Practical Tips and Trends in RCRA Enforcement

Solid & Hazardous Waste Management, Disposal & Transportation

Workshop B

Trihydro

NAVISTAR

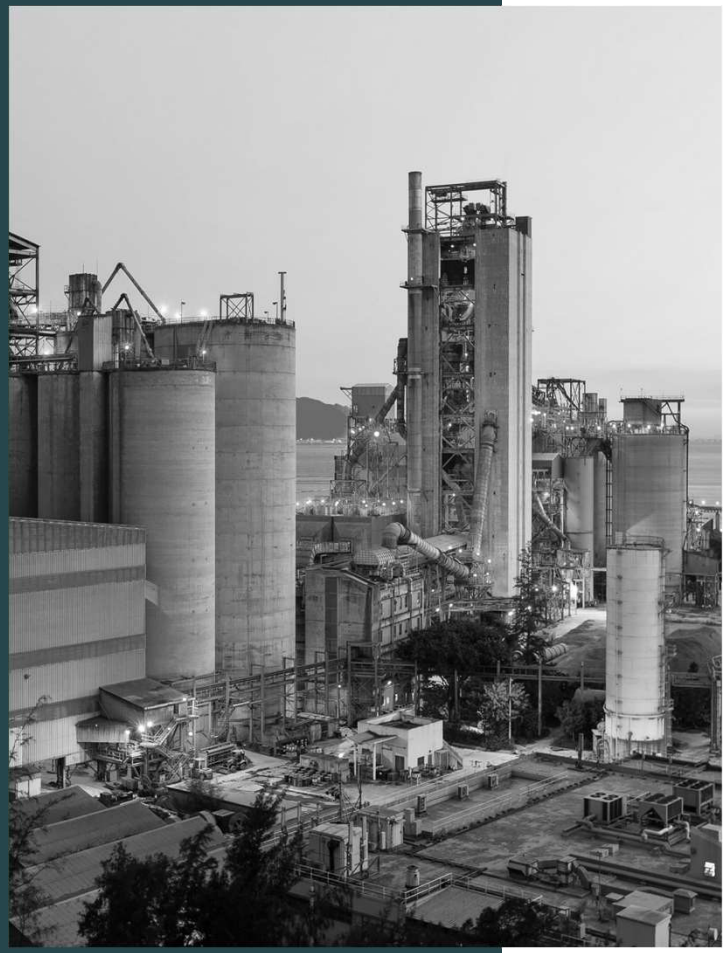
MEET YOUR PRESENTERS

RAJIB SINHA, PE

Senior Engineer/Regional Initiatives Manager
Trihydro Corporation
Cincinnati, Ohio

TIM MCDANIEL, CIH, CSP

Environmental, Health and Safety Manager
Navistar
Springfield Assembly Plant



COURSE OBJECTIVES

- Overview of Hazardous Waste Regulations
- Implementation at your facility
- What's New

Trihydro NAVISTAR

OVERVIEW OF HAZARDOUS WASTE REGULATIONS

MAJOR ENVIRONMENTAL STATUTES
LAWS BEHIND THE REGULATIONS

- Clean Air Act (**CAA**)
- Clean Water Act (**CWA**)
- Resource Conservation and Recovery Act (**RCRA**)
- Emergency Planning, and Community Right-to-Know Act (**EPCRA**)
- Superfund Amendments and Reauthorization Act (**SARA**)

FREQUENT

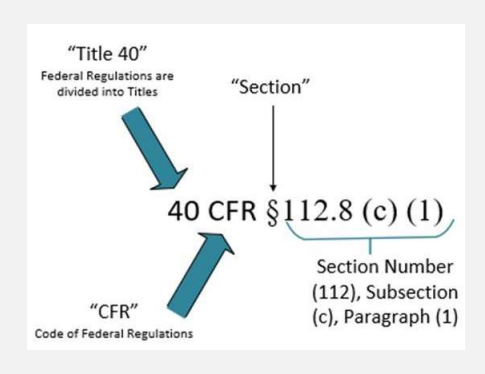
- Comprehensive Environmental Response, Compensation and Liability Act (**CERCLA**)
- Safe Drinking Water Act (**SDWA**)
- Toxic Substances Control Act (**TSCA**)
- Federal Insecticide, Fungicide, and Rodenticide Act (**FIFRA**)

LESS COMMON

CODE OF FEDERAL REGULATIONS (CFR) – TITLE 40

SUBCHAPTER I - SOLID WASTES (PARTS 239 - 282) BASED ON THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

General	Air Programs (CAA)	Water Programs (CWA)	Solid Waste (RCRA)	Pesticide, Noise, Radiation	Superfund, Emergency Planning, and Community Right-to-Know Programs	Toxics Substances Control Act (TSCA)
Parts 1 -29 General	Parts 50 -99	Parts 100 – 149	Parts 239 – 258 Municipal Wastes	Parts 150 – 189 - Pesticide Programs (FIFRA)	Part 300 - 350 CERCLA	Parts 700 - 799
Parts 33 -49 Grants; Federal Assistance	National Ambient Air Quality Standards (NAAQS)	Clean Water Act	Parts 260 – 272 Hazardous Wastes	Parts 190 – 197 - Radiation Protection Programs	Part 355 – 372 SARA and EPCRA	
Parts 600 -601 Fuel Economy	New Stationary Sources (NSPS)	Oil Pollution Prevention 40 CFR 112	Part 273 Universal Wastes	Parts 201 – 211 - Noise Abatement Programs	Part 312 Brownfields	
Parts 1027 – 1074 Air Pollution Controls	National Emissions Standards for Hazardous Air Pollutants (NESHAP)	Determination of Reportable Quantities For Hazardous Substances	Parts 279 Used Oil	Parts 230 – 238 - Ocean Dumping		
	State Operating Permit Programs	Secondary Treatment Regulation	Parts 280 -282 Underground Storage Tanks			
	Federal Operating Permit Programs	Safe Drinking Water Act National Primary and Secondary Drinking Water Regulations				
		Underground Injection Control (UIC) Program				
		Maximum Contaminant Level of drinking water				
		Parts 400 – 471 Effluent Limitation Guidelines				
		Part 501, 503 Sewage Sludge				



Trihydro NAVISTAR

HAZARDOUS WASTE REGULATIONS

RESOURCE
CONSERVATION
RECOVERY
ACT

- Generation
- Treatment
- Storage
- Disposal
- Transportation
- Recycling
- Reclamation
- Import/Export

COMPLYING WITH

HAZARDOUS WASTE REGULATIONS

IDENTIFY

Hazardous Waste Identification

COUNT

Generator Status:

- Large Quantity
- Small Quantity
- VSQG

NOTIFY

Recordkeeping and Reporting

MANAGE

Storage

TRANSPORT

Onsite and Offsite Disposal

RECYCLE TREAT DISPOSE

Manifest

Trihydro NAVISTAR

CLASSIFYING

HAZARDOUS WASTE REGULATIONS

STEP 1: Determine that a material is a waste.

