EPA Water Regulations

How laws and regulations are developed

* *Creating a Law*
  + A member of Congress proposes a bill that is documented and if the bill is approved, the bill will become a law.
  + If both houses of Congress (Senate and House of Representatives) approves the bill, it goes to the President who has the option of approving the bill or vetoing it. If the bill is approved, the new law is called an act or statute. (Ex: Clean Water Act or Safe Drinking Act)
  + Once an act is passed, the House of Representatives standardizes the text of law and publishes it in the United States Code. The United States Code is the general and permanent laws of the U.S.
  + Once a law is official, congress authorizes certain government agencies including the EPA to create regulations because laws often do not include all the details needed to explain how an individual, business, state, or local government might follow the Law. The United States Code would not tell you for instance the speed limit in from of your house.
* *Creating a Regulation*
  + The agency such as the EPA proposes a regulation which is also known as a Notice of Proposed Rulemaking so that members of the public can consider the regulations and send their comments to the agency.
  + Agencies such as the EPA considers the comments received when proposed regulation was issued. Regulations are then revised accordingly and then issue a final rule.
  + Once a regulation is completed and printed as a final rule, it is added to the Code of Federal Regulations. This Code of Federal Regulations is the official record of all regulations created by the federal government.

The Environmental Protection Agency (EPA) is the primary federal agency in charge of water quality and authorizes the Clean Water Act and Safe Drinking Water Act. The EPA manages the federal side of these regulations, working with states to establish specific use categorizations for water bodies and operating the National Pollution Discharge Elimination System. States are required to establish technology standards and discharge limits for permitted entities to achieve broad federal water quality standards. If states fail to meet the requirements, EPA is authorized to take over for the state.

History of Water Quality Standards

* *The first large scope legislation for water pollution was the Water Pollution Control Act of 1948* which adopted principles of state and federal cooperative program development, limited federal enforcement authority, and limited federal financial assistance. These rules continued in the Federal Water Pollution Act in 1956 and in the Water Quality Act of 1965.
* Under the 1965 Water Quality Act, states were directed to develop water quality standards establishing water quality goals for interstate waters.
* By the early 1970’s all the states had adopted interstate water quality standards.
* *Water quality standards was deemed insufficiently effective because of enforcement problems. In the Federal Water Pollution Act Amendments of 1972 (A.K.A Clean Water Act), Congress established the National Pollutant Discharge Elimination System (NPDES): permit program that controls water pollution by regulation point sources such as pipes that discharge pollutants into waters of the U.S. and that each point source is required to obtain a discharge permit.*
* *The 1972 Amendment (CWA):* 
  + *Established the basic structure for regulating pollutant discharges into the water of the U.S.*
  + *Gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry.*
  + *Maintained existing requirements to set water quality standards for all contaminants in surface waters.*
  + *Made it lawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions*
  + *Funded the construction sewage treatment plants under the construction grant program*
* Water Quality standards are state or tribal law or regulation that: define the water quality goals of a water body, or segment thereof, by designating the use or uses to be made of the water; criteria necessary to protect the uses; and protect the water quality through antidegradation provisions.
* *While the water quality standards program continued, it was a low priority for the Clean Water Act because in the 1970’s the state and EPA were focused on creating the infrastructure necessary to support the NPDES program.*
* On December 29, 1984, the first enforcement of the CWA requirement was that no construction grant could be awarded for projects that discharged into stream segments.
* *On February 4, 1987, Congress enacted the Water Quality Act of 1987 because congress was impatience with the lack of progress in State adoption of standards for toxics resulted in the 1987 adoption of new water quality standard provisions in the Water Quality amendments.*
* An example of an amendment was when Congress required development of numeric criteria for those water body segments where toxic pollutants were likely to adversely affect designated uses because States were relying on narrative criteria to control toxics which made developments of effluent limitations in permits difficult.
* Section 518 of the 1987 Amendments was a major component because this section extended participation in the water quality standards and 401 certification programs to certain Indian Tribes.
* The Act directed EPA to establish procedures by which a Tribe could “qualify for treatment as a State” at its option, for purposes of administering the standards and 401 certification programs.
* The Act also required EPA to create a mechanism to resolve disputes that might develop when unreasonable consequences arise from a Tribe and State or another “Tribe adopting differing water quality standards on common bodies of water.
* *The 1987 Amendments recognized the EPA’s antidegradation policy for the first time. The purpose of EPA’s antidegradation policy and procedures: identify the steps and questions that must be addressed when regulated activities are proposed that may affect water quality*
  + Maintains and protects existing uses and water quality conditions necessary to support such uses
  + Maintains and protects “high quality” waters—water bodies where existing conditions are better than necessary to support the Clean Water Act
  + Maintains and protects water quality in outstanding national resource waters.

