United States
Environmental Protection
Agency

Office of Information
Analysis and Access

March 2000

EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT SECTION 313

EPCRA/TRI TRAINING MATERIALS:

Spring 2000

ONE DAY WORKSHOP

TRAINING DISCLAIMER

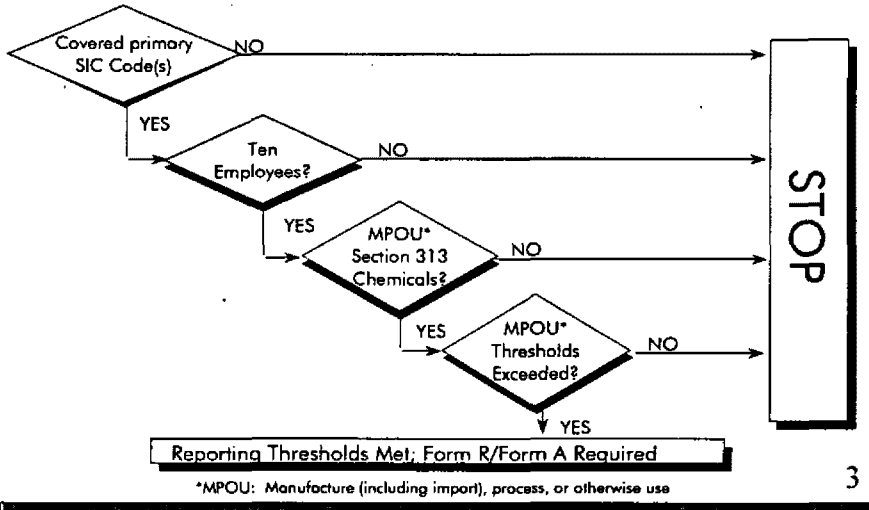
This document was developed for the sole purpose of helping potential reporters understand and comply with the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA). Nothing in this document is intended to independently alter, supplement, or revoke the statutory and/or regulatory requirements imposed by EPCRA section 313 and the applicable regulations at 40 CFR 372, et seq. Although these training materials provide an overview of the section 313 reporting requirements, facilities should consult the statute and regulations when developing threshold determinations and calculating releases and other waste management amounts. Facilities should be aware that EPA also provides guidance documents containing both sector specific guidance and guidance on specific elements of the EPCRA section 313 program. Covered facilities are encouraged to consult these guidance documents for additional assistance. Facilities may also receive assistance by contacting the EPCRA Hotline at (800) 424-9346. This document was prepared specifically for Reporting Year 1999, for reports due on July 1, 2000. Facilities should be aware that EPA may promulgate regulatory changes to the EPCRA section 313 program that may alter reporting requirements for future reporting years.

TOXICS RELEASE INVENTORY PROGRAM

WHO MUST REPORT?

- Facilities (Private- and Public-sector)
  - In covered primary SIC code(s); and
  - With 10 or more full time employees (equivalent of 20,000 hours per year); and
  - That exceed manufacture, or process, or otherwise use thresholds for each Section 313 chemical

TRI REPORTING PROCESS



COVERED SIC CODES

Industrial Sector	Primary SIC code
Manufacturing	20-39
Metal mining	10 (except 1011, 1081, and 1094)
Coal mining	12 (except 1241)
Electrical utilities	4911, 4931, and 4939, limited to facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce
Treatment; Storage, and Disposal facilities	4953, limited to RCRA Subtitle C permitted or interim status facilities
Solvent recovery services	7389, limited to facilities primarily engaged in solvent recovery services on a contract or fee basis
Chemical distributors	5169
Petroleum bulk terminals	5171