STEP 2: Determine that the waste is a solid waste and is not excluded from the definitions of solid or hazardous waste.

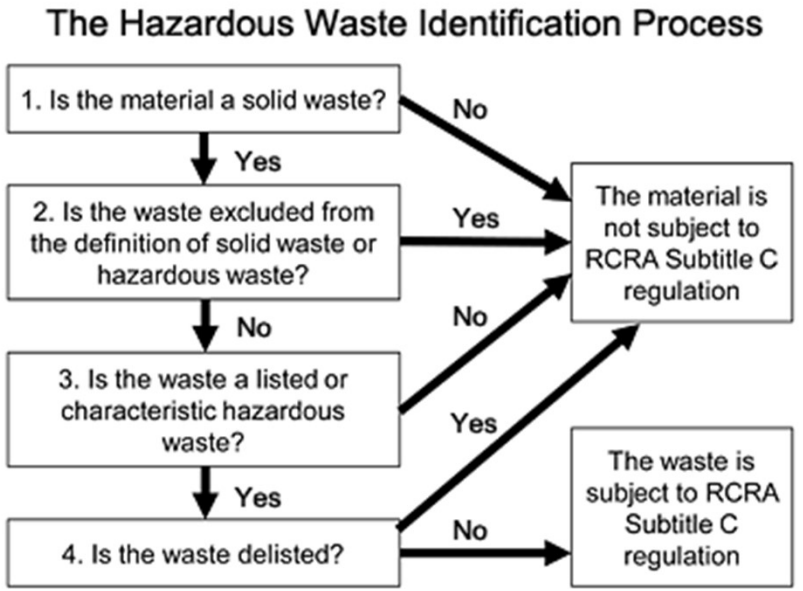
STEP 3: Determine if the waste is a hazardous waste.

STEP 4: Determine if the waste is a listed hazardous waste. Four lists:

F list P List
K list U List

STEP 5: Determine if the waste is a characteristic hazardous waste:

D List



Trihydro NAVISTAR

TYPES OF WASTE

Trihydro NAVISTAR

WHAT IS SOLID WASTE

- Garbage (e.g., milk cartons and coffee grounds)
- Refuse (e.g., metal scrap, wall board, and empty containers)
- Sludges from waste treatment plants, water supply treatment plants, or pollution control facilities (e.g., scrubber slags)
- Industrial wastes (e.g., manufacturing process wastewaters and non-wastewater sludges and solids)
- Other discarded materials, including solid, semisolid, liquid, or contained gaseous materials resulting from industrial, commercial, mining, agricultural, and community activities (e.g., boiler slags).

"Solid Waste" means any **garbage or refuse, sludge** from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other **discarded material**, resulting from industrial, commercial, mining, and agricultural operations, and from community activities.

WASTES THAT ARE NOT SOLID WASTE

- 25 Categories excluded [40 CFR 261.4(a)(1) – (27)]
- Examples:
  - Domestic Sewage
  - Nuclear Waste
  - Pulping Liquors
  - Spend Sulfuric Acid
  - Excluded Scrap Metal
  - Used Cathode Ray Tubes
  - Solvent-contaminated Rags
  - Material that is remanufactured

Domestic Sewage and Mixtures of Domestic Sewage
Point Source Discharge
Irrigation Return Flow
Radioactive Waste
In-Situ Mining
Pulping Liquors
Spent Sulfuric Acid
Reclamation in Enclosed Tanks
Spent Wood Preservatives
Coke By-Product Wastes
Splash Condenser Dross Residue
Hazardous Secondary Materials From the Petroleum Refining Industry
Excluded Scrap Metal
Shredded Circuit Boards
Pulping Condensates Derived from Kraft Mill Steam Strippers
Spent materials generated within the primary mineral processing industry from which minerals, acids, cyanide, water, or other values are recovered by mineral processing or by beneficiation
Petrochemical recovered oil from an associated organic chemical manufacturing facility
Spent caustic solutions from petroleum refining liquid treating processes used as a feedstock to produce cresylic or naphthenic acid
Hazardous secondary materials used to make zinc fertilizers
Zinc fertilizers made from hazardous wastes, or excluded hazardous secondary materials
Used cathode ray tubes (CRTs)
Hazardous secondary material generated and legitimately reclaimed within the United States or its territories and under the control of the generator
Hazardous secondary material that is generated and then transferred for the purpose of reclamation is not a solid waste
Solvent-contaminated wipes that are sent for cleaning and reuse are not solid wastes from the point of generation
Hazardous secondary material that is generated and then transferred to another person for the purpose of remanufacturing is not a solid waste

SOLID WASTES

EXCLUDED FROM HAZARDOUS WASTE REGULATIONS

- 17 Categories excluded
- [40 CFR 261.4(b)(1) – (17)]
- Examples:
  - Household hazardous wastes
  - Agricultural wastes
  - Cement Kiln Dust
  - Used Oil Filters
  - Landfill Leachate

SOLID WASTES WHICH ARE NOT HAZARDOUS WASTES
Household Hazardous Waste
Agricultural Waste
Mining Overburden
Fossil Fuel Combustion Waste (Bevill)
Oil, Gas, and Geothermal Wastes (Bentsen Amendment)
Trivalent Chromium Wastes
Mining and Mineral Processing Wastes (Bevill)
Cement Kiln Dust (Bevill)
Arsenical-Treated Wood
Petroleum Contaminated Media & Debris from Underground Storage Tanks
Injected Groundwater
Spent Chloroflurocarbon Refrigerants
Used Oil Filters
Used Oil Distillation Bottoms
Landfill Leachate or Gas Condensate Derived from Certain Listed Wastes
Project XL Pilot Project Exclusions
Project XL Pilot Project Exclusions

