standards. This responsibility is given to the States by statute (CWA section 303(c)) and they have no option but to participate in the program. Indian Tribes, however, may or may not assume responsibility for administering the standards program at their option.

The Act and the implementing regulations recognize a state or authorized tribes authority to adopt water quality standards more stringent than those recommended by the Act. EPA may question why such standards are desired by the State or Tribe, but EPA cannot disapprove them for that reason.

States and Tribe also certify that federally licensed activities that may result in a discharge to waters of their state will be consistent with their standards and other water quality goals under Section 401 of the Act



States, Territories and Authorized Tribes, Continued

- **Monitor waters and assess status for 305 (b) and 303 (d) reports**
- **Issue National Pollutant Discharge Elimination System (NPDES) discharge permits (generally)**
- **Tribes: Obtain program authorization**


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They are responsible for monitoring and assessing their waters under Section 305 and assessing their waters under 303(d). EPA approves the assessments under Section 303.

Most states now issue the NPDES permits per section 402. EPA retains the authority to review and object to individual permits

As of April 2009, app. 46 States and the Virgin Islands have been delegated the authority to operate all of or parts of the NPDES program. Most recent data at: <http://cfpub.epa.gov/npdes/statestats.cfm>

Options for tribes to develop water quality standards (discussion in Module 21)



EPA Regions

- **Primary contacts with States and Tribes for Water Programs**
- **Provide Technical Assistance**
- **Consult with Services under Sec. 7 of ESA**
- **Approvals, disapprovals under 303 (c)(4)(a)**
- **Request Administrator “findings” under (4)(b)**
- **Discussion in Module 18, 20**

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- Provide Technical Assistance to states, territories and authorized tribes, particularly on site specific and/or state and tribal specific matters

Consult with Services under Sec. 7 of ESA, for new and revised standards, where approval “may affect” listed species, and develop Biological Evaluations

- Write letters approving or disapproving new and revised state adopted water quality standards. Coordinate with Office of Water when making disapprovals (CWA Section 303(c)(4)(a))
- Request that EPA Administrator make a “finding” that a state or tribe’s existing water quality standards are not adequate to meet the requirements of the Act and that a revised or new standard is necessary (CWA Section 303(c)(4)(b))
- Issue NPDES Permits in states where program has not been delegated
- Review (and object if necessary) to NPDES permits proposed by the State (40 CFR 123.44)

Discussion in Modules 18 (Submittal and Approval) and 20 (Implementation)




EPA Headquarters (OST)

- ◆ Facilitates development of regulations and policies that guide regional review (with Regions and States)
- ◆ Develop and publish 304(a) recommendations
- ◆ Provides informal concurrence on:
 - ✍ disapprovals
 - ✍ approvals that raise significant issues
- ◆ Leads development and financing of promulgations
- ◆ Coordinates with OMB

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The Clean Water Act

- **Objective:** “restore and maintain the chemical, physical and biological integrity of the Nation’s waters”
- **Interim goal:** “water quality which provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water”, wherever attainable

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A copy of the Clean Water Act can be found on your Reference CD and at:
<http://www.epa.gov/lawsregs/laws/cwa.html>.

The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters and, where attainable, to achieve a level of water quality that provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water.

Objective: 101(a)

Interim goal 101(a)(2)


-Interim Goal: by July 1, 1983

(also, national goal of elimination of discharge of pollutants into navigable waters by 1985)

CWA Sec 101(a)(1)

(also prohibition of discharge of toxic pollutants in toxic amounts: CWA 101(a)(3)

We will spend a lot of our time this week talking about what is meant by “the protection and propagation of fish, shellfish and wildlife and recreation in and on the water, wherever attainable.”



Clean Water Act: History (Handout 2-3)

- **Rivers and Harbors Act of 1899**
 - ◆ permits
- **Water Pollution Control Act of 1948**
 - ◆ technical assistance to states
- **Water Pollution Control Act of 1956**
 - ◆ financial assistance to states for treatment plants
- **Water Quality Act of 1965**
 - ◆ first federal water quality standards program, for interstate water
- **Clean Water Restoration Act of 1966**
- **Federal Water Pollution Control Act Amendments of 1972 (Clean Water Act)**

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To fully understand the significance of the Clean Water Act, we will take a brief look at the history of water legislation in this country. A summary is provided in Handout 2-3 of your manual.

The Refuse Act of 1899 was intended to protect navigable waterways from pollution. Although the law was minimally enforced, it is significant because it contained the concept of a discharge permit.