Clean Water Act Amendments Modified

* Revisions in 1981 streamlined the municipal construction grants process, improving the capabilities of treatment plants built under the program.
* Changes in 1987 phased out the construction grants and replaced it with the Clean Water State Revolving Fund which addressed water quality needs by building on EPA-state partnerships
* *Examples of modifications in the Clean Water Act*
  + *The Great Lakes Critical Programs Act of 1990 out into place parts of the Great Lakes Agreement of 1978 signed by the U.S. and Canada where two nations agreed to reduce certain toxic pollutants in the Great Lakes.*
  + *This law required EPA to establish water quality criteria for the Great Lakes addressing 29 toxic pollutants with maximum levels that are safe for humans, wildlife, and aquatic life.*

Regulatory History

* *EPA firsts publish a water quality standards regulation in 1975 as part of the water quality management regulations. The first water quality standards regulation did not specifically address toxic pollutants or any other criteria. It only required “appropriate” water quality criteria necessary to support designated uses.*
* *In the late 1970s and early 1980s the public and Congress raised concerns about toxic pollutant control which caused EPA to use the statutory connection between water quality and NPDES permits to effectively control a range of toxic pollutants from point sources.*
* *This lead to the EPA amending the Water Quality Standards Regulations to explicitly address toxic criteria requirements in State standards.*
* *The amended regulation was made on November 8, 1983*
* State’s reaction to EPA’s initiative was mixed because several states proceeded to adopt large numbers of numeric toxic pollutant criteria for the purpose of protecting the aquatic life. Other states relied on narrative “free from: toxicity criterion, using so-called “action levels” for toxic pollutants.
* In support of the 1883 regulation, EPA simultaneously issued program guidance called Water Quality Standards Handbook that provides information needed to convert chemical-specific and biologically based criteria into permits for point source dischargers.
* Because many states were reluctant on adopting numeric toxics criteria, in 1987, Congress responded to the lack of numeric criteria for toxic pollutants within State standards and created the Water Quality Act.
* States significantly responded to the 1987 requirement for toxic pollutants. For example. In 1986 on average, each state had 10 numeric criteria for freshwater aquatic life. By February 1990, the average number of freshwater aquatic life criteria was increased to 30.
* *States averaged 36 numeric criteria for human health in February 1990 but, by September 1990, many states had failed to fully satisfy the requirements of section 303(c)(2)(B)*
* EPA was consistent with this mandate, initiated Federal promulgation of toxic criteria for those states that had not complied with the Act. EPA proposed Federal criteria for toxic pollutants for 22 states and territories and on November 19, 1991 and promoted toxic criteria for 14 of those states on December 22, 1992.

Handbook Changes since 1983

* In December 1983, EPA published its first Water Quality Standards Handbook. The 1983 Handbook was designed to help states implement the Water Quality Standards Regulation as revised in November 1983.
* Since then, Congress created the Water Quality Act of 1987 which made substantial additions to the Clean Water Act and directly affected the standards program.
* In response to the Water Quality Act of 1987, and as a result of Federal promulgation actions, EPA amended the Water Quality Standards Regulation several times.

EPA Guidance on Water Quality of 1987

* On February 4, 1987, Congress enacted the Water Quality Act if 1987 which made substantial additions to the Clean Water Act.
* The 1987 Act also added a new section 518, which requires EPA to promote a regulation specifying how the Agency will authorize qualified Indian Tribes to administer CWA programs including 303 and 401.
* Section 518 also requires EPA to promote and to establish a mechanism to resolve unreasonable consequences that may result from an Indian Tribe and a State adopting differing water quality standards on common bodies of water.
* EPA promulgated a final regulation on December 12, 1991

History

* In 1972, Congress passed the Federal Water Pollution Control Act Amendments, which require Publicly Own Treatment Works to achieve secondary treatment capability by 1977. Some municipalities with POTWS that discharged into marine waters argued that this requirement might be unnecessary on the grounds that marine POTWs usually discharge into deeper waters with large tide and substantial currents, which allow for greater dilution and dispersion than their freshwater counterparts
* This resulted in Congress adding section 301 to the Clean Water Act in 1977, allowing for a case-by case review of treatment requirements for marine dischargers that applied by September 1979.
* EPA issued regulations and a technical support document for the 301(h) program in 1979
* Since then, section 301(h) has been amended as follows:
  + The 1981 Municipal Waste Water Treatment Construction Grants Amendments extended the deadline for applications to December 29, 1982, and removed the requirement that the applicant have a pre-existing discharge. The regulations were revised in 1982 to address these changes in legislation and to reflect program experience.
  + Section 303 of the Water Quality Act of 1987 added a number of requirements such as
    - All POTWs applying for a 301(h) modified permit must achieve primary or equivalent treatment to remove at least 30 percent of conventional pollutants and must meet water quality criteria.
    - Those POTWs serving a population more than 50,000 with industrial sources of toxic pollutants must implement an urban area pretreatment program.
    - POTWs discharging to stressed estuaries are not eligible for a 3011(h) waiver. EPA has revised the section 301(h) regulations in response to amendments in the Water Quality Act of 1987