NON-SPECIFIC AND SPECIFIC SOURCES

THE F AND K LISTS

- The F list - wastes from certain common industrial and manufacturing processes. [40 CFR §261.31].
  - E.g., - Spent solvent wastes (waste codes F001 through F005)
- The K list - wastes from 13 different industrial or manufacturing categories on the list. [40 CFR §261.32].
  - E.g., wood preservation, organics chemicals manufacturing, inorganic pigment manufacturing, etc

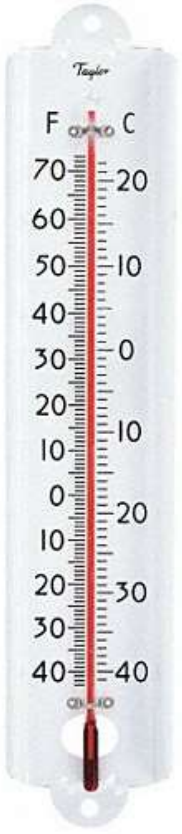
DISCARDED COMMERCIAL CHEMICAL PRODUCTS

THE P AND U LISTS

- P – acute (205 chemicals)
- U – Toxic (411 chemicals)

[40 CFR 261.33]

- Commercial Products - Pure/Technical Grade
- Formulations - Sole Active Ingredient
- “Unused” - Not Manufactured Article



FOUR PROPERTIES

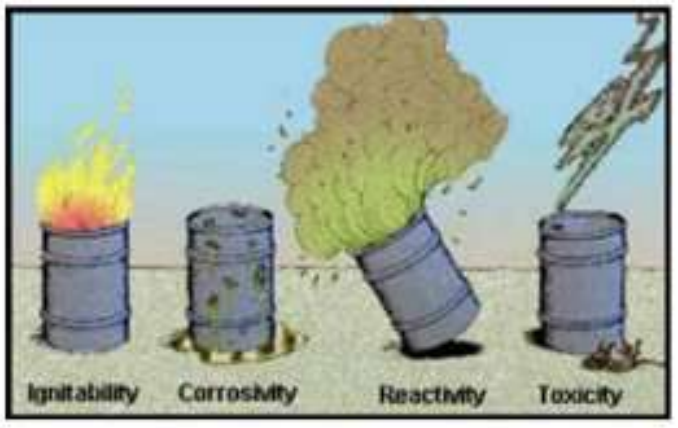
CHARACTERISTIC HAZARDOUS WASTES

IGNITABLE (D001)

- Liquid with Flash Point < 140°F
- Oxidizer
- Ignitable Compressed Gas
- Non-liquid that Causes Fires Through:
  - Friction
  - Moisture Absorption
  - Spontaneous Chemical Changes

CORROSIVE (D002)

- Aqueous and has a pH of ≤ 2.0 or ≥ 12.5
- Liquid and Corrodes Steel ≥ ¼ Inch/Year



FOUR PROPERTIES

CHARACTERISTIC HAZARDOUS WASTES

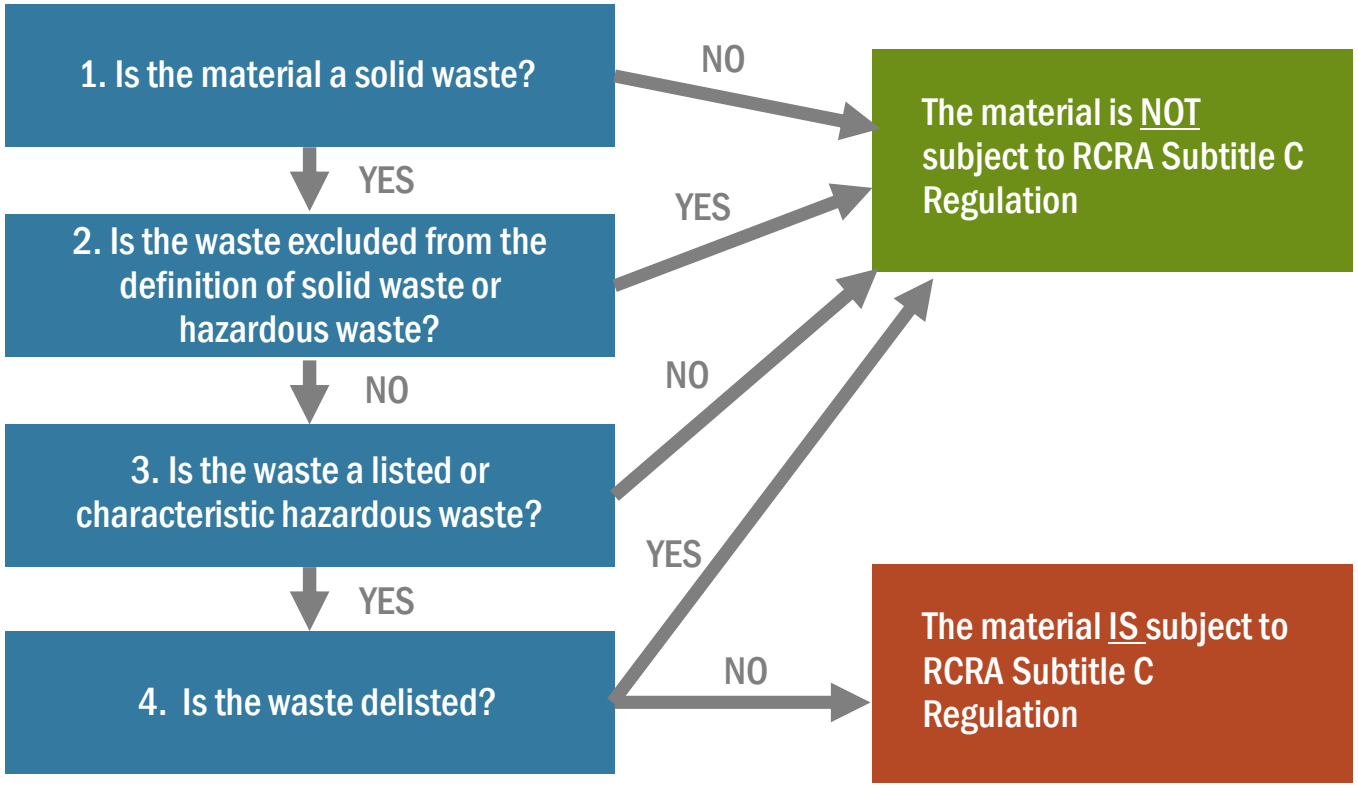
REACTIVE (D003)

