# US EPA Pretreatment Webcast Series

## The Pretreatment 101 Series: POTW Pretreatment Considerations and Permitting Programs for Hauled Waste

October 24, 2012

**Speakers:**

- Jan Pickrel, U.S. EPA
- Lynn Kurth, Tetra Tech, Inc.
- Byron Ross, Monitoring and Management Services

**Moderator:**

- Ann Zimmerman, Tetra Tech, Inc.

Office of Wastewater Management, U.S. Environmental Protection Agency

# Guide to Our Webcasts

- To Ask a Question – Type your question in the text box located at the bottom of your screen
- To Answer Poll Question – Click on the radio button to the left of your choice and click submit. Do not type your answer in the "Ask a Question" box
- To Complete the Evaluation – Answer questions in the slide window
- To See Closed Captioning – Turn your pop-up blocker off and click on the "closed captioning" button
- Certificate of Participation – Is available after 90 minutes of contact time

# Introduction to the Pretreatment Webcast Series

Jan Pickrel
National Pretreatment Coordinator
Environmental Protection Agency

# Pretreatment 101 Series

- Available archived webcasts:
  - Introduction to the National Pretreatment Program
  - Industrial User Waste Survey Procedures
  - POTW's Procedures for Conducting Compliance Inspections
  - POTW's Procedures for Conducting Compliance Monitoring
  - Overview of Pretreatment Standards
  - Pretreatment Standards - Local Limits Development
  - IU Permitting
- www.epa.gov/npdes/training

# Common Acronyms

CWA – Clean Water Act

FOG – Fats, Oil, and Grease

FSE – Food Service Establishment

POTW – Publicly Owned Treatment Works

CFR – Code of Federal Regulations

CWT – Centralized Waste Treatment Facility

RCRA – Resource Conservation and Recovery Act

TDS – Total Dissolved Solids

TSDF – Treatment, Storage, and Disposal Facilities

# Outline of Today's Webcast

- Federal requirements
- Definition of hauled waste
- Common types of hauled waste
- Considerations prior to accepting hauled waste
- Managing hauled waste
- Specific issues with common types of hauled wastes

# Federal Requirements- Prohibited Discharges

- Hauled waste must comply with the specific prohibitions listed at 40 CFR 403.5(b)
- Any trucked or hauled pollutants must not be introduced into a POTW, except at discharge points designated by the POTW. [40 CFR 403.5(b)(8)]

# Federal Requirements- Categorical Wastewater

Categorically regulated wastewater that is hauled to the POTW must still comply with applicable categorical standards and requirements.

# Federal POTW Reporting

NPDES permit applications must contain information regarding the acceptance of:

- Industrial discharges [40 CFR 122.21(j)(6)]
- Any RCRA, CERCLA, or RCRA Corrective Action wastes or wastes generated at another type of cleanup or remediation site [40 CFR 122.21(j)(7)]

# Federal POTW Reporting

- POTWs with NPDES permit must notify the NPDES permitting authority when there is:
- Any new introduction of pollutants into the POTW
- Any substantial changes in the volume or character of pollutants

[40 CFR 122.42(b)]

# Accepting and Managing Hauled Waste

Lynn Kurth
Principal Environmental Scientist
Tetra Tech, Inc.

# Overview of What Will be Covered

- Definition of Hauled Waste
  - Hauled waste requirements under the National Pretreatment Program
- Common Types of Hauled Waste
- POTWs Considerations Prior to Accepting Hauled Waste
- Controls POTWs can use to Manage Hauled Waste
- Issues Specific to Common Waste Types

# What is Hauled Waste?

- Any wastes delivered to by truck or rail car
- 40 CFR 403.5(b)(8) – designated discharge point
- Guidance Manual for the Control of Wastes Hauled to Publicly Owned Treatment Works (1999)

  http://www.epa.gov/npdes/pubs/hwfinal.pdf

# Types of Hauled Waste

- Septage
- Grease traps
- Portable/Chemical Toilets
- Landfill Leachate
- Groundwater Remediation
- Non-hazardous Commercial/Industrial waste (categorical and noncategorical)
- Hazardous Industrial Waste

# POTW Considerations Prior to Accepting Hauled Waste

- Potential impacts to the POTW
- POTW capabilities to accept hauled waste
- Characteristics of the hauled waste

# Potential Impacts to POTWs

- Pass through
- Interference
- Sludge inhibition and contamination
- Slug discharge overload
- Other nuisances (odor, pump clogging)
- Bioaccumulative Substances
- Hazards to POTW personnel

# Potential Impacts: Pass through

- Pass through is defined at 40 CFR 403.3(p)
- Discharge that causes violation of NPDES permit
- Hauled waste can cause slug loadings
- Pass through to receiving stream can cause toxicity

# Potential Impacts: Interference

- Interference is defined at 40 CFR 403.3(k)
- Inhibits or disrupts the POTW treatment processes
- Can lead to NPDES permit violation

# Potential Impacts: Sludge Inhibition and Contamination

- Toxic metals destroy bacteria in digesters
- Toxic loads inhibit bacteria reproduction
- Sludge disposal and reuse problems

# Potential Impacts: Slug loads, Other Nuisances, Bioaccumulation

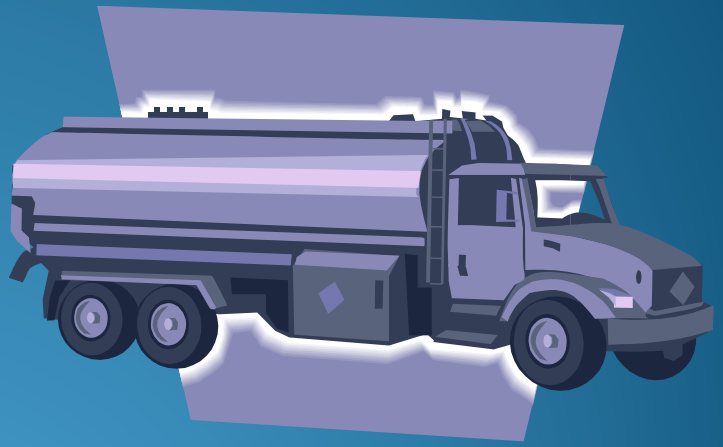
- Slug loads can cause overloads at the plant
- Other nuisances include odors, clogged pumps
- Bioaccumulation of toxic substance can impact Whole Effluent Toxicity