FEDERAL FACILITIES

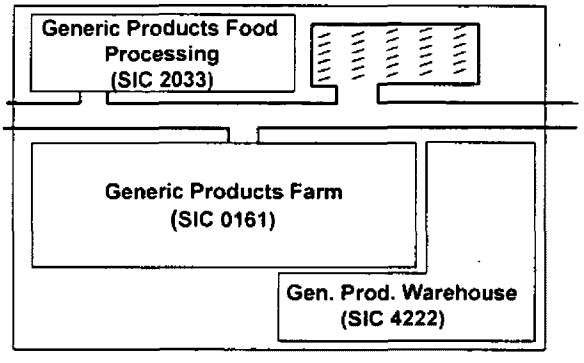
- Federal facilities (covered by Executive Order 12856)
  - Owned or operated by Executive Branch agencies
    - » No restrictions based on SIC code
    - » Includes laboratories, prisons, parks, hospitals
  - With 10 or more full-time employees (equivalent of 20,000 hours per year)
  - That exceed manufacture, or process, or otherwise use thresholds
  - Agency responsible for reporting on activities at Federal facilities that are conducted by, for, or in support of the agency

DEFINITION OF "FACILITY"

- "Facility - all buildings, equipment, structures, and other stationary items which are located on a single site or contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with, such person)." (EPCRA §329(4))
- Establishment - an unique and separate economic unit of a "facility"
- Auxiliary facility - primarily supports another establishment's activities

MULTI-ESTABLISHMENT FACILITY

Three separate establishments located on contiguous/adjacent property owned by same person(s), is one facility under EPCRA



7

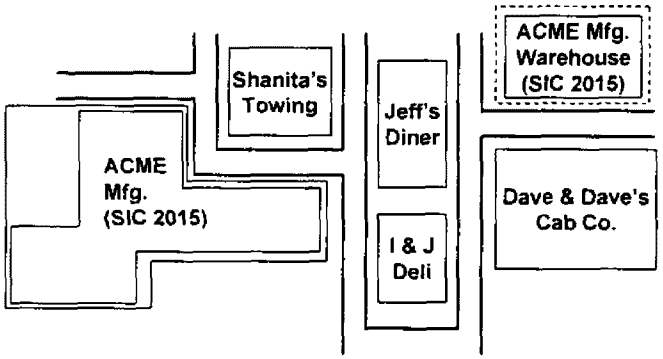
AUXILIARY FACILITY

- **Non-contiguous and non-adjacent to a covered establishment**
- **Primary function is to support a covered establishment's activities (e.g., warehouses, laboratories)**
- **Assumes SIC code of covered establishment for reporting purposes**
- **Employee and chemical activity threshold determinations are separate!**

8

AUXILIARY FACILITY

ACME Mfg. Facilities
(Warehouse is auxiliary facility of ACME Mfg.)



EMPLOYEE THRESHOLD

- 10 full-time employee (20,000 hours) threshold
  - Worked at or directly for facility
  - Includes operational staff, administrative staff, contractors, dedicated sales staff, company drivers, off-site direct corporate support
  - Does NOT include contract drivers or janitorial contractors
- Determinations based on available time management systems/data

THRESHOLDS TRIGGERING SECTION 313 REPORTING

- A facility meeting all criteria must file a TRI report for a Section 313 chemical if the facility:
  - Manufactured (including imported) more than 25,000 pounds per year, or
  - Processed more than 25,000 pounds per year, or
  - Otherwise used more than 10,000 pounds per year
- Activity thresholds are mutually exclusive
- Threshold calculations are based on cumulative quantities per Section 313 chemical over the reporting year

11

CATEGORIES OF MANUFACTURING ACTIVITIES

- Manufacturing - generating a Section 313 chemical
  - Intentionally producing chemicals for:
    - » Sale
    - » Distribution
    - » On-site use or processing (e.g., intermediates)
  - Coincidentally producing chemicals as impurities or byproducts:
    - » At any point at the facility, including waste treatment and fuel combustion
  - Importing
    - » "Cause" to be imported

12

CATEGORIES OF PROCESSING ACTIVITIES

- Processing - preparation of a Section 313 chemical for further distribution in commerce
  - Using as a reactant to manufacture another substance or product
  - Adding as a formulation component
  - Incorporating as an article component
  - Repackaging for distribution
    - » Including quantities sent off-site for recycling