- Normally Unstable
  - Explosives/Shock Sensitive
- Reacts Violently with Water
- Forms Potentially Explosive Mixtures with Water
- Generates Toxic Gases When Mixed with Water
- Reactive Cyanides + Sulfides
- Capable of Detonation if:
  - Subject to Strong Initiating Source
  - Heated Under Confinement
- Defined as Explosive

TOXIC (D004-D043)

- 39 Specific Chemicals
  - Solvent/Organic Chemicals
  - Heavy Metals
  - Pesticides
- Failed TCLP Concentrations Test
  - Simulates Migration of Chemicals in a Landfill that Could Impact Groundwater

THE HAZARDOUS WASTE IDENTIFICATION PROCESS



IMPLEMENTATION AT YOUR FACILITY

TOP WASTE VIOLATIONS

1. Waste Identification
2. Inadequate Aisle Space
3. Incorrect generator status
4. Container Management – incompatibles and open container Inspections
5. Emergency Preparedness and Contingency Planning
6. Permitting
7. Container Marking, Labeling, and Dating
8. Personnel Training
9. Universal Waste Management
10. Transporter Requirements

Trihydro NAVISTAR

IDENTIFYING WASTES AT YOUR FACILITY

- Purchasing records and SDSs
  - Identify what is being purchased and be familiar with the chemical components and composition
- Facility walk-through
  - Observe discarded material
- Sampling and analysis of unknown waste streams
  - E.g., paint booth filters, oil/water sludge
- Review waste profiles for past shipped wastes

Trihydro NAVISTAR

LABELING REQUIREMENTS

- Applies to all SQGs, LQGs, Transporters
- Label must indicate
  - The words “Hazardous Waste”
  - Identification of hazards - NEW
    - Can use any of several established methods to indicate hazards (DOT, OSHA, NFPA, pictogram, RCRA characteristic…)
  - All waste codes (prior to shipment) - NEW
    - May use recognized electronic option (e.g., bar codes)
    - Exception for lab packs
  - Accumulation start date
- For vessels that can’t be labeled (some tanks, drip pads, containment buildings, …)
  - Info can be in records or logs kept near to location of the vessel