The Water Pollution Control Act of 1948 required that technical assistance be provided to the States. The Federal Water Pollution Control Act of 1956 provided for pollution studies and development of local sewage disposal plants. These laws had little impact on water quality.

The Water Quality Act of 1965 created the first Federal water quality standards program. The Clean Water Restoration Act of 1966 increased Federal involvement; however, this was limited to interstate waters.

Through the 1950s and 1960s, the emphasis of water pollution control enforcement was centered primarily on the States' ability to set ambient water quality standards, develop plans to achieve those standards, and implement the plans.



Clean Water Act: Provisions Handout 2-4

- **Section 101 - Goals and Policy**
- **Section 301 - Technology Based Effluent Limits**
- **Section 302 - Water Quality Based Effluent Limits**
- **Section 303 - WQ Standards and Implementation**
- **Section 304 - Information and Guidelines**
- **Section 305 - Water Quality Inventory**
- **Section 306 - National Performance Standards**
- **Section 307 - Toxics and Pretreatment Standards**
- **Section 308 - Inspection, Monitoring and Entry**
- **Section 309 - Enforcement**

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Major provisions of the Clean Water Act pertaining to water quality are identified in Handout 2-5 of your manual.


The first number of the section indicates the Title of the Act in which that section is located. We will spend more time on some Section of the act than others.

Section 303 authorizes the States and authorized Indian Tribes to establish water quality standards and water quality management plans.

Section 304 authorizes EPA's development of water quality criteria recommendations and authorizes a long term program to produce the information needed for water quality standards.

The list of priority pollutants in section 307(a) contains 65 compounds and families of compounds that are among the most persistent, prevalent, and toxic chemicals known to man. These 65 compounds and families of compounds were translated into 126 individual toxic pollutants in order to develop effluent limitation guidelines.

The National Pollutant Discharge Elimination System, known as NPDES, was established under section 402. Permits are required for all point sources from which pollutants are discharged to navigable waters. An NPDES permit is required for any direct discharge from new or existing sources. Indirect discharges through publicly owned treatment works (or POTWs) are regulated under a separate program.



Clean Water Act: Provisions (cont'd)

- Section 316 - Thermal Discharges
- Section 319 - Nonpoint Source Management
- Section 320 - National Estuary Program
- **Section 401 - State/Tribal Certification**
- **Section 402 - Point Source Permitting (NPDES)**
- Section 404 - Dredge and Fill Permitting
- Section 505 - Citizen Suits
- Section 510 - State/Tribal Authority
- Section 516 - Reports to Congress
- **Section 518 - Indian Tribes**


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The 1987 amendments added section 402(p), which requires EPA to establish the stormwater permit program. *Cities with a population greater than 250,000 were required to file permit applications by February 1990. The compliance date for cities with a population greater than 100,000, but less than 250,000, was February 1991. Industries with stormwater discharges were also required to file permit applications by February 1990. The permits issued must reduce pollutants to the maximum extent practicable for municipalities, or to technology-based requirements for industry. We will discuss technology-based limitations later in the module.*

Section 404 of the Clean Water Act regulates discharges of dredged or fill material into waters of the United States, including wetlands. (*Wetlands generally include swamps, marshes, and similar areas.*)

Section 311 of the Act prohibits discharges of oil or hazardous substances in quantities that may be harmful to waters of the United States. Section 311 also provides for the cleanup of these spills and requires preparation of plans for spill prevention, control, and countermeasures. This section is administered by EPA's Office of Solid Waste and Emergency Response (OSWER).

CWA Available at <http://www.epa.gov/lawsregs/laws/cwa.html>



CWA: Technology Based Approach (Section 301)

- **Effluent limits for industrial dischargers to surface waters and Publicly Owned Treatment Works (POTWs)**
- **Effluent Limits for Publicly Owned Treatment Works (“secondary treatment”)**
- **Based on performance of treatment and control technologies, not impacts to receiving waters**

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Technology Based Approach:

[Www.epa.gov/waterscience/guide/](http://www.epa.gov/waterscience/guide/)

Effluent guidelines are national standards for wastewater discharges to surface waters and publicly owned treatment works (municipal sewage treatment plants). The standards are technology-based (i.e. they are based on the performance of treatment and control technologies); they are not based on risk or impacts upon receiving waters. Effluent limitations guidelines and standards are industry-specific, technology-based standards that limit the amount of industrial wastewater pollutants being discharged into the nation's waters either directly to surface waters or indirectly through Publicly Owned Treatment Works (POTWs). Although the guidelines are developed based upon particular technologies, EPA does not require that dischargers use these technologies. Individual facilities may meet the requirements using whatever combination of treatment technologies and process changes they choose. Since 1974, EPA has promulgated effluent limitations guidelines and standards for over 50 industrial categories.