EPA’s Final Regulations

* EPA published proposed revisions to 301(h) regulations in the Federal Register on January 24, 1991 and held a hearing on the proposed regulations on March 7, 1991. The final revisions were signed on July 14, 1994. The final regulations were published in the Federal Register on August 9, 1994.

Safe Drinking Water Act

* The Act authorizes EPA to establish minimum standards to protect tap water and requires all owners or operators of public water systems to comply with these primary standards.
* The 1996 amendments to SDWA require that EPA consider a detailed risk and cost assessment, and best available peer-reviewed science, when developing these standards.

--“Until now, major bodies of water were protected under the law, but they can’t be fully protected unless the streams that flow into them are also protected”

Articles: major bodies of water used to be regulated but now, small streams or ditches need to be regulated and that causes a huge problem for farmers

Laws

* Beaches Environmental Assessment and Coastal Health Act of 2000 is an amendment to the Clean Water Act that authorizes EPA to award grants to eligible states, territories and tribes to develop and implement beach water quality for coastal and Great Lakes recreational beach waters. The grants also help these governments develop and implement programs to inform the public about the risk of exposure to disease water at the beaches
* Coastal Zone Act Reauthorization Amendments addresses nonpoint pollution problems in coastal waters.
* Endangered Species Act provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found.
* Marine Protection, Research, and Sanctuaries Act prohibits the dumping of material into the ocean that would unreasonably degrade or endanger human health or the marine environment
* Safe Drinking Act is the main federal law that ensures the quality of Americans’ drinking water. Under SWDA, sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standard

Executive Orders:

* On July 19, 2010 President Obama signed an executive order establishing the National Ocean.
* On December 5, 2009 President Obama signed an executive order setting sustainability goals for federal agencies and focuses on making improvements in their environment, energy and economic performance. The EO requires federal agencies to improve water efficiency and management by:
  + Reducing potable water consumption intensity 2% annually
  + Reducing agency industrial, landscaping and agricultural water consumption
  + Identifying, promoting, and implementing water reuse strategies consistent with state law that reduce potable water consumption
* May 12, 2009 President Obama signed an executive order creating a Federal Leadership Committee for the Chesapeake Bay, chaired by EPA. The order calls for EPA and six other federal agencies to coordinate and expand federal tools and resources to help speed cleanup of the nation’s largest estuary.
* January 24, 2007 President Bush signed an executive order requiring federal agencies to implement water-efficiency measures, including the purchase, installation, and implementation of water-efficient products and practices.

How are EPA regulations affecting the world?