UNIVERSAL WASTES

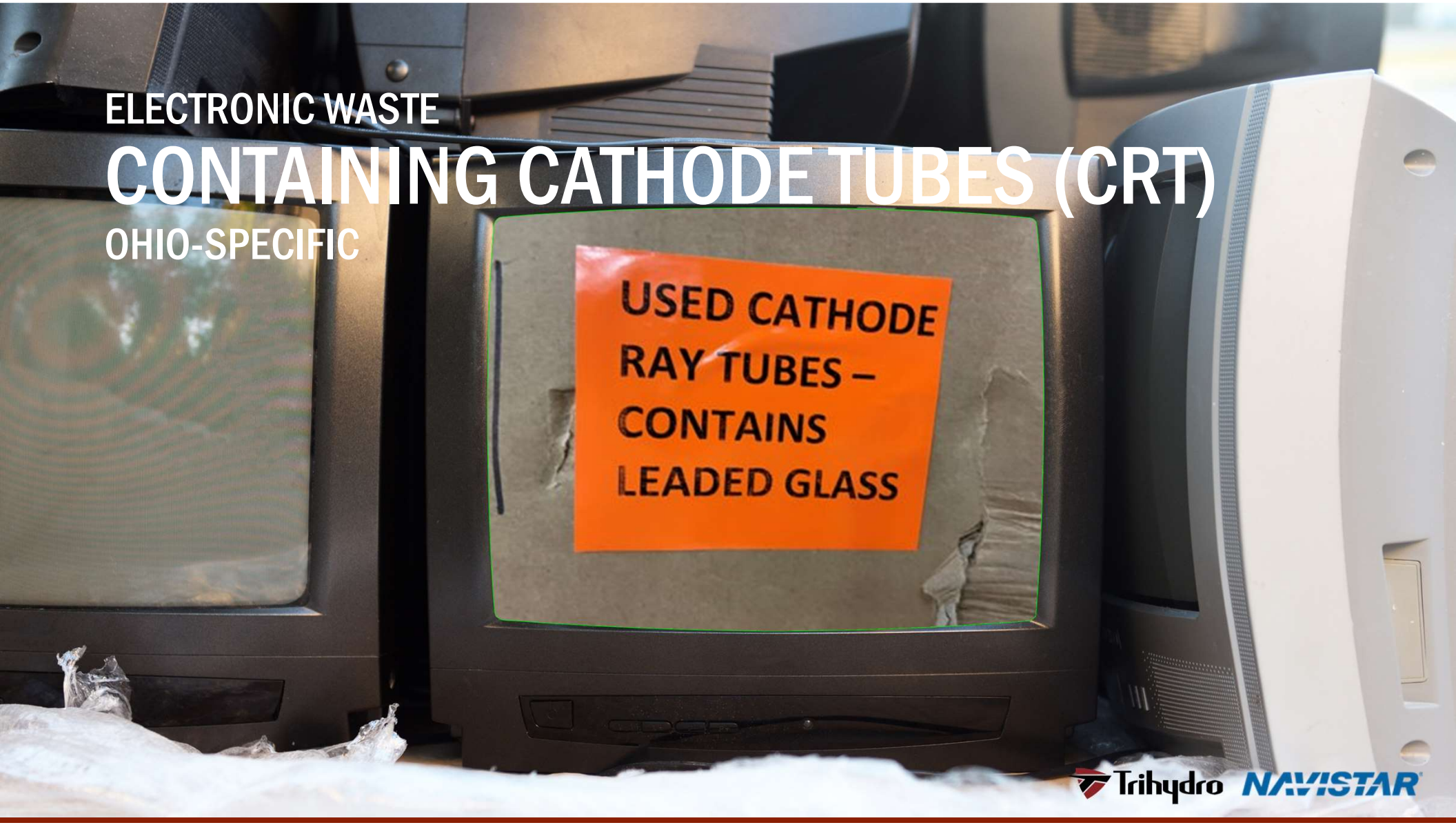
REGULATIONS

- Typically Hazardous Wastes
- Relaxed Regulations if Recycled
  - Fluorescent Lamps (Crushing = Treatment H.W.)
  - Lead-Acid/Ni-Cad Batteries
  - Mercury-Containing Equipment
  - Recalled Pesticides
  - Non-empty Aerosol Cans
  - Antifreeze
  - Paint-related waste
- USEPA added aerosol cans (effective February 20, 2020)
- Dated + Marked
  - "Universal Waste" or "Used" or "Waste" + Type
- Managed Prevent Leaks = Closed Box
- 1 Year Storage
- Training = Handling + Spill Response



ELECTRONIC WASTE

Trihydro NAVISTAR



ELECTRONIC WASTE

CONTAINING CATHODE TUBES (CRT)

OHIO-SPECIFIC

Trihydro NAVISTAR

UNIVERSAL WASTE

LAMPS

UNIVERSAL WASTE

LAMPS CABINET

IN OHIO

UNIVERSAL WASTE
BATTERIES

OHIO-SPECIFIC

UNIVERSAL WASTE REGULATIONS

(O.A.C. 3745-273-89)

- Ohio-specific universal wastes, which include the following:
  - Aerosol containers [3745-273-89(A)]
  - Antifreeze [3745-273-89(B)]
  - Paint and paint-related waste [3745-273-89(C)]

Trihydro NAVISTAR

OHIO-SPECIFIC

UNIVERSAL WASTE PAINT

- Ohio give examples for labels
  - UW paint
  - Paint waste
  - Recyclable paint
  - Paint rags
  - Used paint stripper
  - Used paint blast

Trihydro NAVISTAR

SATELLITE ACCUMULATION PROVISIONS

- New section: 40 CFR Specific clarification that hazardous wastes in Satellite Accumulation Areas (SAA) cannot be mixed or placed in a container with other incompatible hazardous wastes
- Containers in SAA are allowed to remain open under limited circumstances
  - When necessary for safe operations (limited exception)
- Clarifies that the three-day requirement to move containers from SAA to central accumulation area means three calendar days
- For acute hazardous waste, can consider max weight or volume
- Marking and labeling consistent with central accumulation areas

SATELLITE ACCUMULATION AREA (SAA)

INDICATE HAZARDS ON CONTAINER

Trihydro NAVISTAR

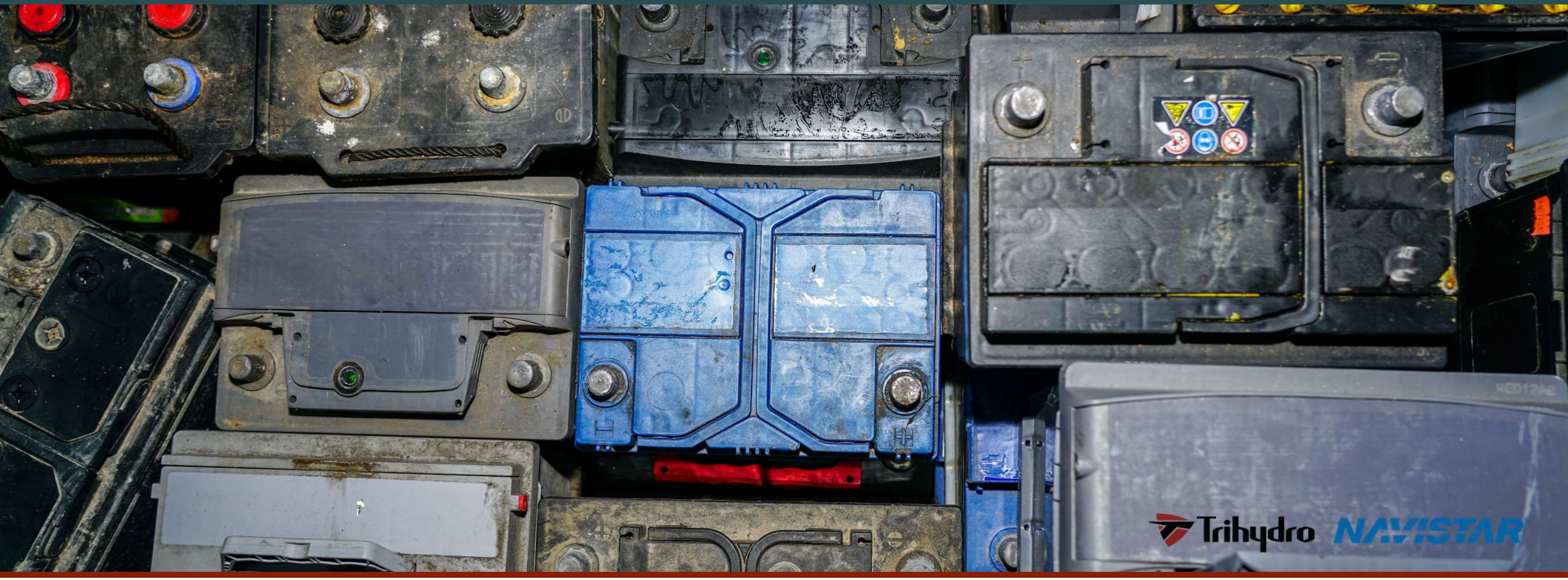
UNIVERSAL WASTE

AEROSOL CANS

OHIO-SPECIFIC

LEAD ACID

BATTERIES



USED OIL REGULATIONS

- Used Oil (Lubrication)
  - Refined from Crude/Synthetic
  - Used or Contaminated from Use
- < 1,000 ppm Halogens
- No Hazardous Waste Mixtures
- Mark Containers/Tanks “Used Oil”
- Managed In Drums/Tanks
  - No Severe Rust/Structural Defects
  - No Visible Leaks (Lids Closed)
  - No Exposure to Rainwater