Effluent limitations guidelines and standards are implemented through the National Pollutant Discharge Elimination System (NPDES) permit and national pretreatment programs and include the following:

Best Practicable Control Technology Currently Available (BPT)

Best Available Technology Economically Achievable (BAT)

Best Conventional Pollutant Control Technology (BCT)

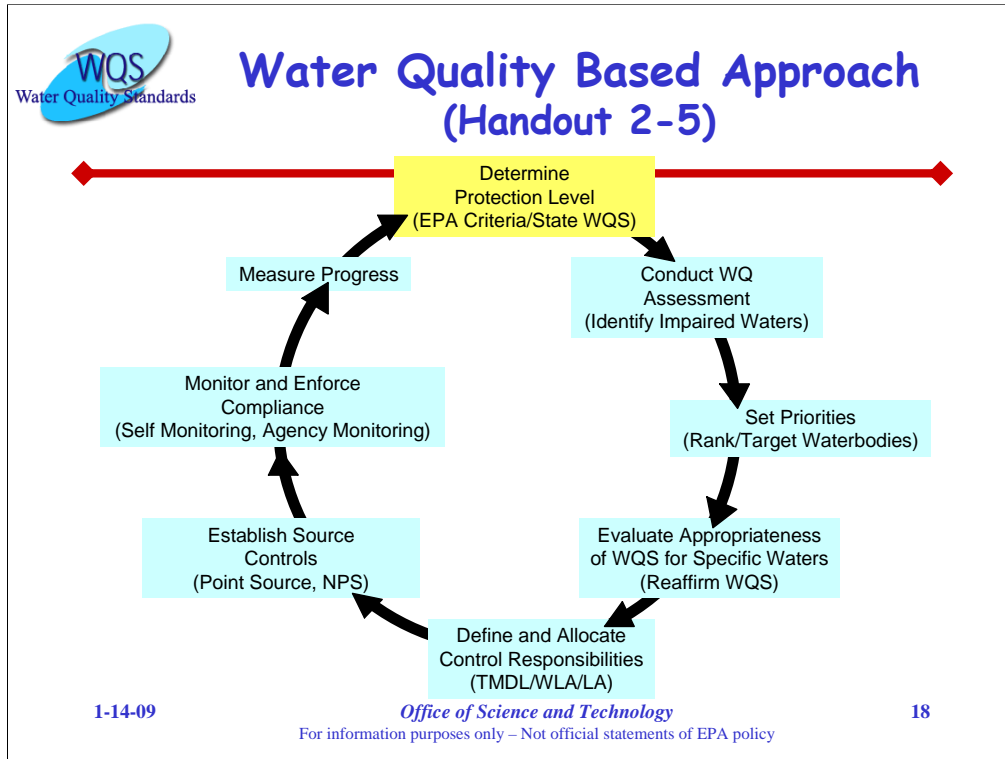
New Source Performance Standards (NSPS)

Pretreatment Standards for Existing Sources (PSES)

Pretreatment Standards for New Sources (PSNS)


The pretreatment standards (PSES, PSNS) are applicable to industrial facilities that discharge process wastewater discharges to POTWs. The effluent limitations guidelines and new source performance standards (BPT, BAT, BCT and NSPS) are applicable to industrial facilities that discharge process wastewaters to waters of the United States

Examples: Iron and Steel Mfg, CAFOs, Leather Tanning and Finishing, Metal products and machinery, transportation equip cleaning



Handout 2-5

Water Quality Based Approach is outlined in Sec. 302 of the Act




What are Laws?

- Passed by Congress, signed by the President
- Published in the United States Code (U.S.C.) (<http://www.gpoaccess.gov/>)
- Clean Water Act is 33 U.S.C. 1251-1587

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US Code is also at: <http://www4.law.cornell.edu/uscode/index.html>

The House of Representatives standardizes the text



What are regulations? (1)

- Have the force and effect of law
- A “must”
- Involves “notice and comment” rulemaking
- May involve Office of Management & Budget (OMB)
- Agency develops rationale and proposed regulation and publishes it and requests comment in the Federal Register (FR):
<http://www.regulations.gov>

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Congress authorizes certain agencies (like EPA) to develop regulations.

