

Environmental 101

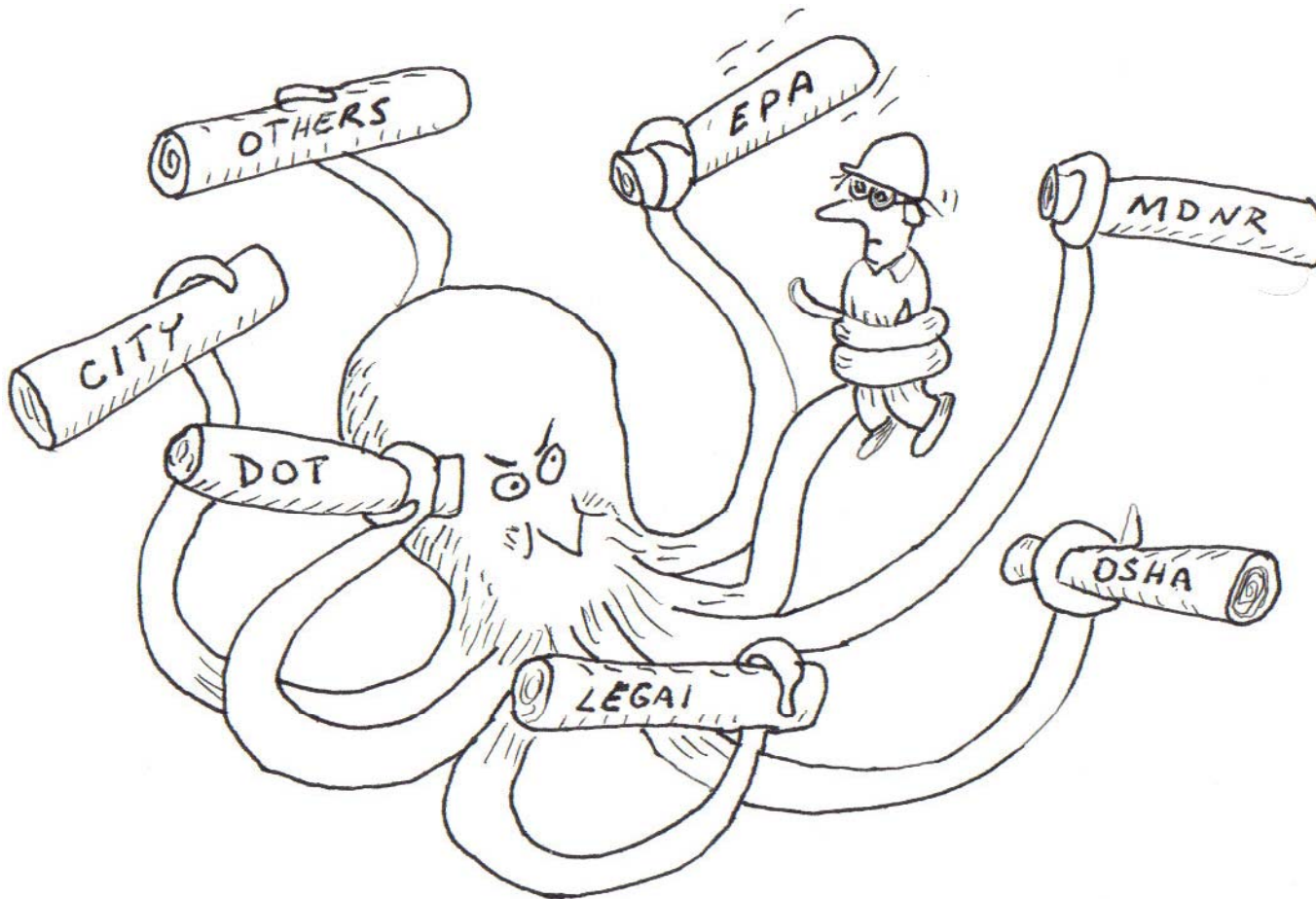
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All We Want You to Do Is Handle This Environmental Stuff.