MUST BE RECYCLED

Trihydro NAVISTAR

USED OIL FILTER

WITH HOLES, SET IN FUNNEL TO TRAIN

LAMP BALLAST

PCBS BEFORE JULY 1, 1978

HOW TO IDENTIFY

FLUORESCENT LIGHT BALLAST (FLB) WITH PCBS

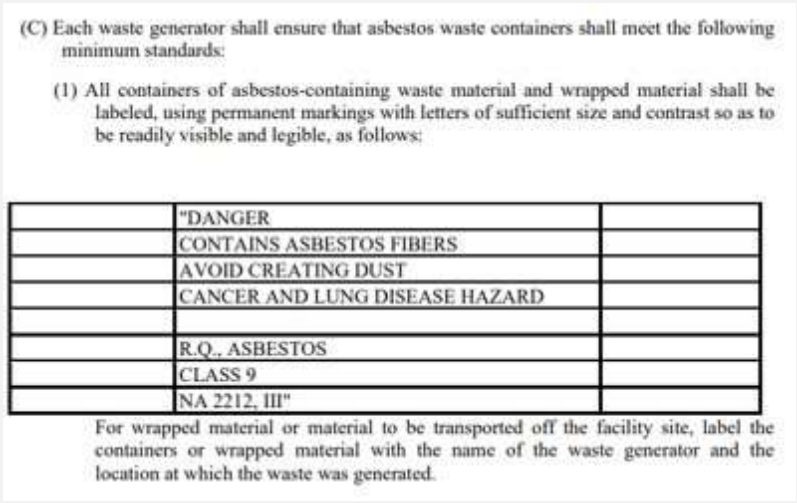
- FLBs that contain PCBs are regulated under TSCA.
- Any FLBs manufactured before July 2, 1979, may contain PCBs.
- Any FLBs marked with the statement "This equipment contains PCB Capacitor(s)," in accordance with 40 Code of Federal Regulations (CFR) § 761.40(d), contain PCBs.
- In accordance with 40 CFR § 761.2(a)(4): Any person must assume that a capacitor manufactured prior to July 2, 1979, whose PCB concentration is not established, or whose date of manufacture is unknown, contains greater than or equal to (≥) 500 parts per million (ppm) PCBs.
- Any person may assume that a capacitor marked at the time of manufacture with the statement "No PCBs" in accordance with 40 CFR § 761.40(g) does not contain PCBs. 40 CFR § 761.40(g) required non-PCB ballasts manufactured from July 1, 1978, to July 1, 1998, to be labeled with the statement "No PCBs."
- If an FLB was manufactured prior to July 2, 1979, the potting material may be sampled and analyzed for PCBs or assumed to contain PCBs. The potting material in PCB FLBs manufactured prior to July 2, 1979, frequently contains concentrations of PCBs over 50 ppm. EPA generally does not recommend opening the FLBs just to sample the potting material due to the risk of PCB exposure. The disposal requirements are different for PCBs in the potting material than for the PCB small capacitors.

Trihydro NAVISTAR

OHIO-SPECIFIC

ASBESTOS

- 3745-20-05 Standard for asbestos waste handling. (note this is in the Air rules, not waste rules)
- (A) All asbestos-containing waste material shall be deposited as soon as is practical by the waste generator at one of the following: (1) A waste disposal site…



(C) Each waste generator shall ensure that asbestos waste containers shall meet the following minimum standards:

(1) All containers of asbestos-containing waste material and wrapped material shall be labeled, using permanent markings with letters of sufficient size and contrast so as to be readily visible and legible, as follows:

	"DANGER	
	CONTAINS ASBESTOS FIBERS	
	AVOID CREATING DUST	
	CANCER AND LUNG DISEASE HAZARD	
	R.Q., ASBESTOS	
	CLASS 9	
	NA 2212, III"	

For wrapped material or material to be transported off the facility site, label the containers or wrapped material with the name of the waste generator and the location at which the waste was generated.

AIR BAGS AND SEAT BELT PRETENSIONERS

INFECTIOUS WASTES

SHARPS AND BODILY FLUIDS

SOLVENT CONTAMINATED WIPES

EXCLUDED

Trihydro NAVISTAR

HAZARDOUS WASTE

NON-EMPTY CONTAINERS OF IGNITABLE MATERIAL

OHIO-SPECIFIC
RADIOACTIVE MATERIAL

- Keep in mind, a radioactive material falls under the Ohio Department of Health (ODH) waste jurisdiction as soon as it is decided the radioactive material is no longer wanted.
- At that point, liquid waste in any container must be labeled as radioactive waste and dated.
- Mining, processing, industrial, medical sources.

Trihydro NAVISTAR

WASTE MANAGEMENT

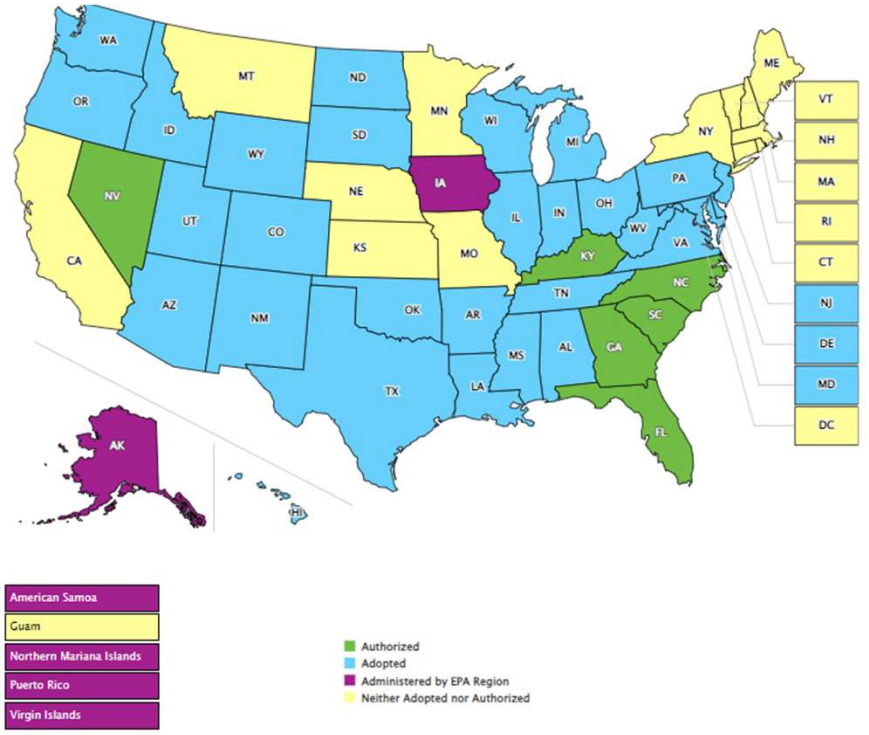
WASTE	START OR END / FILLED DATE	MAXIMUM TIME (DAYS)	WASTE LABELING REQUIREMENTS	INSPECTIONS
Hazardous Waste LQG	55 gal or less – Satellite Container End, > 55 gal container or tank as soon as you exceed 55 gal	90	Yes	Weekly, storage accumulation areas
Hazardous Waste SQG	55 gal or less – Satellite Container End, > 55 gal container or tank as soon as you exceed 55 gal	180	Yes	Weekly, storage accumulation areas
Hazardous Waste VSQG				
PCB ballasts	Start	180	Yes	Monthly, storage accumulation areas
Universal Wastes (except aerosol cans)	Start	365	Yes	
Universal Wastes only aerosol cans Ohio	End	365	Yes	
Excluded Solvent contaminated wipes	Start	180	Yes	
Asbestos	End	As soon as practicable	Yes	
Lead-acid batteries	N/A	N/A	No	
Electronic wastes	N/A	N/A	Yes, Ohio only? for CRTs	
Infectious waste	N/A	N/A	Yes	
Used Oil	N/A	N/A	Yes	
Tires	N/A	N/A	No	