# Potential Impacts: Worker Hazards

- Fires
- Explosions
- Asphyxiation
- Poisoning
- Burns
- Nausea/vomiting
- Sore throat/coughing
- Headaches
- Fatigue
- Dizziness
- Eye, throat, nose, lung, and skin irritations
- Respiratory

# Determine POTW Capabilities to Accept Hauled Waste

- Survey Potential Waste Haulers
- Survey Types of Hauled Waste
- Review Treatment Capabilities



# Survey Potential Waste Haulers

- Business license records
- Chamber of Commerce rosters
- Local telephone directories
- Internet searches
- City and State industrial directories
- State/County Health Departments.
- Businesses identified as having grease traps, sand traps
- State lists of hazardous waste generators and treatment, storage, and disposal facilities (TSDFs).

# Survey Types of Hauled Waste

- What users do not have a sewer connection?
- What is in nondomestic waste that will be hauled?
- Which FSEs have grease traps?
- Know the users in your service area.

# Review Treatment Capabilities

- Technical Feasibility Analysis
- Local Limits Development
- Reject/Accept and Watch

# Technical Feasibility Analysis

- Hydraulic and organic capacity
- Unit operations suitable for treating hauled waste pollutants
- Control feed rates of hauled waste

Local Limits Development Guidance, EPA 2004
http://www.epa.gov/npdes/pubs/final_local_limits_guidance.pdf

# Local Limits Development

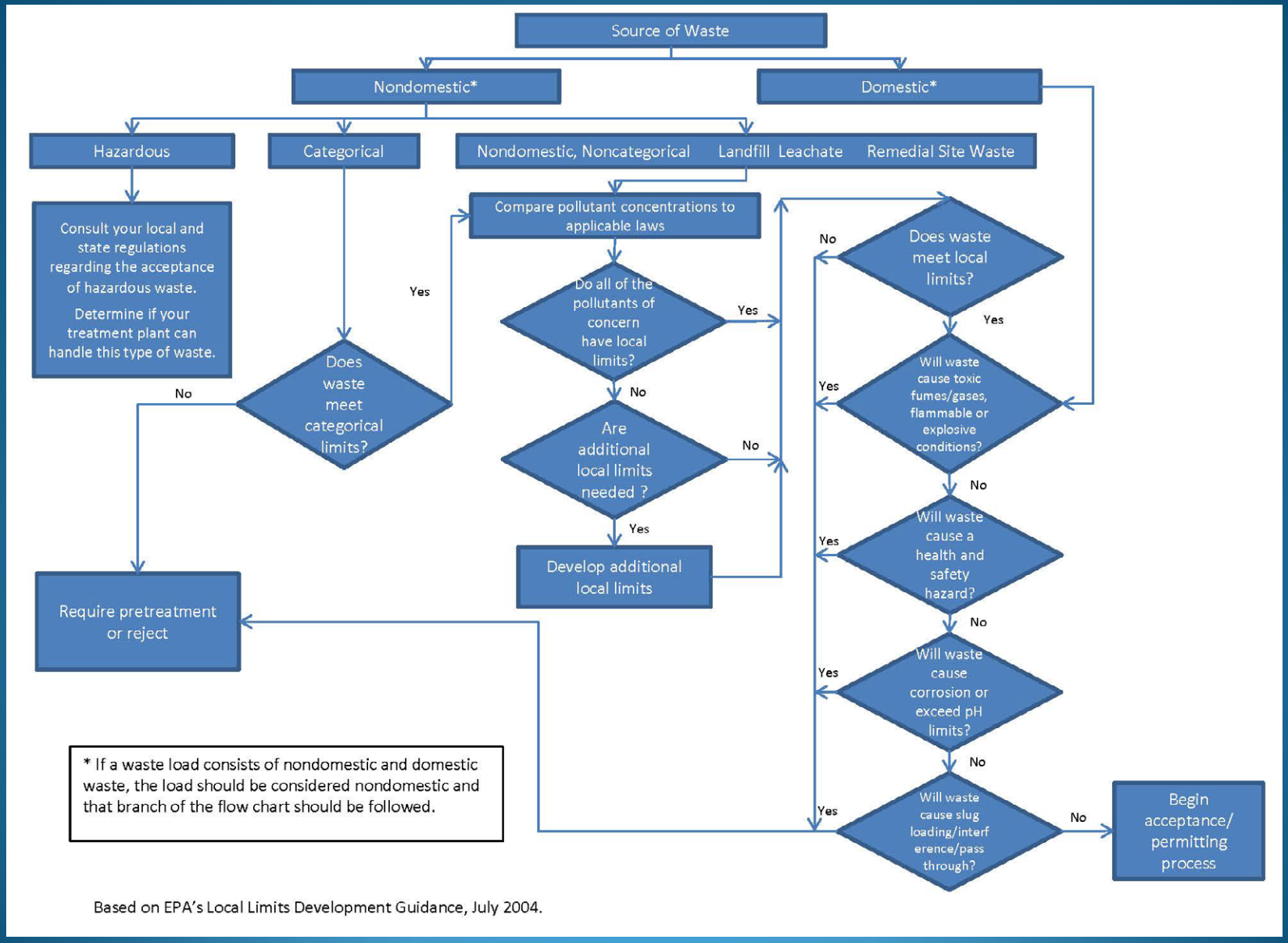
- Maximum Allowable Headworks Loadings
- Maximum Allowable Industrial Loadings
- Account for hauled waste in local limits development

Local Limits Development Guidance, EPA 2004
http://www.epa.gov/npdes/pubs/final_local_limits_guidance.pdf

# Characterize the Hauled Waste to Determine Whether it is Acceptable

- What is the source?
- What are the pollutant concentrations?
- What is the volume?
- Does it meet standards?
- Is waste compatible with existing treatment?

# Determining Hauled Waste Characteristics




Based on EPA's Local Limits Development Guidance, July 2004.