In Your Spare Time.



Purpose

- Basic Understanding of Regulations
- Basic ways to meet the requirements
- Who regulates you
- Ways to keep ahead of changes
- Basic resources

Topics

- Enviro-Speak
- Enviro-Science
- Basic Regulations
- Permits & Reports
- Media Issues
- Hazardous Waste
- How to Keep it All Together

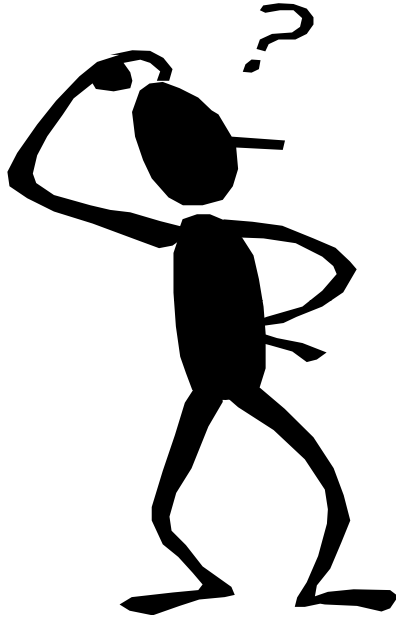
Enviro-Speak

If You Don't Speak the Language You Might
Be in Trouble !

What is Enviro Speak ?

- Shorthand of the Profession
- Abbreviations of Complicated Terms and Words
- Specific Definitions of Words and Phrases

Abbreviations and Acronyms



- Agencies
- Programs
- Regulations
- Media Specific

Terms Of Craft

- Terms that mean something other than what you think.
- Solid Waste
- Inherently Waste Like
- Mixed Waste



Enviro Science

What is Enviro Science ?

- **Chemistry**

- **Biology**

- **Physics**

- **Hydrology**

- **Ecology**

- **Toxicology**

Enviro-Science

Why is Enviro-Science Important ?

- Interactions Between the Sciences
- Causes and Effects
- Indicators

Enviro-Science

Environmental Protection Agency's Mission

Protection of Public Health and Restoration
of the Natural Environment

Chemistry

- Most of What is Regulated are Chemicals.
- Organic vs. Inorganic
- Petroleum Hydrocarbons vs. Other Hydrocarbons

Toxicology

- Toxic Substance
- Toxic Chemical
- Toxic

Why is This Important ?



Persistent

Bioaccumulative

Toxics

Environmental Regulations

The Birth of The Environmental
Protection Agency

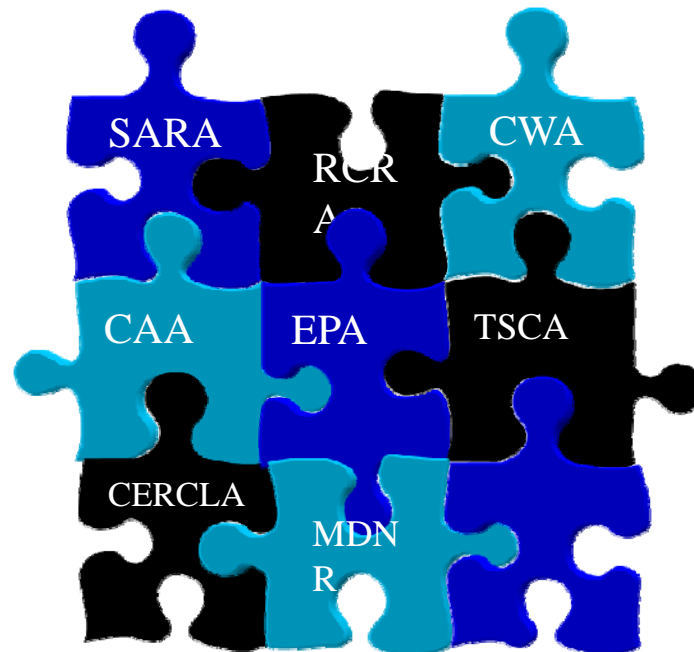
December 1970



Rules and Regulations

Overview

- The Big Puzzle



Who Does The Regulating ?