SECONDARY CONTAINMENT

Trihydro NAVISTAR

WHAT'S NEW

Major Rule Change – 2016
Generator Improvement Rules



Last updated on February 2, 2022

Trihydro NAVISTAR

EPISODIC GENERATION

- Benefits facilities with occasional temporary surge in hazardous waste generation
- Allows generator to retain existing (VSQG, SQG) category during episodic generation, provided they comply with a streamlined set of requirements
  - Allows one planned episodic event per year
  - Can petition for second (unplanned) event
  - Must notify EPA at least 30 days in advance (or within 72 hours for unplanned episode)
  - Must complete the episodic event within 60 days (all waste shipped offsite)

Trihydro NAVISTAR

CONTINUED

EPISODIC GENERATION

- VSQG streamlined requirements: comply with SQG waste management provisions and maintain records
  - Obtain EPA ID Number
  - Use hazardous waste manifest and transporter to ship to RCRA TSDF or recycler
  - Manage in a way that minimizes potential for accident or release
  - Label episodic waste containers
    - "Episodic Hazardous Waste"
    - Identify hazards of contents
  - Identify an emergency coordinator at the generator facility
  - Maintain records of episodic event

CONTINUED

EPISODIC GENERATION

- SQG requirements:
  - Comply with existing SQG regulations
  - Use hazardous waste manifest and transporter to ship to RCRA TSDF or recycler
  - Label episodic waste containers
    - "Episodic Hazardous Waste"
    - Identify hazards of contents
  - Maintain records of episodic event
- All conditions must be met to retain the episodic generation conditional management benefit

EMERGENCY PREPAREDNESS

- LQG Contingency Plans must have a “quick reference guide” with most critical information
- Contents of “quick reference guide”
  - Types and amounts of hazardous waste
  - Maps of site and surrounding area
  - Location of water supply
  - Identification of notification system (phones, PA, etc.)
  - Emergency contact(s)
- Who must submit
  - Any new LQG with their first Contingency Plan
  - Any existing LQG, at the first revision of the Contingency Plan following effective date of the regulation

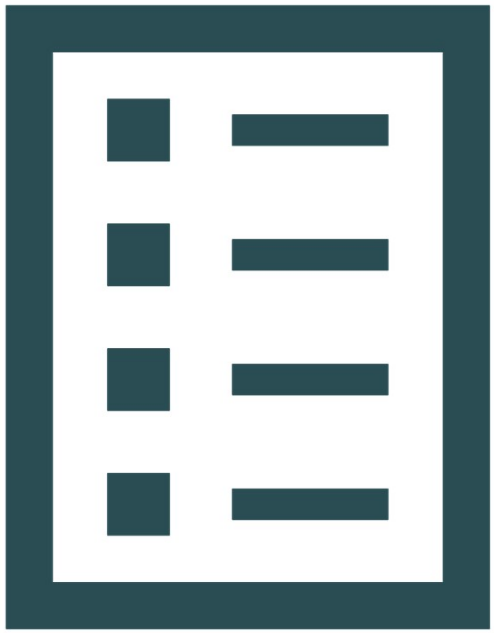
CONTINUED

EMERGENCY PREPAREDNESS

- LQG Contingency Plan Emergency Coordinator information
  - No longer required to include certain personal contact information
  - Where 24/7 Emergency Coordinator is available on-site, may list the position(s) rather than employee names
- Clarifies where and what emergency equipment is required
  - Must address all areas where hazardous waste is generated and/or managed
- May use CBT/electronic training for personnel training
- Document that emergency arrangements have been attempted with local authorities
  - Not required to have something back from local authorities, just document that you attempted to make arrangements
  - Waiver option for facilities with on-site response capabilities