# How POTWs Can Manage Hauled Waste

- Legal Authority
  - State law
  - Local Ordinance
- Controlled, Designated Disposal Sites [40 CFR 403.5(b)(8)]
- Apply Numerical and Narrative Standards
- Issue Waste Hauler Permits

# How POTWs Can Manage Hauled Waste (continued)

- Monitoring Program
- Waste Tracking/Manifest System
- Identification of Illegal Dischargers
- Communication
- Maintain Data and Information

# Hauled Waste Provisions

Legal authority to:

- Implement a hauled waste program
- Require and issue permits to waste generator and/or waste hauler
- Require compliance with all discharge requirements
- Require sample collection and analysis
- Require POTW consent prior to discharge
- Allow discharge at designate discharge location(s)
- Require waste manifests
- Implement applicable enforcement actions

# Control Designated Disposal Sites

- Choosing a Site
- Site Access and Security
- Operational Considerations

# Choosing a Discharge Site

- Treatment Plant or Remote Site
- Vehicle access
- Wear on roads
- Security
- Visibility
- Surface and Slope of Discharge Area
- Odor

# Operational Considerations

Access and Security

- Locked gates
- Electronic access system
- Security cameras

Hours of Operation

- Personnel Availability
- Peak/low flows
- Hauler’s schedules

# Apply Numerical and Narrative Standards

Applicable Numerical Standards

- Local Limits
- Categorical Standards
- Exceeded? Reject

Applicable Narrative Standards

- Toxic fumes, worker hazards
- Visual observation
- Follow-up testing
- Slug loading
- Pass through

# Issue Waste Hauler Permits

- Legal authority
- Permit Application
- Permit Contents

# Permit Application

- Name of business and owner
- Address and phone number
- Estimated number and volume of loads
- Number and capacity of vehicles
- Hours of operation
- Names of other POTWs where hauled waste is discharged
- Any analytical/physical data collected
- List of customers and a description of each customer's waste

# Permit Contents

- Right of refusal to accept waste
- Description of type of load to be discharged
- Prohibited Discharges
- National Categorical Pretreatment Standards
- Applicable Discharge Limits

# Permit Contents (continued)

- Designated Disposal Site
- Number of Loads/rate of discharge
- Time Limitations
- Waste Tracking/Manifest System
- Notification of Change of Waste Type
- Standard Conditions
- Industrial User Permitting Guidance Manual, EPA 2012

# Monitoring Program

- Purpose of Monitoring Program
- Sampling Techniques
- Sampling Procedures
- Sample Types – Grab and Composite, Visual
- Sampling and Analysis Frequency

# Purpose of Monitoring Program

- Ensure permit requirements are met
- Reject or accept the waste
- Track loads they may have caused problems
- Demonstrates oversight

# Proper Sampling Techniques

- Sampling Procedures (40 Part 136)
- Sample Collection
- Preservation
- Storage
- Analysis
  - Rapid Toxicity Testing

# Sampling Procedures

- Visual observation
- pH monitoring
- Explosivity meter
- Grab/composite sampling

# Sampling Types

Grab Sampling

- A single discreet sample collected over a short period of time
- Provides a “snapshot” of the discharge
- Use if discharge is homogeneous
- Required for pH, oil and grease, temperature, total phenol, cyanide, sulfides, and volatile organics.

# Sample Types

Composite Sampling

- A mixed sample that combines a series of grab samples collected over a period of time
- Use if discharge is nonhomogeneous
- Collect at least three discrete samples

# Sampling and Analysis Frequency

- Every waste load
- Percentage of waste loads
- Random

# Waste Tracking/Manifest System

- Name, address and phone number (hauler and generator)
- Types of wastes collected
- Approximate volume(s) received by the hauler
- Known or suspected pollutants
- Certification that the waste is not hazardous or subject to categorical standards
- Results of any testing performed on the wastewater

# Automated System – Card Swipe

# Identification of Illegal Dischargers

- Periodic sampling of suspected sewer lines
- Surveillance of waste haulers and suspected discharge points
- Education of industries concerning the seriousness of these violations
- Increased public awareness of illegal dumping
- Increased enforcement

# Communication

With other POTWs

- Share Information about hauled waste
- Rejected loads
- Frequent Violators

With Waste Haulers

- Information on plant policies
- Changes in operating times or fees

# Review and Update Controls Periodically

- Is type of hauled waste the same?
- Are the controls still adequate?

# Maintain Data and Information

- Haulers and types of wastes
- Receipts
- Sampling results
- Share data

# Question and Answer Session

# Issues Specific to Each Hauled Waste Type

Byron Ross
President
Monitoring & Management Services, LLC

# Issues Specific to Each Hauled Waste Type

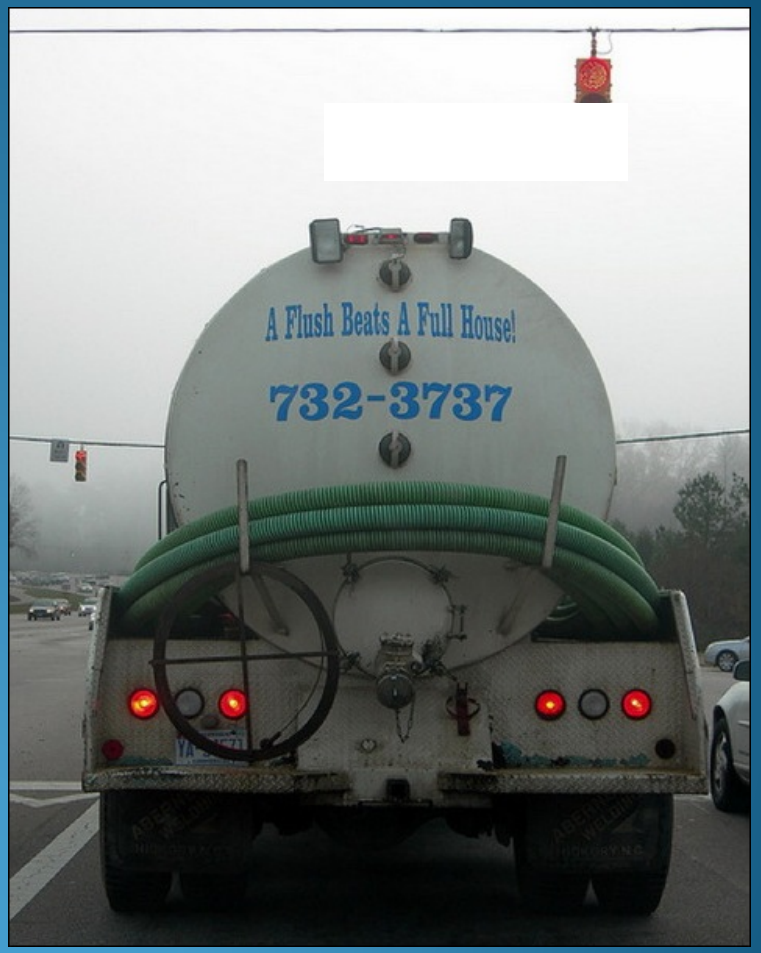
- Source
- Pollutant Identification and Pollutant Concentrations
- POTW Impacts
- Controls to Prevent Problems at the POTW