13

OTHERWISE USE

- Otherwise using - includes most activities that are <u>not</u> manufacturing or processing

  <u>Examples</u>
  - Chemical processing aid (e.g., solvents)
  - Manufacturing aid (e.g., lubricants, refrigerants)
  - Ancillary activities (e.g., chemicals used to remediate wastes)

14

OTHERWISE USE (CONTINUED)

- Otherwise use of a Section 313 chemical also includes disposal, stabilization (without subsequent distribution in commerce), or treatment for destruction if:
  - Section 313 chemical was received from off-site for the purposes of further waste management, or
  - Section 313 chemical was manufactured as a result of waste management activities on materials received from off-site for the purpose of further waste management
- Waste management activities include recycling, combustion for energy recovery, treatment for destruction, waste stabilization and release (including disposal)

CALCULATING ACTIVITY THRESHOLDS

- Calculate total amount of Section 313 chemical to a threshold activity
  - Example:
    - » A plant uses MEK to manufacture liquid industrial adhesive for distribution in commerce. The plant adds 27,000 lbs. of MEK to the liquid adhesive-making operation during the reporting year, but 3,000 lbs. are volatilized during the operation
    - » 27,000 lbs. of MEK is processed, reporting required

CALCULATING ACTIVITY THRESHOLDS

- Activities that do NOT constitute an activity threshold
  - Storage
  - Remediation of on-site contamination
  - Re-labeling without repackaging

SECTION 313 CHEMICAL LIST

SECTION 313 CHEMICALS AND CHEMICAL CATEGORIES

- Dynamic, evolving list
  - Additions
  - Deletions
  - Modifications
- Petition process to add or delete chemicals or forms of chemicals

CHEMICAL LIST CHANGES

- Proposed for deletion
  - Phosphoric acid
  - Chromite ore mined in the Transvaal Region of South Africa and the unreacted ore component of the chromite ore processing residue (COPR)
- Deletion proposals denied
  - MEK
  - MIBK
  - Acetonitrile

3

EPCRA SECTION 313 CHEMICAL QUALIFIERS

- Qualifiers - Listed chemicals with parenthetic qualifiers subject to TRI reporting only if manufactured, processed, or otherwise used in specified form. Below are some examples:

CHEMICAL	CAS#	QUALIFIER
Aluminum	7429-90-5	Fume or dust
Zinc	7440-66-6	Fume or dust
Aluminum oxide	1344-28-1	Fibrous forms
Asbestos	1332-21-4	Friable forms
Hydrochloric acid	7647-01-0	Acid aerosols
Sulfuric acid	7664-93-9	Acid aerosols

- Not reportable unless present in the specified form

4

METAL COMPOUND CATEGORIES

- Consider the entire weight of the compounds in the category when determining thresholds
- Include only the weight of the parent metal of the category (e.g., copper for copper compounds) when calculating releases and other waste management quantities

DETERMINING THRESHOLDS FOR METAL COMPOUNDS

Multiple Compounds Within A Mixture Example

A facility processes 200,000 pounds of a mixture containing 10% zinc chromate and 15% chromium dioxide by weight

- Quantity toward chromium compounds threshold

  (10% + 15%) x (200,000) = 50,000 pounds

- Quantity toward zinc compounds threshold

  (10%) x (200,000) = 20,000 pounds

- 25,000-pound processing threshold applies; chromium compounds are reportable and zinc compounds are not

NITRATE COMPOUNDS

- Water dissociable nitrate compounds category
  - For threshold determinations, use the weight of the nitrate compound, but use only the weight of the nitrate ion portion when calculating releases and other waste management quantities
  - Nitrate compounds are produced when nitric acid is neutralized
  - Includes compounds like sodium nitrate, silver nitrate, and ammonium nitrate

NON-METAL COMPOUND CATEGORIES

- Consider the entire weight of the compounds in these categories when determining thresholds
- Include the entire weight of the compounds in the category when calculating releases and other waste management quantities for all compounds in these categories