Issued by regulatory agencies to implement laws.

Office of Management and Budget may be involved. They may waive their review of certain classes of rules (e.g., rules that affect only one state).

Authorized agencies determine if a regulation MAY be needed. The agency researches it and, if necessary, proposes a regulation. The proposal is listed in the Federal Register so that members of the public can consider it and send their comments to the agency.



What are regulations? (2)

- Agency considers all comments, revises proposed regulation accordingly, and publishes final rule
- Once regulation is published in Federal register as a Final Rule, it is Codified by being published in the Code of Federal Regulations (CFR)
(<http://www.gpoaccess.gov/>)

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The agency considers all the comments, revises the regulation accordingly, and issues a final rule. At each stage in the process, the agency publishes a notice in the Federal Register. These notices include the original proposal, requests for public comment, notices about meetings where the proposal will be discussed (open to the public), and the text of the final regulation. (The Federal Register also includes other types of notices, too.)

Twice a year, each agency publishes a comprehensive report that describes all the regulations it is working on or has recently finished. These are published in the Federal Register, usually in April and October, as the Unified Agenda of Federal and Regulatory and Deregulatory Actions.

Once a regulation is completed and has been printed in the Federal Register as a final rule, it is "codified" by being published in the Code of Federal Regulations (CFR). The CFR is the official record of all regulations created by the federal government. It is divided into 50 volumes, called titles, each of which focuses on a particular area. Almost all environmental regulations appear in Title 40. The CFR is revised yearly, with one fourth of the volumes updated every three months. Title 40 is revised every July 1.
(<http://www.epa.gov/epahome/lawintro.htm>)




What are regulations? (3)

- 50 volumes in the Code of Federal Regulations, called Titles, each focused on a particular subject
- Almost all environmental regulations are at Title 40 "Protection of Environment"
- <http://www.gpoaccess.gov/>
- **Basis for disapproval of water quality standards**

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What is Guidance or Policy?

- “should”
- notice and comment not required
- not binding on Agency or Public
- may involve OMB Review
- **not a basis for disapproval**
- Governed by section 553 of the Administrative Procedure Act: <http://www.archives.gov>
- example: <http://www.epa.gov/waterscience/standards/policy.htm>


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<http://www.epa.gov/epahome/lawintro.htm>

Guidance and Policy does not and should not create a “binding norm”

Guidance and Policy cannot limit the agency’s action in a particular instance.

A recent decision of the D.C. Circuit concerning a EPA PCB guidance document underlines these principles. *General Electric Company v. Environmental Protection Agency*, 290 F.3d 377 (D.C. Cir. 2002) (vacating EPA’s guidance document concerning permissible risk assessment techniques for parties wishing to use alternative methods for disposal of PCBs than those provided for in the PCB regulations)



Water Quality Standards (see 40 CFR 131.3)

- **Provisions of State/Tribal (or Federal) Law**
 - ◆ Designated Uses
 - ◆ Criteria to protect those uses
 - ◆ Antidegradation policy

- **Water Quality Standards are to:**
 - ◆ Protect public health or welfare
 - ◆ Enhance the quality of the water
 - ◆ Serve the purposes of the Act

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Now, we'll begin our discussion on the water quality standards program. The water quality standards program is a joint effort between States, including authorized Indian Tribes, and EPA. The program was created by the Water Quality Act of 1965 and was expanded by the 1972 Clean Water Act. The current regulation implementing the water quality standards requirements was published on November 8, 1983 in the *Federal Register* (48 FR 51400), and it is codified in Title 40 of the *Code of Federal Regulations (or CFR)*, Part 131. This regulation contains the requirements and procedures for developing, revising, and approving State and Indian Tribal-adopted water quality standards and for promulgation of State and Tribal standards by EPA.

The Water Quality Standards Regulation was provided to you in your packet. The Water Quality Standards Handbook contains policies and guidance on the Water Quality Standards Program. It will be provided to you on CD and is available at:
<http://www.epa.gov/waterscience/standards/policy.htm>

We will now begin our discussions on the important role water quality standards play in protecting our Nation's waters. We will provide a general overview of the water quality standards program and Federal and State and Indian Tribal roles in developing water quality standards. More detailed discussions of all the basic elements will follow over the next 4 days.