* EPA carries out bilateral cooperative programs with many other countries around the world. These programs allow other countries—especially developing countries and countries with economies in transition--to benefit from U.S. experience in developing appropriate and effective environmental programs.
* Antarctica
  + As required by the Antarctic Science, Tourism, and Conservation Act of 1996, EPA has issued regulations that provide for environmental impact assessment of nongovernmental activities (including tourism) in Antarctica such as the Protocol of Environmental Protection to the Antarctic Treaty of 1959.
* Asia/Pacific: EPA’s engagement with the Asia-Pacific region helps safeguard our domestic environment; protect the health of our citizens; address global environmental issues; and improve the safety of products and food
  + Australia
    - Australia is facing many of the same water quality and quantity issues that face the United States, with increasing growth, drought, aging infrastructure and climate change all added stress to limited resources.
    - Improving Access to Clean Water: EPA Administrator and Australian Environment Minister signed a five year MOU on water cooperation in 2011. Today, cooperation has consisted of policy dialog and exchange of lessons learned through management and technical staff discussion via video conference and face to face meetings.
    - Combating Climate Change: EPA and our Australian counterparts have a history of exchanging experiences and lessons on addressing climate change. Additionally, EPA partners with Australia to address climate change though The Global Methane Initiative and The Clean Air and Climate Coalition.
* China:
  + EPA partners with China’s national ministries and commissions, provincial and special administrative regions, and other key stakeholders to share expertise and experience to advance environmental protection in support of EPA’s and China’s shared environmental priorities.
    - Cooperative activities enhance capacity to reduce emissions of pollutants, toxics, and greenhouse gases and limit threats to public health caused by pollution. Emphasis is placed on jointly addressing shared current and emerging environmental challenges, such as protecting air, water, soil; addressing climate change; and working together to create a foundation for long-term sustainability.
    - EPA and China have collaborated on environmental issues for over three decades. EPA and the Ministry of Environmental Protection collaborate to address:
    - Air pollution, water pollution, pollution from persistent organic pollutants and other toxics, hazardous and solid waste, prevention and restoration of contaminated sites, emergency preparedness and response, environmental institutions, and environmental law development, implementation, compliance, and enforcement.
    - Initiatives are also in place to collaborate on sustainable movement of goods, management of electronic waste, and management of mercury
    - EPA collaborates with China’s National Development and Reform Commission on climate change policies; greenhouse gas monitoring, reporting, and verification capacity. EPA collaborates with China’s Ministry of Science and Technology on research to better assess emissions and their impacts, improve mitigation practices and technologies, and enhance sustainability. Areas of shared research include emissions that impact air and climate, water sustainability, computational toxicology, soil remediation, and toxic air pollutants.
    - EPA also participates in government-wide initiatives with China, including the U.S.-China Ten Year Framework for Cooperation on Energy and Environmental, the U.S.-China Strategic and Economic Dialogue, and the Climate Change Working Group
    - Improving Air Quality: EPA has collaborated with China’s Ministry of Environmental Protection to develop sulfur dioxide emissions cap and trading mechanisms and with MEP and Provinces to promote cleaner fuels and vehicle emissions reductions
    - EPA also collaborated with the Shanghai Environmental Protection Bureau and Shanghai Environmental Monitoring Center to establish the AirNow international monitoring system, a pilot that is now being considered for expansion to other Provinces.
    - EPA continues assisting with hosting study tours, training, and cooperation on multi-pollutant and mercury controls, power sector emissions, motor vehicle engine compliance, and fuel standards and on helping China in controlling PM2.5 emissions.
    - EPA helps to conduct Regional Air Quality conferences with MEP to address priority air quality issues. EPA is developing a pilot project to build regional air quality planning capacity for air quality managers in Jiangsu Province in collaboration with the U.S. Trade and Development Agency.
    - Expanding Access to Clean Water: A clean water action plan has fostered meetings and technical exchanges, including between state governments in the Unites States and provincial governments in China. This culminated with the formalization of a Sister Lake Partnership between Lake Pepin in Minnesota and Liangzi Lake in Hubei Province to share expertise in watershed protection. Collaboration enables sharing water monitoring, assessment, protection and restoration technologies and services.
    - Reduce Exposure to Toxic Chemicals: China has implemented improved measures for new chemicals management and issued an inventory of existing chemical substances in China. A pilot program is in place for promulgating registration requirements for hazardous chemicals.
    - Cleaning up E-Waste: In 2010 on a mission in China, then-EPA Administrator Lisa Jackson visited e-waste recycling facilities in Guiyu. Following visit, Administrator Jackson and China’s then-Minister of Environment Zhou Shengxian agreed to collaborate on the emerging issue on managing e-waste. This commitment was initiated through an Electronics Breakout Session at the Third China-U.S. Strategic and Economic Dialogue
* Taiwan
  + EPA established an agreement with the American Institute in Taiwan in 1993. EPA works with the Environmental Protection Administration Taiwan to implement the agreement.
  + In 2014, EPA and EPAT officially launched the International Environmental Partnership, a network of experts from around the world working together to strengthen capacity for addressing environmental challenges.
  + International Environment Partnership includes:
    - Expanding mercury monitoring in the Asia Pacific region
    - Establish a Cities Clean Air Partnership
    - Explore new ways of managing electronic waste
    - Establishing the Eco-Campus partnerships between schools in the U.S and Taiwan
    - Supporting the Global Environmental Education Partnership, which involves more than ten environmental ministries committed to improving environmental literacy in their home countries.
* Timeline of Recent Events:
  + - August 2015: EPAT Minister Wei Kuo-yen will join EPA Principal Deputy Assistant Administrator Jane Nishida to kick off the first conference of International Environmental Partnership. This conference will include technical training on air quality protection for more than 25 cities from across Asia.
    - November 2014: EPA joined EPAT, and Manila-based NGO Clean Air Asia for consultations on the newly established Cities Clean Air Partnership city-level partnering and certification program
* Improving Air Quality: According to the World Health Organization, approximately 7 million people died in 2012 as a result of air pollution exposure. To address this challenge, EPA and EPAT have collaborated on air quality protection for nearly twenty years.
* EPA and EPAT partners with the National Atmospheric Deposition Program to improve the capacity for atmospheric mercury monitoring, data for analysis, and modeling, and the accuracy of mercury emissions inventories with other partners in the Asia-Pacific region.
* Expanding Access to Clean Water: EPA and EPAT experts serve as technical trainers for agencies and institutions across the Asia-Pacific region on the clean-up of contaminated sites, addressing topics such as forced-air remediation, bioremediation and phyto-remediation
* India
  + In April 2014, the Environmental Law Institute and National Law School of India University published “Enforcing Hazardous Waste Rules in India: Strategies and Techniques for Achieving Increased Compliance” This handbook can be used as a tool for officials in India who seek to increase local compliance with hazardous waste rules.
  + August 2013: Officials from India’s State Pollution Control Boards traveled to the U.S. to learn more about the legal aspects of hazardous waste management.
  + Improving Air Quality: From 2003 to 2010, EPA engaged with India to support science-based air pollution control strategies in Indian cities. With the cooperation of MoEF, the State of Maharashtra, the Municipality of Pune, and other partners, EPA helped demonstrate technologies which can assist decision makers in developing policies aimed at reducing air pollution.
  + Expanding Access to Clean Water: From 2006-2008, EPA engaged with India to improve drinking water quality monitoring. EPA also partnered with the Indian government to demonstrate assessment and management tools to make drinking water safer for human consumption.
* Indonesia
  + In December 2014, EPA provided environmental enforcement training to over fifty Indonesian officials. In 2013, MOE participated in environment inspections training courses led by EPA in Singapore, Taiwan, and Bangkok.
  + Improving Air Quality: In the 1990s, EPA and Indonesia collaborated to evaluate air emissions from forest fires and to phase out lead in gasoline.
    - EPA has been cooperating with Indonesian partners and United Nations Environment Programme through work under the Global Partnership for Clean Fules and Vehicles.
    - EPA is also partnering with the City of Jakarta and the Indonesia Ministry of Environment and Forestry on “Breathe Easy, Jakarta”, a program to improve air quality.
    - MOE officials also visited EPA in December 2013 to learn more about the U.S. air quality management practices
    - (interesting how Indonesia did not have a clean water quality plan)
* Japan
  + EPA has been cooperating with the Ministry of Environment ofJapan ever since 1975
  + EPA is committed to supporting Japan and learning collaboratively from the 2011 Fukushima nuclear incident.
  + The commission of Decommissions and Environmental Management Working Group under the U.S.-Japan Bilateral Commission on Nuclear Decontamination was established after the Fukushima Daiichi nuclear disaster in 2011
  + (Did not have air quality or water quality plan)
* Singapore
  + In 2013, EPA developed and delivered an environmental inspections training course to about 50 participants from Singapore’s National Environmental Agency.
  + Improve Air Quality: in 2011 and 2013, EPA hosted air quality management study tours for officials from Singapore’s Ministry of Environment and Water Resources and National Environmental Administration. Topics of the tour included air quality monitoring, control of air emissions form oil refineries and petrochemical plants, and public health impacts from improved air quality.
  + Expanding Access to Clean Water: In June 2013, EPA and Singapore’s national water agency signed and MOU to collaborate on sustainable management of water resources. Singapore’s national water agency and EPA will cooperate to increase scientific and technical knowledge on long-term water sustainability. Officials from Singapore’s national water agency visited EPA in April 2014 to identify priority areas of collaboration.
* Thailand
  + From 1997 to 2007, EPA provided training and information to the Thai government. EPA shared our experience with environmental legislation in 2001 when Thailand was drafting its first comprehensive environmental public participation law.
  + In 2003, EPA trained 30 environmental mediator trainers, who customized EPA’s course and presented it to over 300 additional people.
  + Today, Thailand participates in a regional environmental information working group that was formed through collaboration by the Environmental Protection Administration Taiwan and EPA.
  + Improving Air Quality: from 2001-2006, EPA partnered with the Thai Pollution Control Department on an air quality management program in Bangkok. This program included training and information sharing on air quality monitoring, emission inventories, air quality modeling, promotion of cleaner fuels and vehicles and air quality training.
  + EPA also worked with the Thai government on an air quality study of Map Ta Phut from 2002-2004. In 2011, EPA continued to support this effort with the air quality study.
  + In 2012, the Thai Air Pollution Center of Excellence celebrated its tenth anniversary of training public and private air pollution.
  + Expanding Access to Clean Water: EPA partnered with Thailand to improve water quality from 2002-2008
  + In 2002, EPA helped sponsor the Thachin River Basin Restoration Partnership Workshop.
  + In 2006, EPA partnered with the Asian Environmental Compliance and Enforcement Network and the Thai government to developing compliance assistance centers to share best practices in reducing farm runoff that was polluting rivers.
  + In 2007 and 2008, EPA shared lessons learned about watershed management in Puget Sound with Thai officials from the Thachin River Basin in central Thailand.
* Vietnam
  + In April 2014, EPA Administrator goes to Vietnam to promote regional environmental cooperation
  + In 2007, Vietnam joined the Global Methane Initiative and since then, Vietnam collaborated with EPA and the World Bank to capture and use methane emissions from agricultural activities.
  + (No air and water quality plan)