XYLENE AND XYLENE ISOMERS

- If data do not specify o-, m-, or p- isomers of xylene, calculate thresholds, release and other waste management quantities based on "xylene (mixed isomers)"
- If data specifies o-xylene, m-xylene, or p-xylene individually, calculate thresholds, release and other waste management quantities based on the individual isomers
  - If thresholds are exceeded for more than one isomer, releases and other waste management quantities can be consolidated in one report as "xylene (mixed isomers)"
- Same logic applies to cresol, toluene diisocyanates

ACID AEROSOLS THRESHOLD DETERMINATIONS

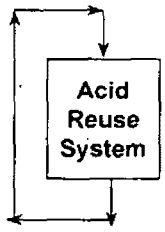
- Sulfuric Acid Aerosols Formation in Stacks from Combustion Processes
  - Sulfuric acid aerosols are formed in flue gas during the combustion of fuel oil, coal, and other sulfur-containing fuels
  - Water and sulfur trioxide, products of fuel combustion, react quickly to form sulfuric acid
  - See *Guidance for Reporting Sulfuric Acid* (March 1998) for specific calculations

ACID AEROSOLS THRESHOLD DETERMINATIONS

- Acid Reuse Systems (Sulfuric and hydrochloric acid only)
  - To calculate the amounts manufactured and otherwise used the facility may apply the total volume of acid in the system acid only once toward the threshold and the amount of virgin added to the system during the RY.

Total System Volume + Total Virgin Acid Added

= Amount Acid Aerosols Manufactured/Otherwise Used



  - See *Guidance for Reporting Sulfuric Acid* (March 1998) for specific calculations

ACID AEROSOLS THRESHOLD DETERMINATIONS

- Acid Aerosols Generated in Storage Tanks
  - The amount of acid aerosol manufactured is determined by the average amount that exists in the atmosphere above the acid solution during the year.
- Acid Aerosols Removed by Scrubbers
  - Non-aerosol forms of sulfuric/hydrochloric acid are not reportable under EPCRA Section 313; therefore, acid aerosols removed by scrubbers are converted to a non-reportable form, the quantity removed by the scrubber should be reported as having been treated for destruction

CHEMICALS MODIFIED

- Ammonia
  - Requires threshold determination and release and other waste management quantity calculations for aqueous ammonia from any source (i.e., anhydrous ammonia in water or water dissociable ammonium salts) be based on 10 percent of the total ammonia present in aqueous solutions
  - Anhydrous ammonia - include 100% for thresholds and releases
    - » Including air releases from aqueous ammonia
  - Effective RY 1994

13

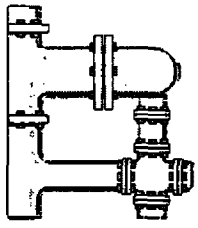
CHEMICALS MODIFIED

- Glycol ethers category
  - Removed surfactant glycol ethers from category (59 FR 34386, 7/5/94)
  - Common glycol ethers still in category include:
    - » 2-Butoxyethanol (CAS # 111-76-2)
    - » Diethylene glycol monoethyl ether acetate (CAS # 112-15-2)
    - » Diethylene glycol monobutyl ether (CAS # 112-34-5)
  - Effective RY 1993

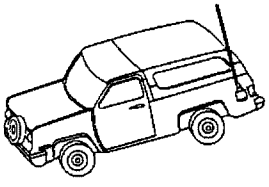
14

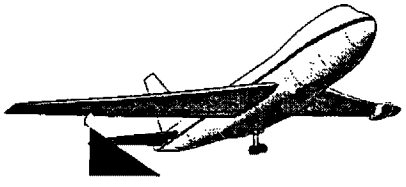
ADMINISTRATIVE STAYS

- No reporting required for the following chemicals until further notice
  - 2,2-Dibromo-3-nitrilopropionamide (DBNPA) (CAS # 10222-01-2)
    - » Effective RY 1995
  - Hydrogen sulfide (CAS # 7783-06-4)
    - » Effective RY 1994
  - Methyl mercaptan (CAS # 74-93-1)
    - » Effective RY 1994