- Multiple and overlapping
- Regulatory Authority May be Delegated
- You Must Meet All Requirements



Federal Requirements

Sets Minimum Standards

May Delegate Regulatory Authority to States

Approves State Implementation Plans



State Requirements

Must Meet Federal Standards

May be More Restrictive

May Delegate Regulatory Authority to
Local Government

Approves Local Implementation Plans



Local Requirements

Must Meet Federal Standards

Must Meet State Standards

May be More Restrictive

What Does This Mean to You

- Multiple Regulations
- More than one Permitting Authority
- Multiple Inspections
- Confusion
- Opportunities for Violations

EPA

- Clean Air Act 1970
- National Ambient Air Quality Standards 1971
- Clean Water Act 1972
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) 1972
- Resource Conservation and Recovery Act (RCRA) 1976

EPA

- Toxic Substance Control Act (TOSCA) 1976
- Comprehensive Response, Compensation, and Liability Act (CERCLA) Superfund 1980

The Clean Air Act

The Major Purpose Of The Clean Air Act
Is To Protect And Enhance Air Quality

- Establishes Extensive Regulatory Program To Prevent, Control, And Abate Air Pollution
- Federalizes Regulation After Failure of States to Make Progress, But is still Heavily Skewed to State Control
- Makes Health Protection The Basis of Most Regulation

The Basic Structure Of The Act Takes A Three Pronged Approach To Controlling Pollution

- Control Strategy For Emissions From Existing Stationary Sources
- Technology Based Standards To Limit Emissions From New Stationary Sources
- Tailpipe Emission Standards For Mobile Sources

The Federal Law Serves As An Umbrella Under Which States Implement Major Programs

- EPA Establishes Standards To Protect Public Health And Welfare.

National Ambient Air Quality Standards (NAAQS)

- States Must Develop Plans To Implement, Attainment And Maintenance of NAAQS

State Implementation Plans (SIPs)

- EPA Approves and Maintains Oversight on SIPs

The Clean Air Act Is Biased In The Direction of Regulating New Sources

- New Source Performance Standards (NSPS)
Used to Enforce Technology Based Emission
Limitations Best Demonstrated Technology
- Significant Modification May Trigger NSPS
- EPA Established Categories for Which NSPSs
Are Promulgated

The Clean Air Act Has Special Provisions For Areas That Have Not Attained NAAQS

- New Or Modified Sources In Nonattainment Areas Must Meet Lowest Achievable Emission Rate

Pre-construction Review

- Existing Sources Must Install “ Reasonably Available Control Technology”
- EPA Can Apply a Construction Ban In Nonattainment Areas

Prevention Of Significant Deterioration Program

- Protects Air That Is Already Clean
- Provides for Class Designations And Limits On Clean Air That May Be “Consumed”
- New Sources Must Use Best Available Control Technology

National Emission Standards For Hazardous Air Pollutants (NESHAPs)

- Specific Requirements For Release of Individual HAPs
- Impose Emission Limitations on Whole Facility Plus Monitoring, Reporting, And Record Keeping Requirements

Air Operating Permits

- Comprehensive Permit Based On Potential To Emit.
- Requires Review of All Applicable Federal, State, and Local Air Regulations.
- May Set Federally Enforceable Limits on Control Devices, Production, and Emissions

The Statute Gives EPA Authority To Collect Information Needed For CAA's Programs


- May Require Source Owner To Test Emissions
- May Enter Premises To Test Emission Itself
- May Inspect Source's Operation, Records, And Monitoring Equipment
- May Require Owners To Maintain Records And Submit Reports