# Common Types and Sources of Hauled Waste

- Domestic septage
- Fats, Oil and Grease (FOG)
- Portable toilet
- Landfill leachate
- Groundwater remediation
- Nonhazardous commercial/industrial waste
- Hazardous waste

# Domestic Septage…

- Septic tank,
- Cesspool,
- Holding tank,
- Similar systems
- High concentrations of solids and metals



# Septage (Septic Tank) Waste – Organic Loading to the POTW

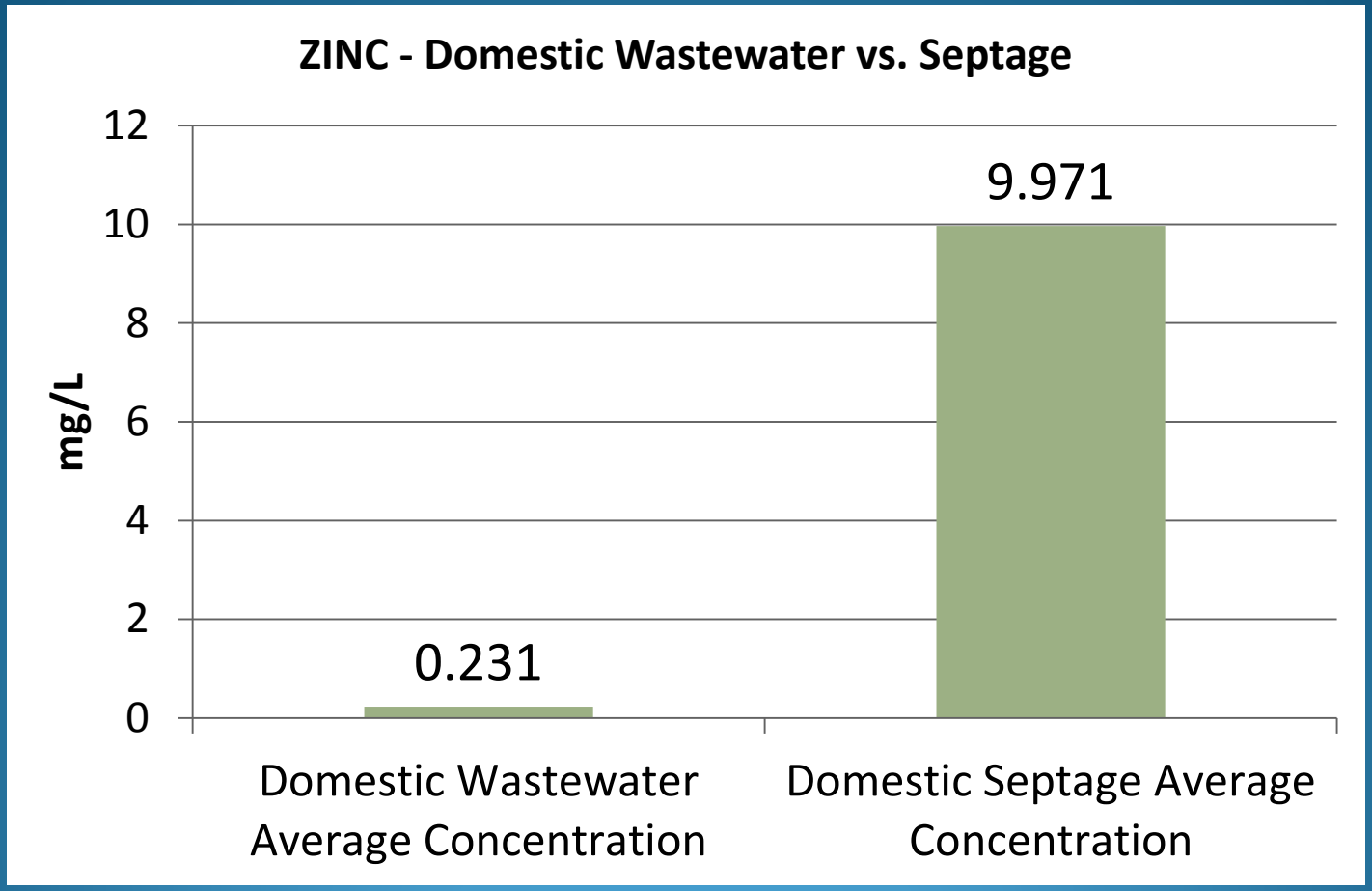
- Biochemical Oxygen Demand (BOD5)
  - Average: 6,480 mg/L
    (US EPA Domestic Septage Regulatory Guidance document)
  - Average: 4,432; Range: 250 to 19,000 mg/L
    (45 samples from Metro Water Services, Nashville, TN data)
- Total Solids
  - Average: 3.4%
    (US EPA Domestic Septage Regulatory Guidance document)
- Total Suspended Solids
  - Average: 16,567 mg/L; Range: 220 to 70,420 mg/L
    (79 samples from Metro Water Services, Nashville, TN data)

# Septage (Septic Tank) Waste – Loading to the POTW

- pH
  - Range: 6 to 7 standard units (s.u.) (US EPA Domestic Septage Regulatory Guidance document)
  - Range: 5.9 to 9.0 s.u. (78 samples from Metro Water Services, Nashville, TN data)

- Oil and Grease
  - Range: 6% to 12% (US EPA Domestic Septage Regulatory Guidance document)
  - Average: 127 mg/L; Range: 26 to 480 mg/L (11 samples from Metro Water Services, Nashville, TN data)