Latin America and the Caribbean

* Brazil
  + Since Brazil is the 5th largest country and has high economic growth and urbanization makes it a priority for the U.S. environmental cooperation.
  + EPA and Brazil began formal cooperation in 1987 with an agreement between EPA and Sao Paulo State environmental agency.
  + July 2015: As an outcome of the June 30th meeting between President Obama and Brazilian President Dilma Rousseff, EPA Administrator and the Brazilian Ministry of Environment launched a new work plan under EPA-MMA Memorandum of Understanding (MOU) to protect the environment while promoting economic growth and social development.
  + July 2014: to enhance the Guanabara Nay-Chesapeake Bay partnership, EPA and a delegation of officials and experts from Maryland traveled to Brazil to participate in a workshop.
  + Air Quality: EPA provided assistance for Brazil on their Air Quality index since 2004.
  + The partnership focuses on making their air quality index more usable for public. For example, Brazil improved the air quality index website now features color coding, health effects and cautionary statements for each category.
* Chile
  + (no air or water quality plan)
* Central America
  + EPA is providing technical assistance under Pathways to Prosperity in areas of Environmental Impact Assessment, Wastewater Regulations, Solid Waste Management, Enforcement and Compliance and Enhancing Capacity for Low Emissions Development Strategies in Costa Rica.
  + November 2014: With EPA’s assistance, El Salvador launched a new program of reforms for Environmental Impact Assessment and related environmental permitting and enforcement. This reform package can serve as a model for other countries that are seeking to advance environmental permit programs, environmental impact assessment and enforcement
  + Wastewater Model Regulation: All countries have begun implementation of at least two of 12 basic elements to implement a wastewater management program, and have been provided with tools to establish wastewater discharge parameters for key industrial sectors in the region.
  + In addition, EPA is completing a manual on appropriate wastewater treatment for the region.
  + Solid Waste Management: Through training, they hope to accomplish
    - Courses on sanitary landfill inspection protocol
    - Development of regulations, policies, and procedures for sanitary landfills and solid waste practices
    - Capture and potential use of methane gas as a clean energy source under the objectives of the global methane initiative or contained generation of methane via anaerobic digestion or waste
    - A demonstration project for closing open dumps
* Russia (no air or water quality plan)
* Central Asia (no air or water quality plan)
* Ukraine (no air or water quality plan)
* Morocco (no air or water quality plan)
* Egypt (no air or water quality plan)
* Israel (no air or water quality plan)
* Mexico
  + EPA works with the U.S.-Mexico environmental Program to improve the environment and protect the health of nearly 12 million people living along the border. The bi-national program focuses on cleaning the air, providing safe drinking water, reducing the risk of exposure of hazardous waste, and ensuring emergency preparedness along the U.S.-Mexico border
  + The Border 2012 program closed in 2012 after successfully meeting and exceeding program goals and objectives. Along the borders, more than 12 million scrap tires were removed properly and disposed of, more than 54,000 homes were connected to safe drinking water system and more then 540,000 homes were connected to waste water systems.
* Canada
  + Boundary Waters Treaty and International Joint Commission: The Boundary Waters Treaty signed in 1909, established the International Joint Commission. The treaty includes the requirement that neither country should cause water pollution in its water which will cause injury to health or property in the other country. In 1988, the IJC expanded the treaty to include protecting covered watersheds, migratory fisheries and their habitats.
  + The Great Lakes Water Quality: Originally signed in 1972, the Great Lakes Water Quality Agreement provides a regional mechanism for cooperation to protect the Great Lakes Basin ecosystem. It was last amended in 2012.
  + The U.S.-Canada Air Quality Agreement was signed in 1991 with the goal of reducing air emissions which cause acid rain. It was expanded in 2000 to reduce transboundary smog emissions under the Ozone Annex.