The Clean Air Act Also Has Criminal Sanctions

- \$25,000/Day And /Or Imprisonment Up To One Year For Knowing Violation Of Applicable SIP, NESHAP, Or Other CAA Requirement [Sect.113(C) (1)]
- \$10,000/Day And/Or Imprisonment Up To 6 Months For Knowingly Making False Statements In Documents Or Falsifying, Tampering With, Or Rendering Inaccurate Any Monitoring Device [Sect. 113 (C) (2)]

The Water Air Act

The Major Purpose Of The Clean Water Act Is To Restore And Maintain The Integrity Of The Nation's Waters



The Clean Water Act Makes It Illegal For
Any Person To Discharge Pollutants From
A Point Source Into Waters of The United
States Without A Permit

What Are “Pollutants ?”

- ✓ Chemical Wastes
- ✓ Heat
- ✓ Sand
- ✓ Biological Materials
- ✓ Sewage
- ✓ Rocks

What Is A Point Source ?

Any Discernible, Confined, And Discrete Conveyance, Including Any Pipe, Ditch, Channel, Tunnel, Conduit, Well, Ect, From Which Pollutants are or May Be Discharged.

What Are “Waters Of The United States” ?

- All Waters Used For Interstate Or Foreign Commerce;
- All Interstate Waters;
- All Intrastate Waters That Could Affect Interstate or Foreign Commerce;
- Wetlands Adjacent To Such Waters;
- Tributaries Of Such Waters; And
- The Territorial Seas.

The National Pollutant Discharge Elimination System

- Administered By EPA Or The States
- Permits Require Compliance With Federal Effluent Limitations

Technology Based

By Industrial Categories

or A Case By Case Basis

Levels Of Technology Based Standards For Existing Facilities

- Best Practicable Control Technology (BPT)
- Best Conventional Technology (BCT)
- Best Available Technology (BAT)

New Or Modified Facilities Are Subject To New Source Performance Standards

- Based On Best Available Demonstrated Technology
- Must Be Met When Source Begins To Discharge

NPDES Storm Water Permits

- Land Disturbance Of More Than 5 Acres
- Run Off From Buildings And Property
- May Require Sampling, Reports And Record Keeping

The Clean Water Act Provides For Criminal
Sanction Against Individuals Who Violate A Permit
Issued Pursuant to The Act Or Any Provisions Of
The Act

- Negligent Violations
- Knowing Violations
- Knowing Endangerment
- Knowingly Making A False Statement

NPDES And Section 404 Permit Programs Regulate The Discharge Of Pollutants To Surface Waters

- EPA Has Designated Hazardous Substances
- EPA Established Reporting Procedures And National Response Plans for Oil And Hazardous Releases
- Operators Of Vessels Or Facilities Are Required To Report Spills

Spill Prevention Control And Countermeasures Plans

40 CFR 112.3

Plans Must Contain

- Spill Prevention Procedures
- Spill Containment Procedures
- Provisions For Testing And Inspections
- Notification Procedures
- Accurate List Of Responsible Personnel



Failure To Notify Of A Spill Or Release Is Grounds For Criminal Penalties

\$10,000 and/or

1 Year In Prison

Toxic Substance Control Act

The Major Purpose Of The Toxic Substance Control Act Is To Regulate Commerce and Protect Human Health And The Environment By Requiring Testing and Necessary Use Restrictions On Certain Chemical Substances

TSCA Establishes A Mechanism For :

- Obtaining data to determine potential risk of exposure to chemicals
- Using data on chemicals to support restrictions on manufacture or use
- Manufacture and processing notices
- Testing Requirements
- Reports & Records
- Chemical Inventories

Chemicals Subject To TSCA Restrictions

- Polychlorinated Biphenyl's
- Fully Halogenated Chlorofluoroalkanes
- Asbestos
- Other Chemical Products


Prohibited Acts

- Failure to comply with rules, orders, or requirements
- Commercial use of a chemical manufactured or distributed in commerce in violation of TSCA
- Failure to establish or maintain records or permit access to them
- Failure to permit entry or inspection