SECTION 313 REPORTING EXEMPTIONS





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SECTION 313 EXEMPTIONS

- Originally designed for manufacturing facilities to:
  - Reduce burden of reporting associated with small or ancillary chemical uses
  - If an exemption applies, then the amount of an EPCRA Section 313 chemical subject to the exemption does not have to be included in:
    - » Threshold determinations
    - » Release and other waste management reporting
    - » Supplier notification
- Recognize that exemptions only apply to certain limited circumstances

2

SECTION 313 EXEMPTIONS

- Types of exemptions
  - *De minimis*
  - Articles
  - Laboratory activities
  - Motor vehicle maintenance
  - Routine janitorial or facility grounds maintenance
  - Structural components
  - Personal use
  - Intake water and air
  - Mining (extraction activities and overburden)

3

DE MINIMIS EXEMPTION

- The quantity of a Section 313 chemical in a mixture or other trade name product is eligible for the exemption if the chemical is:
  - An OSHA-defined carcinogen present at a concentration of less than 0.1% by weight

    or
  - Any other Section 313 chemicals present at a concentration of less than 1% by weight

4

DE MINIMIS EXEMPTION
How It Works

- *De minimis* exemption can apply to:
  - Chemicals in mixtures or other trade name products processed or otherwise used
  - Chemicals coincidentally manufactured as impurities that remain in products
  - Chemicals imported in mixtures or other trade name products

DE MINIMIS EXEMPTION
How It Works

- *De minimis* exemption does not apply to:
  - Manufacturing chemicals (in most cases)
  - Manufacturing chemicals as by-products
  - Coincidentally manufacturing chemicals
    - As by-products of waste treatment or fuel combustion

DE MINIMIS EXEMPTION
How It Works

- *De minimis* exemption does not apply to:
  - Wastes and waste streams, from non-exempt sources, that are processed or otherwise used
    - » Wastes received from off-site for purposes of on-site incineration
  - Releases and other waste management activities from mixtures or other trade name products that are not associated with a processing or otherwise use activity
    - » Material storage not associated with processing or otherwise use activities

DE MINIMIS EXEMPTION
How It Works

- *De minimis* concentration for toluene is 1.0% (not an OSHA carcinogen)

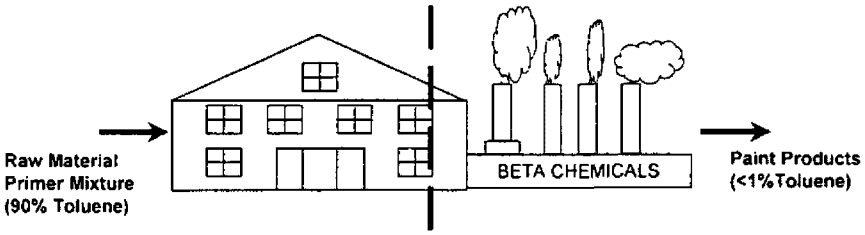
Cleaning Mixture
0.5% Toluene
(exempt)

Raw Material Mixture
90% Toluene
(not exempt)

- Toluene in cleaning mixture is below *de minimis* concentration and is eligible for the exemption

DE MINIMIS EXEMPTION
How It Works

- Processing a Section 313 chemical in a mixture to below the *de minimis* concentration does not exempt the chemical from threshold determinations and release and other waste management calculations



Toluene > 1%

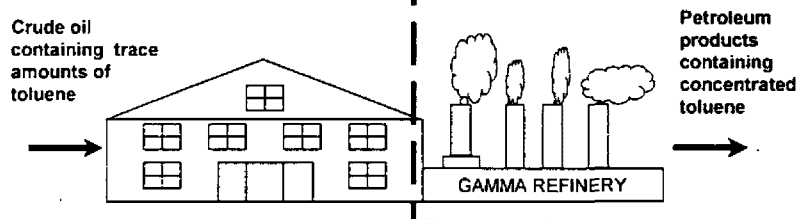
- *De minimis* exemption does not apply
- Threshold determination required
- Release and other waste management calculations required