# Septage Waste Data – ZINC



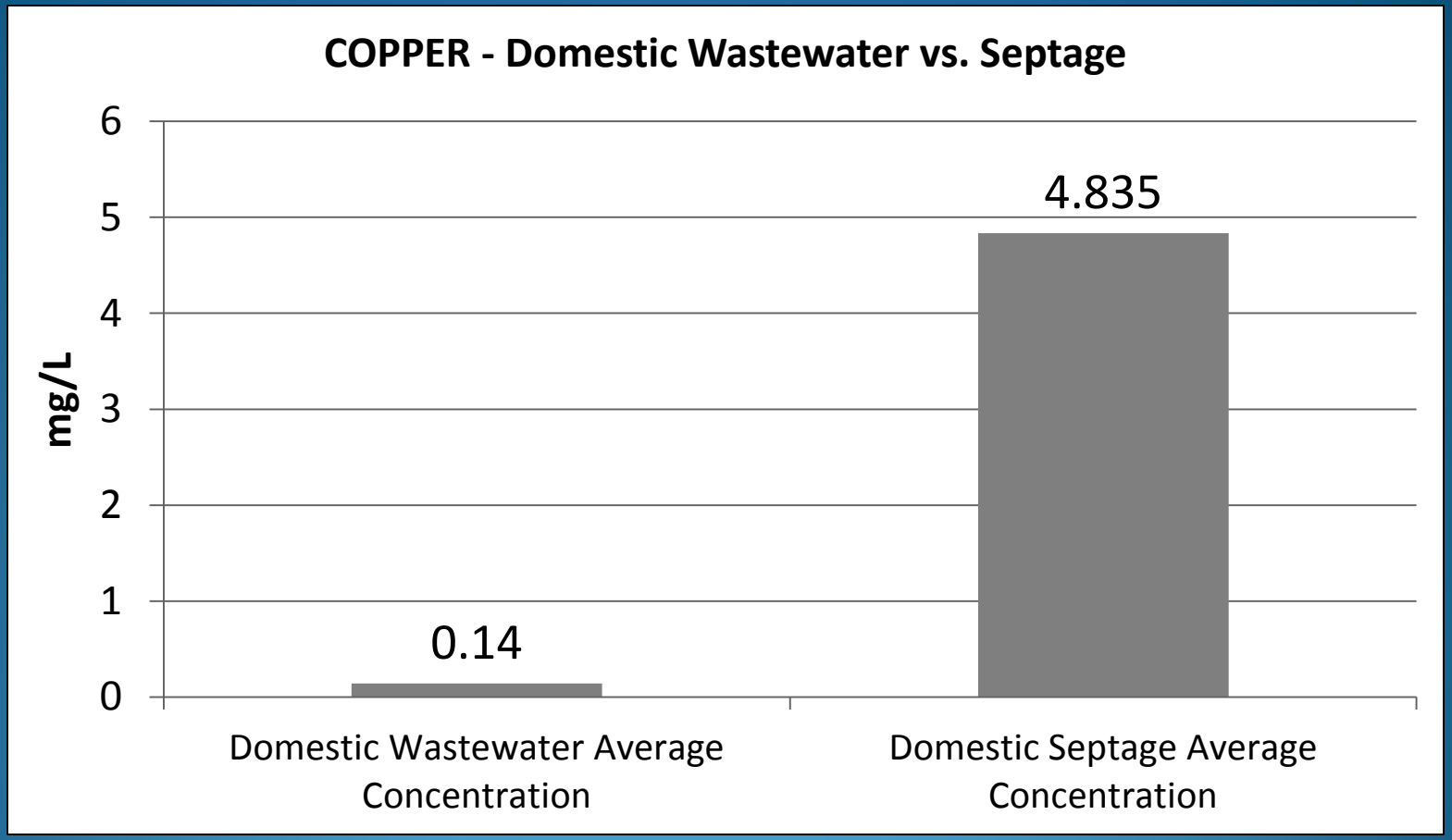

Septage Zinc Range: 0.01 – **444** mg/L

Source: Local Limits Development Guidance Appendices L and V, EPA 2004

# Septage Zinc Sources

- Personal Hygiene Products (zinc oxide, etc…)
- Plumbing / Pipes
- Cleaners
- Medicines

# Septage Waste Data – COPPER




Septage Copper Range: 0.01 – **260** mg/L

Source: Local Limits Development Guidance Appendices L and V, EPA 2004

# Septage Waste – Metals Concentrations

| Pollutant | Domestic Septage (mg/l) | |
|---|---|---|
| | Range | Average |
| Arsenic | 0 – 3.45 | 0.141 |
| Barium | 0.002 – 202 | 5.758 |
| Cadmium | 0.005 – 8.1 | 0.097 |
| Chromium (Total) | 0.01 – 34 | 0.49 |
| Copper | 0.01 – 260.9 | 4.835 |
| Cyanide | 0.001 – 1.53 | 0.469 |
| Iron | 0.2 – 2,740 | 39.28 |
| Lead | <0.025 – 118 | 1.21 |
| Manganese | 0.55 – 17.05 | 6.088 |
| Mercury | 0.0001 – 0.742 | 0.005 |
| Nickel | 0.01 – 37 | 0.526 |
| Silver | <0.003 – 5 | 0.099 |
| Zinc | <0.001 – 444 | 9.971 |

Source: Local Limits Development Guidance Appendices L and V, EPA 2004

# Septage Waste - Other Pollutants

- Elevated ammonia and sulfide concentrations could occur due to septic/anaerobic conditions.
- Some septage waste may contain semi-volatile organics (toilet cleaners, disinfectants, PVC plumbing)
  - Naphthalene
  - Phthalates
  - Dichlorobenzene
  - Phenols
  - Other Chlorinated products

# Septage Controls

- Waste Manifests
- Visual observations and documentation
- pH monitoring
- Collection of a sample of the hauled waste
- Retention or storage of the hauled waste

# Automatic pH Testing

POTW in Fairfax County, Virginia

- Waste is discharged into holding tanks
- pH is tested
- Procedures for acceptable and non-acceptable wastes