Penalties

Up to \$25,000 per day per violation

and/ or Up to one year in prison for knowing or willful violation



The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

- Provided for Federal response and compensation for unpermitted and uncontrolled releases (including threats of release) of hazardous substances and oil into the environment
- Passed in response to growing national concern about leaking abandoned hazardous waste sites
- Established a five year \$1.6 billion Hazardous Substance Response Trust Fund (Superfund) for emergency response to releases and cleanup of closed sites
- Liability for costs of cleanup imposed on a broad class of “potentially responsible parties

- Addressed both “closed” site situations and active releases of hazardous substances into the environment
- Established “no fault” liability for hazardous substances and allows the government to
 - Spend funds to clean up sites and then seek reimbursement from liable parties
 - Compel liable parties to undertake cleanup on their own
- Self implementing; guidance documents often replace rulemaking in defining policy

Superfund amendments and Reauthorization Act (SARA)

- Provided greater role for States in Superfund
- Increased public participation in cleanups
- Established health related authorities
- Established a Federal facilities cleanup program
- Specified cleanup standards
- Established the Community Right To Know Program (Title III)

Elements of CERCLA Liability

- ✓ A Release (Or Threat of Release) Has Occurred
- ✓ The Release Involves A CERCLA Hazardous Substance
- ✓ A Party Is Potentially Responsible
- ✓ A Response Cost Was Incurred

CERCLA “Hazardous Substances” Are Broadly Defined

- Any element, compound, mixture, solution, or substance specially designated by EPA under Section 102 of CERCLA
- Any Toxic Pollutant listed under section 307(a) of the CWA
- Any Hazardous Substance regulated under Section 311(b)(2)(A) of the CWA
- Any listed or characteristic hazardous waste under Section 3001 of RCRA, but not including any waste for which regulation under RCRA has been suspended by Congress
- Any Hazardous air pollutant listed under Section 112 CAA

CERCLA “Release” Is Virtually All Conceivable Contacts With The Environment

- Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.
- The abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous waste
- Excluded Releases:

Any release solely within the work place

Exhaust emissions from mobile sources

Nuclear materials regulated under DOE

The normal application of fertilizer

Liability

- Four types of “potentially responsible parties” are liable for costs and damages arising from releases or threats of release of a hazardous Substance.

Current owners and operators

Owners and operators of a facility at the time of hazardous substance

Any party who arranges for disposal at another party’s facility (generators)

Any party who transported the hazardous substance to the facility

Liability Continued

- Each party is liable for three types of costs and damages

Costs of removal or remedial actions incurred by the Federal Government or a State

Response costs incurred by others

Damages to natural resources

- Response costs include the following

Site investigation and monitoring

Planning and conducting response action

Costs for litigation

Liability Continued

- The Standard of liability is “Strict”

No showing of fault is required where damages have occurred

- Court decisions held that liability is “joint and several”

Full damages may be recovered from one, some, or all of the potentially responsible parties

- Sara Section 113(f)(1) grants courts the right to allocate response costs among liable parties using such equitable factors as the court determines are appropriate

CERCLA Reporting Requirements for Releases

- Reportable Quantities (RQs) for all substances are set to one pound unless superceded by regulations
- “Federally Permitted Releases” need not be reported
- Releases exceeding RQs in any 24-hr period must be immediately reported to the NRC