NOTIFICATION/RECORDKEEPING

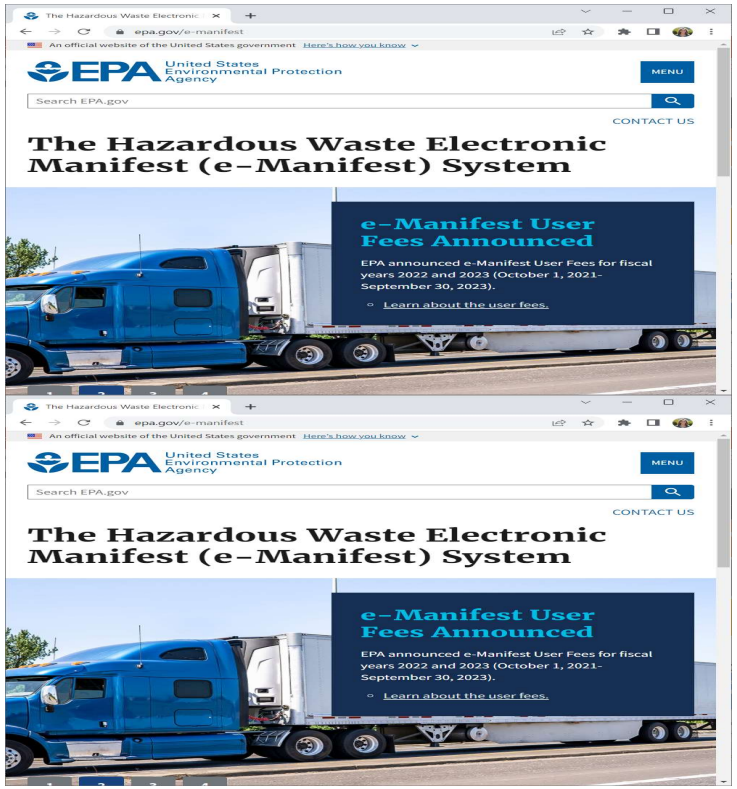
- SQG required to re-notify every 4 years
  - Electronic option available
  - First report not due until September 1, 2021
- LQG Biennial Report rules updated to be consistent with current guidance
  - LQGs must report all hazardous waste generated in a calendar year, even when it is managed the next year
  - LQGs must report for all months in the year, even if SQG for some of those months
  - LQGs must report hazardous waste recycled onsite
  - Recycling facilities must report wastes that are not stored prior to recycling



Trihydro NAVISTAR

E-MANIFESTS

- EPA launched e-Manifest system on June 30, 2018
- National electronic manifest tracking system
- Receiving charged fees to cover cost to develop/operate
  - $25 - Mailed in paper manifest
  - $20 – Scanned image upload
  - $14 – Manifest data plus image upload
  - $8 – Electronic manifest (fully electronic & hybrid)
- Generators need to register for e-Manifest if they wish to sign manifests electronically, view records or submit corrections



PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

- Per- and polyfluoroalkyl substances (PFAS)
  - Synthetic, environmentally persistent (firefighting foam, nonstick cookware, textiles, etc.)
  - 1/15/2020 – Environmental groups petitioned EPA to regulate certain PFAS chemicals as hazardous waste
  - EPA has added to list of chemicals that require TRI reporting
    - Must track in 2020 and report in 2021

Trihydro NAVISTAR

TECHNOLOGICALLY ENHANCED NATURALLY OCCURRING RADIOACTIVE MATERIALS (TNORM)

- "Concentrated" by having been processed
- Mining wastes, coal combustion residuals, wastewater treatment residuals
- Waste receiving facilities are screening in-coming containers

WHAT CAN YOU DO?

- Start Reading the Regulations
  - Everything is Not All in One Place
- Call the Agency & Ask For Help
- Contact a Regulatory Expert
  - Internet Chat Groups
  - Agency Web Sites (Guidance Documents)
  - Trade Groups
  - Environmental Consultant
  - Knows Your Industry Specifically
    - Broad Based Regulatory Experience
    - Assessment vs. Full Blown Audit

YOUR QUESTIONS

RAJIB SINHA, PE
Senior Engineer/Regional Initiatives Manager
Trihydro Corporation
Cincinnati, Ohio

TIM MCDANIEL, CIH, CSP
Environmental, Health and Safety Manager
Navistar
Springfield Assembly Plant

Biographical Information

Tim W. McDaniel, CIH, CSP, EH&S Manager, Navistar Inc.
6125 Urbana Rd., PO Box 600, Springfield, OH 45502-9279
tim.mcdaniel@navistar.com

Tim McDaniel is the Environmental, Health and Safety Manager at Navistar's Springfield Assembly Plant. In this capacity he manages all environmental, and sustainability issues. He has been with Navistar at the Springfield operations since 1989 and has worked in the EHS field for 38 years. Tim has worked to advocate smart changes in environmental regulations that provide manufacturing flexibility without compromising sound environmental principles.

Tim serves on the Clark County Solid Waste Management District Policy Committee and Local Emergency Planning Committee. He is the past chairman of the Truck Manufacturers' Association Environmental Management Committee and the Ohio Manufacturers' Association Environmental Committee and was a board member of the Great Lakes Regional Pollution Prevention Roundtable.

Tim received his master's degrees in environmental science and in biology from Indiana University and a bachelor's degree in environmental resources from Eastern Kentucky University.

Tim's favorite hobby is running and has two marathons planned for 2022 – Boston and Berlin.

Rajib Sinha, P.E., Senior Engineer/Project Manager
Trihydro Corporation, 2702 Kemper Road, Cincinnati, OH 45241
513.429.7456 Mobile: (513) 604-8940 RSinha@Trihydro.com

Mr. Sinha is a Chemical Engineer and Project Manager with over 30 years of experience in Environmental Consulting and Engineering. Mr. Sinha has provided a wide array of services to industry for compliance with various laws. For eight years, Mr. Sinha led a team of engineers, geologists, scientists, and administrative staff that provided environmental compliance, safety, and Industrial Hygiene services to commercial facilities and governmental clients. This includes projects conducted under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); Resource Conservation and Recovery Act (RCRA); Superfund Amendments and Reauthorization Act (SARA); Bureau of Underground Storage Tank Regulations (BUSTR). Mr. Sinha has designed and implemented several systems for treating contaminated groundwater and industrial wastewater and assisted several clients in complying with provisions of the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act (CWA). He has coordinated his work activity with various disciplines and clients.

Mr. Sinha has also served as the Project Leader for research projects at the U.S. Environmental Protection Agency (USEPA) Test & Evaluation (T&E) Facility in Cincinnati, OH. He directs research related to providing safe drinking water with a particular emphasis on systems serving small communities without access to public drinking water systems. Other current projects include development of innovative retrofit devices for stormwater management and watershed management research. Mr. Sinha also develops and manages third-party commercial projects at the T&E Facility. Mr. Sinha has made numerous presentations in conferences as well as published papers in peer-reviewed journals.

Mr. Sinha holds a Bachelor of Technology in Chemical Engineering (Jadavpur University), Master of Science in Chemical Engineering (University of Southern California), and a Master of Business Administration (University of Cincinnati).