# Hauled Waste Monitoring and Worker Safety

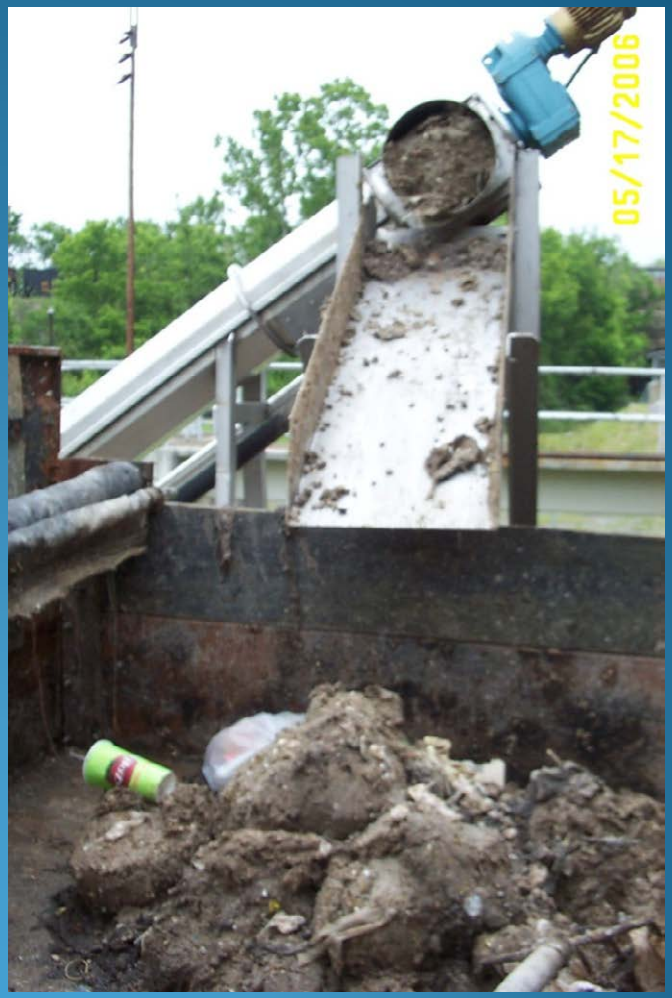
## *Air*

- **Combustible Gas Meter**: measures the combustible gas or vapor content
- **Colorimetric Tubes:** measures toxic gases and vapor levels

## *Wastewater*

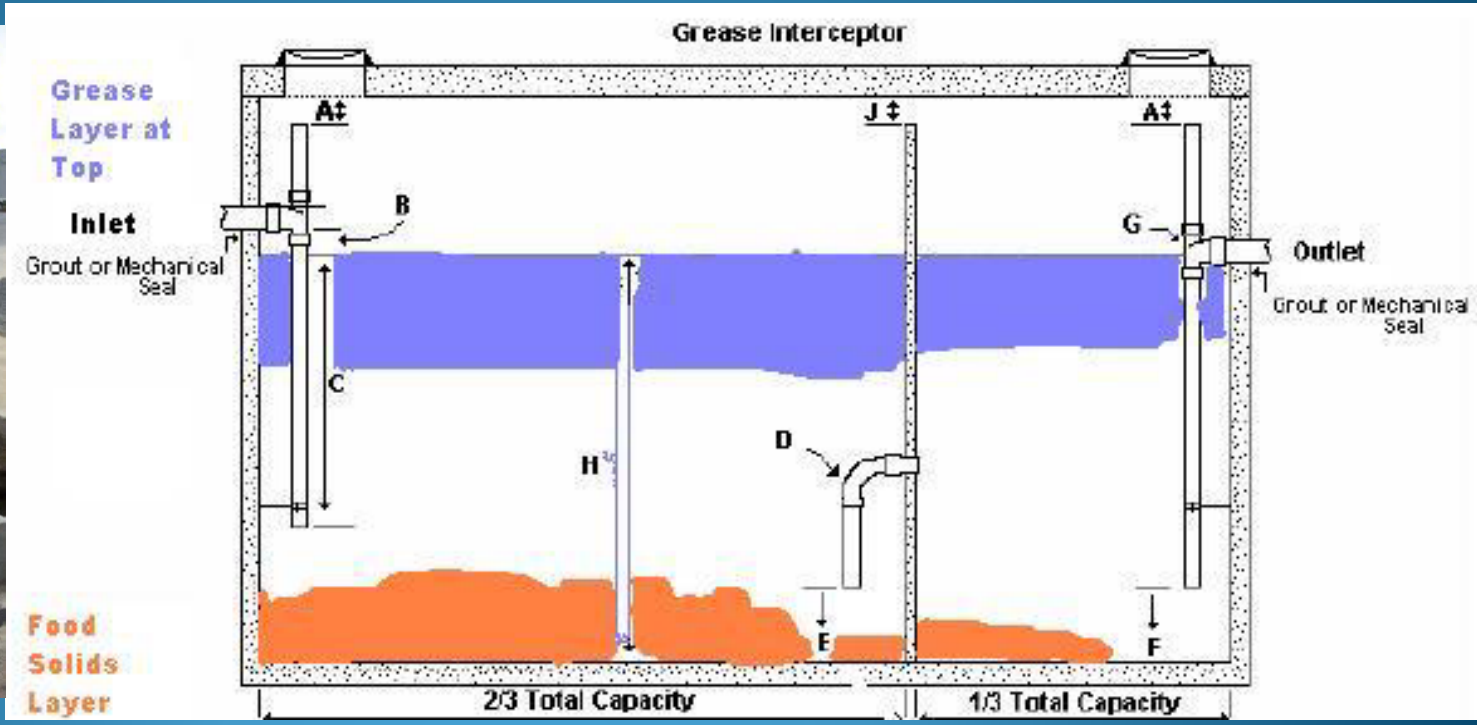
- **REDOX meter:** monitors chemical reactions and quantifies ion activity
- **Flashpoint tester (closed cup)**: determines the lowest temperature at which there is enough flammable vapor to ignite when an ignition source is applied