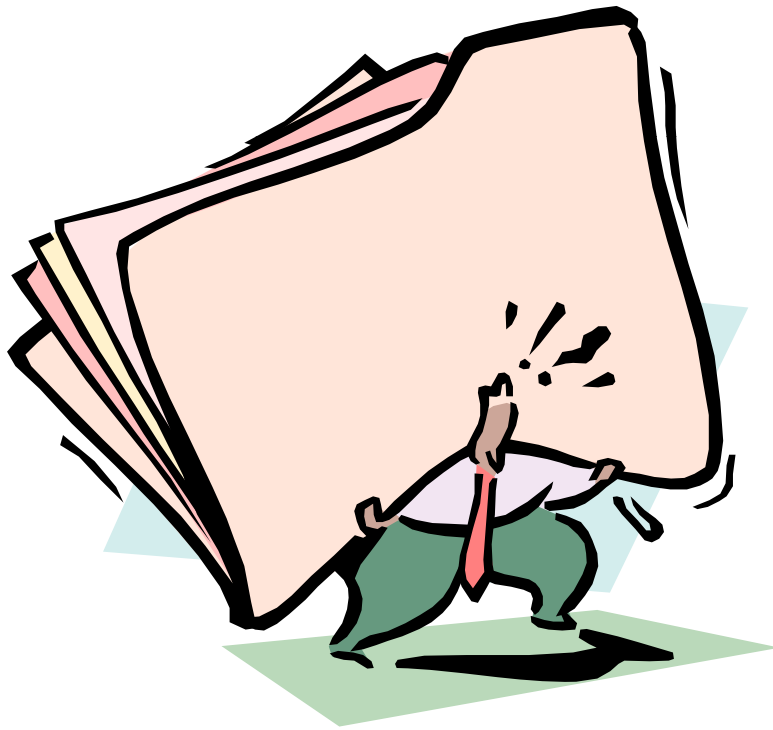
CERCLA Provides A Process For Cleaning Up The Environment

- Assigns authorities; responsibilities; and requirements for reporting, notification, and community relations
- Covers a broad universe of “hazardous chemicals”
- Establishes civil and criminal penalties for failure to report and providing false information and civil penalties for noncompliance
- Grants the EPA broad authorities for carrying out response actions

Summary

- Requires public and State participation
- Establishes national cleanup standards
- CERCLA will continue to evolve

Permitting And Reports



Introduction

In This Day And Age Of Environmental Concern And Regulation Almost Every Work Activity Requires Some Form Of Permit Or Report From One or More Regulatory Agency.

Permits

- Air
- Water
- Construction
- Hazardous Waste
- Operating
- Discharging
- Emissions

Permits General Process

- Identify Need For A Permit
- Determine Requirements
- Obtain Guidance And Required Documents From The Permitting Authority
- Complete Application With Required Fees
- Make Sure It Is Complete
- Get The Right Signatures

Reports

- SARA Tier II
- Environmental Inventory Questionnaire EIQ
- Toxic Release Inventory Report, Form R
- National Pollution Elimination Discharge System NPDES
- Biennial Report
- Hazardous Waste Reports

Who Requires These Reports ?

- EPA
- State Environmental Authorities
- Local Environmental Authorities
- Others

SARA Tier II Community Right To Know

- Annual Requirement
- Due March 1st
- Reports all Materials Requiring A Material Safety Data Sheet on Site In Quantities Greater Than 10,000 Lbs at Any Time.
- Fees for Each Chemical Reported

SARA Tier II Community Right To Know

- Sent To:

State Emergency Planning Council

Local Emergency Planning Council

Local Fire Department

Environmental Inventory Questionnaire EIQ

- Annual Requirement
- Due June 1st
- Comprehensive Report of Air Emissions for The Prior Year for All Site Air Emission Sources.
- Fees for Tons of Pollutants Emitted

Environmental Inventory Questionnaire EIQ

- Sent To:

State or Local Air Quality Authority

- Used For Enforcement of Air Quality Standards, Location of Point Sources, Development of Air Models and Planning
- Compared to Other Required Reports

Toxic Release Inventory TRI Form R

- Annual Requirement
- Due July 1st
- Comprehensive Report of Toxic Chemical Released to The Environment by Manufacturing Companies.

Toxic Release Inventory

- Sent To:

EPA & State Environmental Authority

- Used For Enforcement of Various Waste and Reporting Programs. Information Accessible to Public. Used By Environmental & Citizens Groups.
- Compared to Other Required Reports

Other Reports

- Most Are Permit Driven
- Requirements Vary By Permitting Authority
- Can Be Very Complex

Summary