How are the regulations working? (Because of how it is created and amendments)

* *Creating a Law*
  + A member of Congress proposes a bill that is documented and if the bill is approved, the bill will become a law.
  + If both houses of Congress (Senate and House of Representatives) approves the bill, it goes to the President who has the option of approving the bill or vetoing it. If the bill is approved, the new law is called an act or statute. (Ex: Clean Water Act or Safe Drinking Act)
  + Once an act is passed, the House of Representatives standardizes the text of law and publishes it in the United States Code. The United States Code is the general and permanent laws of the U.S.
  + Once a law is official, congress authorizes certain government agencies including the EPA to create regulations because laws often do not include all the details needed to explain how an individual, business, state, or local government might follow the Law. The United States Code would not tell you for instance the speed limit in from of your house.
* *Creating a Regulation*
  + The agency such as the EPA proposes a regulation which is also known as a Notice of Proposed Rulemaking so that members of the public can consider the regulations and send their comments to the agency.
  + Agencies such as the EPA considers the comments received when proposed regulation was issued. Regulations are then revised accordingly and then issue a final rule.
  + Once a regulation is completed and printed as a final rule, it is added to the Code of Federal Regulations. This Code of Federal Regulations is the official record of all regulations created by the federal government.

Is the regulations showing a positive/negative effect and what is a good/bad water policy and why was it effective?

How are EPA regulations affecting water pollution?

Fines/Litigation on Clean Air Act

* May 2015: Enviro-Safe Refrigerants Agree to Halt sales of unapproved flammable hydrocarbon refrigerants as direct replacements for ozone depleting substances
  + Enviro-safe refrigerants in Illinois, has agreed to pay a $300,000 civil penalty and cease marketing and sale of unapproved flammable hydrocarbon refrigerants as substitutes for ozone depleting substances. Enviro-Safe violated the Clean Air Act because EPA has not approved any flammable hydrocarbon as a replacement for ozone depleting substances in systems not specifically designed for flammable refrigerants.
* January 8, 2015: DuPont Fined for Air Pollution at Deepwater, New Jersey
  + DuPont has been fined with $531,000 for alleged Clean Air Act violations at its chemical manufacturing plant in New Jersey. DuPont was fined for improper maintenance and repair of two large refrigeration units. When properly maintained, the systems are designed to minimize chlorofluorocarbons from leaking into the environment. CFCs damage the ozone layer which shields the earth from harmful radiation that contributes to increases skin cancer. DuPont also failed to accurately submit reports to EPA under the Emergency Planning and Community Right-to-Know Act
* September 3, 2014: United States settles with Costco to cut R-22 emissions nationwide
  + Costco has agreed to cut its emissions of ozone –depleting and greenhouse gases from leaking refrigeration equipment at more than half of its stores nationwide. Costco will pay $335,000 in penalties of the Clean Air Act and will fix refrigerant leaks. Costco also failed to keep adequate records of the servicing of its refrigeration equipment to prevent harmful leaks.
* June 24, 2014: Air Conditioner Thief Pleads Guilty to Violating Clean Air Act
  + Martin Eldridge pleaded guilty in the U.S. District Court to violating the Clean Air when he cut the tubing on air condition units he stole and released a regulated refrigerant into the environment. Eldridge and others stole at least 49 air conditioners in order to sell the copper and parts from the units at scrap yards
* June 20, 2014: International Distributor Pleads Guilty and is Sentenced for Illegal Sale and Distribution of Refrigeration Equipment Containing Ozone Depleting Substances
  + eAir was convicted and sentenced in federal court in Miami in connection with the illegal sale and distribution of air conditioning equipment containing the refrigerant gas, hydro chlorofluorocarbon 22.
* September 4, 2013: Grocery store chain, safeway, agrees to settlement regarding allegations that they failed to promptly repair leaks of HCFC-22 and failed to keep adequate records:
  + In a settlement agreement with the United States, Safeway the nation’s second largest grocery chain has agreed to pay $600,000 civil penalty and implement a corporate-wide plan to reduce its emissions of ozone depleting substances from refrigeration equipment at 659 of its stores.
* March 5, 2013: International supplier and distributor of AC/heating products and original allowance holder under the Clean Air Act, pleads guilty to charges related to smuggled ODS
  + Saez Distributors, pled guilty for knowingly receiving, buying, selling, and facilitating the transportation, concealment, and sale of approximately 65,592 kilograms of ozone-depleting substances which had been illegally smuggled into the U.S.
* October 3, 2012: Miami Man pleads guilty in Illegal Refrigerant Smuggling Operation
  + Norberto Guada pled guilty yesterday of knowingly importing approximately 15,640 kilograms of illegal HCFC-22. Guada faces a possible sentence of up to 20 years of prison and a fine up to $250,000