Water Quality Standards, cont'd (see 40 CFR 131.3)

- 
- **Water Quality Standards**
 - ◆ **Establish water quality goals for a waterbody**
 - ◆ *Provide a regulatory basis for controls beyond technology-based limits*

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Designated Uses (40 CFR 131.10)

- **Protection and propagation of fish, shellfish and wildlife**
- **Recreation in and on the water**
- **Public water supply**
- **Agriculture**
- **Industry**
- **Navigation**
- **Others**
- **Discussed in Modules 3 and 4**

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States and authorized tribes are required to designate uses of a waterbody or segment of a waterbody consistent with the “protection and propagation / recreation in and on, where attainable” goal of the Clean Water Act. Creation of a use classification system is the State's choice. EPA has no specific recommended way of classifying waters. The basic water uses mentioned in the Clean Water Act should, however, be reflected in State and Tribal use classification systems.


Wherever attainable, water quality standards should provide water quality for:

- the protection and propagation of fish, shellfish, and wildlife;
- recreation in and on the water; (swimming, wading, boating)

In addition, states and tribes must establish uses for their waters taking into consideration their use and value for:

- public drinking water supplies; and
- agricultural, industrial, cooling, and other purposes, including navigation.

When designating uses, States and Tribes must consider extraterritorial effects (i.e., downstream, or even potentially “upstream” in tidal waters) in their water quality standards. Therefore, the water quality standards in a state or tribe must provide for the attainment and maintenance of the downstream water quality standards. A complete discussion of waterbody uses is contained in Module 3.



Water Quality Criteria (40 CFR 131.3)


- Discussed in Sections 304(a) and 303(c) of the Act
- A concentration, level or narrative statement
- Represent a level of water quality that supports a particular use
- When criteria are met, water quality will protect the designated use

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The second component of the Water Quality Standards program is water quality criteria. Water quality criteria are limits on a particular pollutant or limits on a condition of a waterbody designed to protect and support a designated use. States and Indian Tribes adopt water quality criteria as part of their water quality standards. States/Tribes can consider which criteria are needed to protect the designated use and then incorporate these criteria into their water quality standards.

Section 131.11 of the Water Quality Standards Regulation covers water quality criteria. Water quality standards include criteria, defined as either numeric limits or narrative statements, that establish the levels of a pollutant that, if met, will allow the use to be attained. Criteria are *scientifically defensible* and must be set to protect the designated uses fully. EPA produces water quality criteria *recommendations* under section 304(a) of the Act. These criteria are used as the basis for State water quality standards. However, the regulation allows the States to develop their own criteria or make site-specific modifications to EPA's recommendations. The 304(a) criteria are scientific recommendations and are not Federal standards. EPA'S Water quality criteria recommendations include aquatic life criteria, human health criteria, biological criteria, and nutrient criteria. Water quality criteria have no force of law until they have been incorporated into State and Tribal water quality standards and approved by EPA. A discussion of each type of water quality criteria will be presented during this training course. We'll also spend some time discussing site-specific criteria that are developed to reflect site-specific or local environmental conditions.

Under section 304(a) of the Act, EPA has also developed recommendations for water quality parameters, such as dissolved oxygen, pH, temperature, etc. Water quality criteria are elements of State water quality standards, expressed as constituent concentrations, levels or narrative statements, representing a water quality that supports a particular designated use. When criteria are met, water quality will generally protect the designated use (40 CFR 131.3). When appropriate criteria are selected for a particular waterbody, and when water quality in that waterbody meets all the criteria, the designated use should be protected. We discussed designated uses in Module 3. They include public water supplies, propagation of fish and wildlife, navigation, and other uses.



Water Quality Criteria 1 Word - 2 Meanings

- ◆ Scientifically defensible guidance developed and published by EPA per CWA § 304(a)**

✍ Basis for Federal promulgation when necessary
- ◆ Adopted part of State/Tribal WQS**

✍ Section 303(c)

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One frequent question regarding criteria: How much time do states and authorized tribes have to adopt new or revised criteria after EPA publishes them?