Toluene <1%

- *De minimis* exemption does not apply
- Threshold determination required
- Release and other waste management calculations still required

DE MINIMIS EXEMPTION
How It Works

- Processing a Section 313 chemical in a mixture to above the *de minimis* concentration triggers threshold determinations and release and other waste management calculation requirements



Toluene < 1%

- *De minimis* exemption can apply
- Do not include in threshold
- Do not include in release and other waste management calculations

Toluene > 1%

- *De minimis* exemption does not apply
- Threshold determination required
- Release and other waste management calculations required

ARTICLES EXEMPTION

- "Article" is defined as an item that is already manufactured and:
  - Is formed into a specific shape or design during manufacture; and
  - Has end-use functions dependent in whole or in part on its shape or design during end-use; and
  - Does not release a Section 313 chemical under normal processing or otherwise use conditions at a facility
- EPCRA Section 313 chemicals otherwise used to manufacture an article are not exempt

ARTICLES EXEMPTION
How It Works

- Releases from an article may negate the exemption. To maintain the article status, total releases from all like items must be:
  - In a recognizable form
  - Recycled or
  - 0.5 pounds or less (may be rounded down to zero)
- If more than 0.5 pounds of a Section 313 chemical are released from all like items in a non-recognizable form and is not recycled, none of the items meet the articles exemption.

ARTICLES EXEMPTION
How It Works

- **Example:**
  Wire is cut to specified lengths. Wastes include off-spec cuts and dust.
  - **Dust and off-spec cuts not recognizable as articles, released from like items in quantities greater than 0.5 pounds, and not recycled, negate the article status**
  - **Generation of off-spec cuts that are recognizable as articles will not, by itself, negate the article status**

LABORATORY ACTIVITIES EXEMPTION

- **Section 313 chemicals manufactured, processed, or otherwise used in certain laboratory activities, performed under the supervision of a technically qualified individual, may be eligible for the exemption**
- **Activity must occur in a laboratory to be exempt**
- **Laboratories, themselves, are <u>not</u> exempt**

LABORATORY ACTIVITIES EXEMPTION

- Definition of technically qualified individual (40 CFR 720.3(ee))
  - Capable of understanding the health and environmental risks associated with the chemical substance which is used under his or her supervision because of education, training, or experience, or a combination of these factors;
  - Responsible for enforcing appropriate methods of conducting scientific experimentation, analysis, or chemical research to minimize such risks; and
  - Responsible for the safety assessments and clearances related to the procurement, storage, use, and disposal of the chemical substance as may be appropriate or required within the scope of conducting a research and development activity.

15

LABORATORY ACTIVITIES EXEMPTION
How It Works

Section 313 chemicals manufactured, processed, or otherwise used in these laboratory activities are eligible for the exemption

- Sampling and analysis
- Quality assurance
- Quality control

16

LABORATORY ACTIVITIES EXEMPTION
How It Works

Section 313 chemicals manufactured, processed, or otherwise used in these laboratory activities are NOT exempt

- Any activities conducted outside laboratories
- Specialty chemical production
- Pilot-scale plant operations
- Support services
  - Photo processing
  - Equipment maintenance / cleaning

17

MOTOR VEHICLE MAINTENANCE EXEMPTION

- Section 313 chemicals otherwise used to maintain motor vehicles operated by the facility are eligible for the exemption
- Examples of motor vehicles eligible for the exemption include cars, trucks, and forklifts
- Examples of exempt motor vehicle maintenance:
  - Body repairs
  - Parts washing and plating
  - Fueling and adding other fluids (e.g., ethylene glycol)

18

ROUTINE JANITORIAL OR FACILITY GROUNDS MAINTENANCE EXEMPTION

- Section 313 chemicals contained in products otherwise used for non-process related routine janitorial or facility grounds maintenance are eligible for the exemption
  - Phenol in bathroom disinfectants
  - Pesticides in lawn care products
- Section 313 chemicals otherwise used in the following process-related activities are not exempt
  - Facility equipment maintenance
  - Cleaning or maintenance activities that are integral to the production process of the facility