Fines and Litigation for Clean Water Act

* November 13, 2013: The city of Shreveport Louisiana has agreed to make significant upgrades to reduce overflows from its sanitary sewer system and pay a $650,000 civil penalty to resolve Clean Water Act violations stemming from illegal discharges of raw sewage.
  + Through the implementation the estimated annual pollutant reductions will result
    - 4,677 pounds of total suspended solids (TSS indicates the measure of suspended solids in wastewater, effluent or water bodies. High levels of TSS in a water body can diminish the amount of light that penetrates the water column and reduce photosynthesis and the production of oxygen)
    - 4,477 pounds of biological oxygen demand(BOD is an indirect measure of biologically degradable material that will consume oxygen from the water during the degradation process. It may take away oxygen that is needed for aquatic organisms to survive. )
    - 727 pounds of total nitrogen (excessive levels of nitrogen and phosphorus in waters can produce harmful algal blooms. These blooms contribute to the creation of hypoxia or “dead zones” in water bodies where dissolved oxygen levels are so low that most aquatic life cannot survive.)
    - 104 pounds of total phosphorus
* September 10, 2013: The city of Columbia, South Carolina owns and operates a separate sanitary sewer system. Columbia has violated the Clean Water Act, including unauthorized overflows of untreated raw sewerage.
  + Columbia must assess and rehabilitate its sewer systems within 12 years. EPA estimates the consent decree will result in
    - 1,178 total suspended solids
    - 1,127 biological oxygen demand
    - 183 total nitrogen
    - 26 total phosphorus
* July 23, 2013: The San Antonio Water System has agreed to make significant upgrades to reduce overflows from its sewer systems, violations stemmed from illegal discharges of raw sewage.
  + Through implementation, the estimated annual pollutant reductions will result
    - 8,021 pounds of total suspended solids
    - 7,678 pounds of biological oxygen demand
    - 1,246 pounds of total nitrogen
    - 178 pounds of total phosphorus
* July 18, 2013: XTO Energy, a subsidiary of Exxon Mobil Corporation violated the Clean Water Act when the discharge of wastewater from XTO’s Penn Township facility was used for the storage of wastewater generated by natural gas exploration commonly known as fracking, and production.
  + On November 16, 2010, XTO released between 150 barrels (6,300 gallons) to 1,366 barrels (57,373 gallons) of flowback and produced water into waters of the United States. EPA investigated the spill and found out that the spill impacted those waters for about 65 days.
  + EPA estimates that full implementation will prevent 263,574,926 pounds of dissolved solids from entering surface waters in Pennsylvania to West Virginia.
  + XTO is required to submit progress reports to EPA over the next three years that will further quantify the pollution reductions associated with this settlement
  + Wastewater associated with shale gas extraction can contain high levels of salts or TDS, fracturing fluid additives, metals, and naturally occurring radioactive materials.
* December 14, 2011: EPA announced a Clean Water Act settlement with the Metropolitan Water Reclamation District of Greater Chicago to resolve claims that untreated sewer discharges were released into Chicago area waterways during flood and wet weather events. The settlement will safeguard water quality and protect human health by capturing wet weather flows entering the combined sewer system, which services the city of Chicago and 51 communities.
  + Violations included
    - Failure to provide the equivalent of primary treatment plus disinfection for up to ten times the average dry weather flow
    - Failure to prevent floatables and solids in CSOs from entering Chicago area waterways as required under the National Pollution Discharge Elimination System
    - Causing or contributing to exceedances of water quality standards for dissolved oxygen
* Implementation includes the “tunnel and reservoir plan” which includes the construction of 109 miles of tunnels that have storage capacity of 17 billion gallons of sewage and flood water
* “floatables” is a plan to control debris and two new skimmer boats will be purchased and dispatched to Chicago area waterways
* Green Infrastructure program is to increase acceptance of and investment in Green infrastructure to reduce CSO discharges, localized flooding and storm water impacts
* Civil Penalty
  + $350,000 to the United States
  + $325,000 to the state of Illinois
* March 14, 2013: Teva Pharmaceuticals USA has agreed to pay 2.25 million civil penalty to settle violations of the Clean Air, Water, and Hazardous Waste Violations at Mexico
  + Teva failed to control emissions of hazardous air pollutants from wastewater and failure to comply with regulations designed to prevent leaks of air pollutants from equipment at the facility
  + In 2007, EPA inspection found the Teva facility was discharging pollutants above permitted levels established by the City of Mexico’s Pretreatment Program, in violation of the CWA. These pollutants were causing interference with the city’s ability to treat its domestic sewage, leading to pollutant discharges into the Salt River.
  + In 2009, an inspection by the Missouri Department of Natural Resources uncovered various RCRA violations. These violations included failure to determine if waste was hazardous, illegal storage of hazardous waste, failure to comply with labeling requirements, and offering hazardous waste for transport without a manifest