- When EPA releases new or updated 304(a) criteria guidance, States generally have about 5 years to adopt numerical criteria ‘as protective as’ this recommended criteria value where they are necessary to protect the designated use.
- The reason a lag time is allowed is to give States time to consider incorporating new or revised criteria into their WQS early in the triennial review process.
- For example, if a State is at the start of its triennial review process, say within the first year of the three year process, it is likely that they have sufficient time to incorporate a new or revised numerical criteria ‘as protective as’ EPA’s recommended criteria value into that triennial review three year process. After the first year, it is likely that the State held a hearing on its proposed new or revised WQS, and it may be difficult/cumbersome to add new changes to the WQS and stay within the three year clock. In these situations, EPA generally allows States to finish that triennial review process without incorporating EPA’s new or revised criteria into the WQS, and incorporate the new or revised criteria value in the next triennial review cycle.
- the reasoning for this five year period is further described in EPA’s 2000 “Revisions to the Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health” published on EPA’s website:

<http://www.epa.gov/waterscience/humanhealth/method/>



Water Quality Criteria Requirements (40 CFR 131.11)

- ◆ **States/Tribes Must adopt criteria that protect the designated use**
 - ◆ **Based on a sound, scientific rationale**
 - ◆ **Sufficient parameters to protect the designated use**
 - ◆ **Must support the most sensitive use (for waters with multiple use designations)**


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Water Quality Criteria: Forms (40 CFR 131.11b)

- 
- **States and Tribes should adopt numeric criteria based on:**
 - ◆ 304(a) guidance
 - ◆ 304(a) guidance modified to reflect site specific conditions
 - ◆ Other scientifically defensible methods
 - **States/Tribes should adopt narrative criteria:**
 - ◆ Where numeric criteria cannot be established
 - ◆ Or to supplement numeric criteria

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Special Criteria Requirements for CWA 307(a) "Priority Pollutants"


- 1987 CWA Amendment - CWA Section 303(c)(2)(B)
- For 307(a) Pollutants Where EPA Has Published 304(a) Guidance - States Shall Adopt Numeric Criteria Where Discharge/Presence Can Reasonably be Expected to Interfere with Designated Uses
- For 307(a) Pollutants Where EPA Has Not Published 304(a) Criteria - States Shall Adopt Criteria Based on Biological Monitoring or Assessment Methods

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The Act, in section 307, identifies which pollutants should be considered. In the mid-1970s, a task force was formed to identify pollutants that appeared to pose a significant risk to human health and/or the environment and, therefore, deserved a high priority for regulatory attention. The task force identified 65 chemicals and chemical classes, which together comprised a total of 126 individual compounds, commonly referred to as the "priority" pollutants.

Both types of criteria are developed by EPA under the authority of section 304(a)(1) of the Clean Water Act, which requires EPA to "develop and publish . . . criteria for water quality accurately reflecting the latest scientific knowledge . . . on . . . all identified effects on health and welfare . . . which may be expected from the presence of pollutants in any body of water."

EPA has developed human health and aquatic life criteria for most of these 65 chemicals and chemical classes. These criteria have been published by EPA as guidance to assist States in setting standards. They are not regulatory.



Types of Water Quality Criteria

- ◆ Aquatic Life Criteria
- ◆ Human Health Criteria
- ◆ Bacteria Criteria
- ◆ Biological Criteria
- ◆ Nutrient Criteria
- ◆ Others


● Discussed in Modules 8,9,11,12 and 24

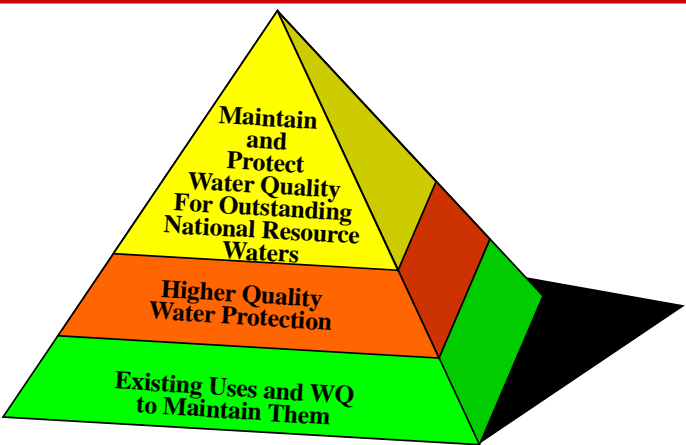
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There are several types of water quality criteria. Each type has a different protective focus:

- Human health criteria protect humans from specific chemical pollutants in both water and fish tissue.
- Bacteriological criteria
- Aquatic life criteria protect aquatic life from specific chemical pollutants in the water column.
- Biological criteria describe the desired biological condition of a water and can help identify where designated uses are not being met.
- Nutrient criteria establish allowable nutrient concentrations in a variety of waterbody types.
- Others (e.g., Sediment Toxicity Benchmarks)

Because of their different protective focuses, these different types of water quality criteria are complementary. Since there is no single number that will guarantee protection of all forms of life, ideally all categories of water quality criteria are considered when setting standards and evaluating the condition of a waterbody. If any criterion is exceeded, there may be a potential risk to some portion of the intricate web of human, animal, and plant life connected with a waterbody. The different types of water quality criteria collectively provide a valuable tool for setting standards and making water quality management decisions that help protect the broad diversity of life affected by water pollutants.