# Hauled Waste Receiving Stations at POTWs

# Fats, Oils, & Grease (FOG)

- Animal or vegetable origin

# Fats, Oils, & Grease (FOG) – Loading to the POTW

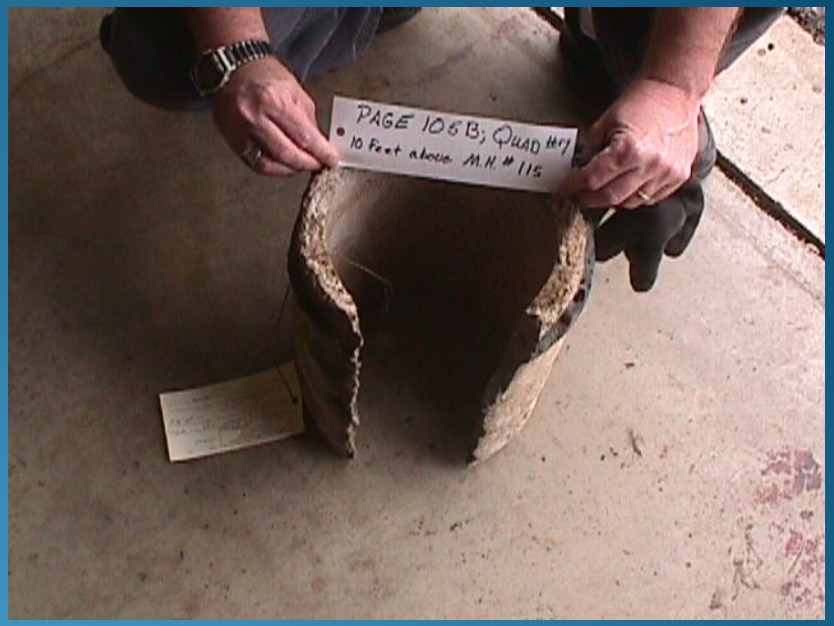
- Biochemical Oxygen Demand (BOD5) (28 samples from Metro Water Services, Nashville, TN data)
  - Average: 31,046 mg/L
  - Range: 1,100 to 110,000 mg/L
- Total Suspended Solids (53 samples from Metro Water Services, Nashville, TN data)
  - Average: 42,842 mg/L
  - Range: 860 to 280,000 mg/L
- Oil and Grease (9 samples from Metro Water Services, Nashville, TN data)
  - Average: 8,263 mg/L
  - Range: 1,629 to 19,160 mg/L

# FOG Waste – pH

- Range 3.3 to 7.1 s.u. (Median: 4.8 s.u.)
  (52 samples from Metro Water Services, Nashville, TN data)
- Why is the pH so low?
  - Anaerobic conditions in the grease interceptor
  - Colas, acidic drinks
  - Cleaners, disinfectants, etc…
  - Sugars
- Monitor pH to prevent impacts to the POTW
  - Prevent corrosion damage
  - Prevent POTW inhibition, upset

# FOG Waste – pH , corrosion


Sulfide corrosion downstream of food service establishments




Sewer pipe deterioration due to a food processing industrial user

Corrosion problems can occur at the Wastewater Treatment Plant and in the wastewater collection system due to FOG. “POTW” includes collection system.

# FOG Waste – Metals Concentrations

(53 samples from Metro Water Services, Nashville, TN data)

| Pollutant | Concentration Range (mg/L) |
|---|---|
| Cadmium | 0.01 – 0.48 |
| Copper | 0.19 – 33 |
| Chromium, Total | 0.02 – 1.4 |
| Lead | 0.11 – 5.7 |
| Nickel | 0.06 – 1.4 |
| Zinc | 0.29 – 140 |


# POTW Impacts from FOG Waste

- Clogs pipes
- Causes interference at the WWTP
  - Biological treatment
  - Sludge processing
- Causes odors
- Causes corrosion
- Causes passthrough violations
  - Organic overloading

# FOG Waste Controls

- Pretreatment of FOG Waste
  - Screening
  - Grinding (Muffin Monster)
  - pH adjustment and chemical addition to separate FOG
- Sludge Processing
  - Anaerobic Digestion
  - Sludge dewatering (belt press, centrifuge, filter box, drying beds)

# FOG Disposal Alternatives

- Landfill
- Beneficial Reuse
  - Recycles FOG into fuel and other products

# Portable Toilets/Chemical Toilets

- Waste from portable toilets, type III marine sanitation devices, and chemical toilets
- Chemicals used
  - Previously Used Formaldehyde
  - “Anti-Freeze” or alcohol during Winter months
  - Disinfectant and antibacterial agents
  - Glutaraldehyde, Quaternary Ammonium Compounds, Nitrate based products, Phenolic Compounds, and enzymes

# Portable/Chemical Toilet Waste Data

- Biochemical Oxygen Demand (BOD5) (27 samples from Metro Water Services, Nashville, TN data)
  - Average: 7,752 mg/L
  - Range: 1,800 to 13,000 mg/L
- Total Suspended Solids (54 samples from Metro Water Services, Nashville, TN data)
  - Average: 11,560 mg/L
  - Range: 400 to 79,000 mg/L
- Oil and Grease (10 samples from Metro Water Services, Nashville, TN data)
  - Average: 73 mg/L
  - Range: 18 to 260 mg/L

# Portable/Chemical Toilet Waste Data

**(54 samples from Metro Water Services, Nashville, TN data)**

| Pollutant | Concentration Range (mg/L) |
|---|---|
| Cadmium | 0.01 - 0.19 |
| Copper | 0.13 - 210 |
| Chromium, Total | 0.03 – 0.80 |
| Lead | 0.11 – 6.8 |
| Nickel | 0.08 – 0.67 |
| Zinc | 0.5 – 88 |

pH range: 5.7 to 9.0 s.u.

Remember to conduct analysis for organic pollutants (Semi-volatile Organics and Volatile Organics). Protect against potential Whole Effluent Toxicity impacts.

# Controls for Portable and Chemical Toilets

- Obtain detailed information on the chemical(s) used by each Portable/Chemical Toilet Waste Hauler Company.
  - Material Safety Data Sheets (MSDS)
    - Remember that if a chemical is listed as 1% or less, then it could still be a problem. 1% = 10,000 mg/L.
  - Chemical analysis
- Require the Waste Hauler to report to the POTW if any chemical changes of the portable toilet mixture are made.