 **Antidegradation Policies**
(40 CFR 131.12)




Maintain and Protect Water Quality For Outstanding National Resource Waters

Higher Quality Water Protection

Existing Uses and WQ to Maintain Them

Discussed in Module 14 (Antidegradation)

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General policies (40 CFR 131.13)

- States and authorized tribes may include in their standards policies affecting application and implementation, such as:
 - ◆ Mixing zones
 - ◆ Low flows
 - ◆ Variances
- Subject to EPA review and approval
- Discussed in Modules 15,16,17,18,19,20

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Section 131.13 of the regulation allows States to adopt discretionary policies affecting the application and implementation of water quality standards. These policies generally include mixing zones, variances, and flows. Any such policies adopted by States and Tribes are subject to EPA review and approval. This is literally all the regulation says about these discretionary policies. We will be discussing EPA's guidance and recommendations on such policies throughout the Academy.



WQS: States and Authorized Tribes

- Have the primary authority to adopt, review and revise water quality standards (Section 303(c) of the CWA)
- May adopt standards more stringent than recommended by EPA (Section 510 of the CWA)
- May certify Federally licensed activities that result in discharge to waters of the US (Section 401 of the CWA)
- Discussed in Modules 18 and 19A


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States have primary responsibility for the water quality standards program. Throughout this training program, whenever we refer to States, we mean the 50 States, the District of Columbia, United States territories, and all Indian Tribes with program authorization. *U.S. territories include the Commonwealth of Puerto Rico, American Samoa, the Virgin Islands, Guam, and Commonwealth of the Northern Marianas Islands?* We will discuss more about Indian Tribes and the process for becoming authorized to administer a water quality standards program in Module 21.

When a State (or Indian Tribe) adopts new or revised water quality standards, it is required under section 303(c) of the Clean Water Act to submit the standards to EPA. At least once every 3 years, the State must hold a public hearing and, if necessary, review applicable water quality standards and modify and/or adopt standards, where appropriate. This is often called the triennial review.

States have the primary authority for establishing and revising water quality standards. This responsibility is given to the States by statute (CWA section 303(c)) and they have no option but to participate in the program. Indian Tribes, however, may or may not assume responsibility for administering the standards program at their option.

Both authorized Tribes and States have the right to develop more stringent water quality standards than recommended by EPA and EPA may not disapprove that portion of such standards. This is specified in section 510 of the Clean Water Act. The Act and the implementing regulations recognize a state or authorized tribes authority to adopt water quality standards more stringent than those required by the Act. EPA may question why such standards are desired by the State or Tribe, but EPA cannot disapprove them for that reason.



State/Tribal Submittal Must Include:
(40 CFR 131.20(c))

- **Use(s) for each waterbody**
- **Criteria sufficient to protect those uses**
- **An antidegradation policy and implementation methods consistent with 40 CFR 131.12**
- **Certification that the standards were duly adopted according to state or tribal law**
- **Other general supporting information**

• Discussed in Modules 18, 19A and 21


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When a State/Tribe submits its standards to EPA for review, it must include:

- the designated uses of each waterbody;
- and any methods and analyses that were used that support or justify those uses;
- water quality criteria based on sound scientific rationale and sufficient to protect the designated water uses;
- with any methodologies for site specific criteria;
- an antidegradation policy and identical implementation procedures consistent with EPA's requirements;
- certification by the State's Attorney General or the governing body of an Indian Tribe that the standards were duly adopted pursuant to State law; and
- other general information that may assist EPA in its review.

Review and approval/disapproval by Regional Administrator. In some Regions, the Regional Administrator may have further delegated approval authority. Disapproval authority always rests with the Regional Administrator and is coordinated with the Office of Water

More discussion in Module 18



Federal Promulgations (40 CFR 131.22)

- **If EPA disapproves AND**
- **If state or tribe does not adopt specified changes within 90 days...**
- **THEN the EPA Administrator must promptly propose and promulgate a replacement standard**
- **OR in any case where the Administrator determines new or revised standards are necessary to meet the requirements of the CWA**


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EPA develops regulations, policies, and guidance to facilitate implementation of the water quality standards program. EPA's 10 Regional Offices work with the States/Tribes to help them develop standards that will meet the requirements of the Act and gain approval. (Handout 2-1 shows the location of EPA's 10 Regional offices.) The individuals with whom you will be working are EPA's Water Quality Standards Coordinators. Their names, addresses, and phone numbers are located in your Registration kits. EPA is required to review new or revised State water quality standards to determine if those standards meet the requirements of the Clean Water Act. The authority to review and either approve or disapprove State/Tribal standards has been delegated to the EPA Regional Administrators.

If EPA disapproves State/Tribal water quality standards (and the state does not make the necessary changes) or determines that new or revised water quality standards are necessary to meet the requirements of the Act, the Agency must promptly propose and promulgate water quality standards. EPA also provides technical guidance and assistance to the States to help them carry out the requirements of their water quality standards program.

It is important to point out that while EPA reviews State/Tribal standards to ensure that they meet the minimum requirements and the intent of the Clean Water Act, EPA does not have the authority to disapprove a State's/Tribe's standards on the grounds that the standards are too stringent. Section 510 recognizes a State's authority to adopt standards that are more stringent than those required by the Act.

More discussion in Module 18



Waters of the U.S. (Handout 2-6)

- Used or maybe susceptible for use in interstate or foreign commerce
- Interstate Waters
- Other waters, the use, degradation or destruction of which could affect such commerce
- Impoundments of waters so defined
- Tributaries of the above
- the Territorial Sea
- Wetlands adjacent to the above

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Water quality standards are adopted for all "waters of the United States." This definition encompasses a broad range of waters, including rivers, streams, seasonally flowing streams, lakes, natural ponds, wetlands, and marine waters. Marine waters include estuaries (*such as bays*), salt marshes, and lagoons and near-shore coastal waters.

Handout 2-6 of your manual is a fact sheet on the definition of the "waters of the United States." Take a few minutes to review this

The definition of "waters of the United States" does not include ground water. Some States have water quality standards for ground water, but such standards do not fall within the scope of the federally mandated water quality standards program.

Waterbodies may be segmented such that, where appropriate, different standards may apply to different segments of the same waterbody. For example, a river may be divided into segments, and a different water quality standard could apply to each segment.

Section 502 (7) of the CWA

Further elaboration at: <http://www.epa.gov/owow/wetlands/guidance/CWAwaters.html>



Monitoring and Reporting: CWA Sections 305 (b) and 303 (d)

- Document assessment methodology for WQS attainment decisions
- Categorize all state waters based on WQS attainment status
- Present results of probability-based design at state or watershed scale
- Establish monitoring priorities for next 2 years
- Establish TMDL development priorities for all Category 5 waters

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Monitoring and Reporting: Integrated Reporting Categories

305 (b)
Report

1. Attaining all designated uses
2. Attaining some designated uses, and insufficient or no data and information to determine if remaining uses are attained
3. Insufficient or no data and information to determine if the standard is attained
4. Impaired or threatened for one or more designated uses but not needing a TMDL because --
 - a. TMDL has been completed
 - b. Expected to meet standards
 - c. Not impaired by a pollutant
5. Impaired or threatened by pollutant(s) for one or more designated uses and requiring a TMDL

} 303(d)
List
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TMDL Definition



$$\text{TMDL} = \sum \text{WLA}_i + \sum \text{LA}_i + \text{MOS}$$

$\sum \text{WLA}_i$: Sum of waste load allocations (point sources)

$\sum \text{LA}_i$: Sum of load allocations (nonpoint sources)

MOS: Margin of Safety

- Extra measure of protection due to uncertainty
- Can be explicit (e.g., 10%) or implicit (safety factors and assumptions in modeling, etc.)

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Standards-to-Permits Process



- 40 CFR §122.44(d)
- *Technical Support Document for Water Quality-based Toxics Control* (EPA/505/2-90-001), March 1991
- Discussed in Module 20: NPDES Permits

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Overview: Take Home Messages




- States, Territories and Authorized Tribes have important and unique roles in developing, adopting, reviewing and approving water quality standards.
- The Clean Water Act features both Technology Based and Water Quality Based approaches to pollution control.
- The Act itself, and regulations developed by notice and comment rulemaking, are the basis for EPA's review and approval of adopted state and tribal water quality standards.


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Overview: Take Home Messages (2)



- The Clean Water Act establishes a national goal of “water quality which provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water”, wherever attainable

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