# Landfill Leachate

Factors which can effect landfill leachate quality include:

- Type and composition of wastes
- Age of wastes
- Climate and moisture composition of wastes
- Waste processing and compaction and other landfill operational aspects
- Temperature, pH, and redox condition in landfill
- Presence of large quantities of municipal sewage sludge or industrial sludge or wastes
- Thickness of refuse layer
- Permeability, thickness, compaction, and slope of daily and final cover.

*Source: Guidance Manual for the Control of Wastes Hauled to POTWs, US EPA, 1999*

# Landfill Leachate Data

| Parameter | Non-hazardous Municipal Landfill Median Concentration (ug/L) | Non-hazardous Non-municipal Landfill Median Concentration (ug/L) |
|---|---|---|
| BOD5 | 209,786 | 67,000 |
| COD | 1,023,000 | 1,100,000 |
| TSS | 150,000 | 20,500 |
| Ammonia as Nitrogen | 81,717 | 75,000 |
| Nitrate/Nitrite | 651 | 4,850,000 |
| TDS | 2,894,289 | 4,850,000 |
| TOC | 376,521 | 236,000 |
| Total Phenols | 637 | 251 |

*Source: Effluent Limitations Guidelines: Landfill Point Source Category. Technical Development Document for Proposed Effluent Limitations Guidelines, January 1998.*

# Landfill Leachate – Other Pollutants

- Phenols – resin for plywood adhesives, particle board, press boards
- Phthalates – PVC resins
- Benzene, Toluene, Ethylbenzene, Xylene (BTEX)
- Hydrogen sulfide
- Heavy Metals
  - Arsenic (wood preservatives)
  - Cadmium
  - Chromium, total
  - Copper
  - Lead
  - Nickel
  - Zinc

# Groundwater Remediation Waste

Sources

- Underground storage tank sites
- Landfills
- Superfund Site (not required to accept)
  - For CERCLA guidance, refer to CERCLA Site Discharges to POTWs Guidance Manual, EPA 1990 (EPA/542/6-90/005).

# Groundwater Remediation Waste

- Is it an underground storage tank site? Or associated with fuel or petroleum?
  - If YES, then need to analyze for:
    - BTEX (Benzene, Toluene, Ethylbenzene, Xylene)
    - MTBE (Methyl Tert-Butyl Ether)
    - Naphthalene
    - Lead
    - Petroleum oils and grease
- Have you established a BTEX local limit? Recommended to have limit established to determine if groundwater remediation waste could be accepted.

# Non-Hazardous Commercial/Industrial Waste

Sources

- Process wastes
- Cooling water
- Boiler blowdown

# Pollutants of Concern from Non-Hazardous Commercial/Industrial Waste

- Wastes from food processing facilities
  - BOD5, TSS, and Oil and Grease
- Wastes from industrial laundry, dry cleaner facilities
  - Organics and solvents
- Cooling water & boiler blowdown
  - Molybdenum, copper, and zinc
- Water softener waste
  - Total dissolved solids and chloride

http://www.epa.gov/compliance/resources/publications/assistance/sectors/notebooks/index.html)

# Controlling Non-hazardous Industrial Waste

- Apply categorical pretreatment standards
- Apply local limits
- Regulate as an SIU
- Require change of pollutants discharged
- Review MSDS forms and TCLP results
- Regulate waste generator

# Hazardous Waste
## (defined as 40 CFR 261.21-24)

POTWs that accept hazardous hauled wastes are:

- Considered TSDFs
- Subject to RCRA regulations under 40 CFR Part 264

Refer to the *Guidance Manual for the Identification of Hazardous Wastes Delivered to Publicly Owned Treatment Works by Truck, Rail, or Dedicated Pipe*, EPA 1987 for more information.
http://www.epa.gov/npdes/pubs/owm0190.pdf

# Need More Information About Hazardous Waste?

- F-List: wastes from common manufacturing and industrial processes [40 CFR 261.31]
- K-List: wastes from specific industries [40 CFR 261.32]
- P-List: acutely hazardous wastes
- U-List: unused or off-spec chemical wastes

**Hazardous waste lists are in 40 CFR 261, subpart D**

# Do NOT accept hauled waste until you have….

- Accounted for the hauled waste loading in local limit calculations.
- Conducted a technical review to establish that receiving hauled waste will not cause POTW upset, interference, inhibition, passthrough, impact sludge quality, and worker safety.

# Hauled Waste Limits or Local Limits?

- Some POTWs apply local limits to hauled waste.
- Majority of hauled waste cannot comply with local limits.
- At a minimum, the POTW should:
  - Account for hauled waste loadings for each individual pollutant during local limits calculations

$$MAIL = MAHL(1 - SF) - (L_{UNC} + HW + GA)$$

Where:

| | |
|---|---|
| $MAIL$ = | Maximum allowable industrial loading, lb/day |
| $MAHL$ = | Maximum allowable headworks loading, lb/day |
| $SF$ = | Safety factor, if desired |
| $L_{UNC}$ = | Loadings from uncontrolled sources (uncontrolled sources= domestic + some commercial + I&I) |
| $HW$ = | Loadings from hauled waste, if not regulated through the local limits |
| $GA$ = | Growth allowance. |

From: EPA's Local Limits Development Guidance (July 2004)

# What Else Can I Do to Protect the POTW?

- Determine if the POTW can handle the additional hauled waste organic and hydraulic loading
  - Compare actual capacity vs. design capacity
  - Use a safety factor that considers variability of hauled waste concentrations
  - Review plant inhibition values
- Establish maximum volumes or loads per day
- Install storage tanks (hydraulic retention)

# Hauled Waste 101

That’s All we have time to go over!

# Contact Information


- Lynn Kurth

  Principle Environmental Scientist

  Tetra Tech, Inc.

  Lynn.Kurth@tetratech.com

- Byron Ross

  President

  Monitoring and Management Services, LLC

  Byron@mmsontheweb.com

- Jan Pickrel

  National Pretreatment Coordinator

  Office of Wastewater Management

  US EPA

  Water Permits Division

  Pickrel.Jan@epa.gov

# Participation Certificate

- If you would like to obtain participation certificates for multiple attendees, type the link below into your web browser
- You can type each of the attendees' names in and print the certificates
- http://www.epa.gov/npdes/webcasts/certificate/pretreatment_cert_102412.pdf