STRUCTURAL COMPONENT EXEMPTION

- The otherwise use of Section 313 chemicals, that are part of structural components of a facility, are eligible for the exemption provided the structure is not process related
  - Copper in pipe used in construction of employees' bathroom facilities
  - Metals, pigments, and solvents in paint applied to facility structure

OTHER SECTION 313 EXEMPTIONS

- Section 313 chemicals contained in non-process related items for employee personal use
  - HCFC 22 in air conditioners used solely for employee comfort
  - Chlorine used to treat on-site potable water
  - Phenol in a facility medical dispensary
- Section 313 chemicals found in intake water (e.g., process water and non-contact cooling water) and air (e.g., used as compressed air)

21

SIC CODE-SPECIFIC EXEMPTIONS

- SIC Code 12: Coal mining extraction activities are exempt from threshold determinations and release reporting (40 CFR 372.38(g))
  - Coal extraction: the physical removal or exposure of ore, coal, minerals, waste rock, or overburden prior to beneficiation, and encompasses all extraction-related activities prior to beneficiation. (40 CFR 372.3)
- SIC Code 10: Chemicals in overburden are specifically exempt from TRI reporting (See 40 CFR 372.38(h))
  - Overburden: unconsolidated material that overlies a deposit of useful materials or ores (40 CFR 372.3)

22

EXERCISE #1: THRESHOLD QUIZ

Purpose: Familiarize participants with the criteria for TRI reporting, including thresholds for manufacturing, processing or otherwise using listed chemicals, which determine whether or not a facility must submit a Form R for a listed chemical.

Take-Away: Knowledge and understanding of TRI reporting thresholds.

Instructions: Read each question carefully. Using your knowledge of TRI reporting thresholds, choose the **best** of the four answers.

1. **A facility begins the reporting year with an inventory of 24,600 pounds of copper sheets for its decorative mail box manufacturing operation, all of which is used in the reporting year. All sheets are cut and grinded into different diameters during the processing operation which generated less than 10 pounds of fugitive emissions of copper during the reporting year. In addition, the facility processes 500 pounds of copper ingots into wire which is sold to an electronics firm. However, the 500 pounds of copper ingots were obtained by on-site reuse of the scrap copper generated from the mail box manufacturing operation. Is this facility's processing of copper subject to EPCRA Section 313 reporting and why?**

   a. No, because, the facility is reprocessing 500 pounds of copper, only a total of 24,600 pounds of copper would be applied to the 25,000 pound threshold determination for processing.
   b. No, because the scrap was reused, the article exemption from threshold determinations is maintained for all uses of copper.
   c. Yes, because 24,600 pounds of copper sheets and 500 pounds of copper ingots were both processed, therefore the facility exceeded the 25,000 pound processing threshold.
   d. No, because the 24,600 pounds of copper sheets were present in the facility prior to the reporting year, it is not calculated for threshold determinations. Only amounts newly added to the facility are calculated for threshold determinations.

2. **A facility processes 100,000 pounds of a mixture containing 25% zinc chromate, and 25% chromium dioxide by weight. For purposes of Section 313 reporting, how much zinc and chromium were processed?**

   a. 25,000 pounds zinc compounds, and 25,000 pounds of chromium compounds
   b. 25,000 pounds zinc, and 25,000 pounds chromium
   c. 25,000 pounds zinc, and 50,000 pounds chromium
   d. 25,000 pounds zinc compounds, and 50,000 pounds chromium compounds

3. **A facility buys a solution containing 29 percent 1,1,1-trichloroethane and processes it as a constituent of a cleaning solution that they sell in retail stores. The 1,1,1-trichloroethane is present in final product at 0.5 percent. The product is packaged into one-gallon containers. What amounts of the 1,1,1-trichloroethane in mixtures must the facility consider for threshold determinations?**

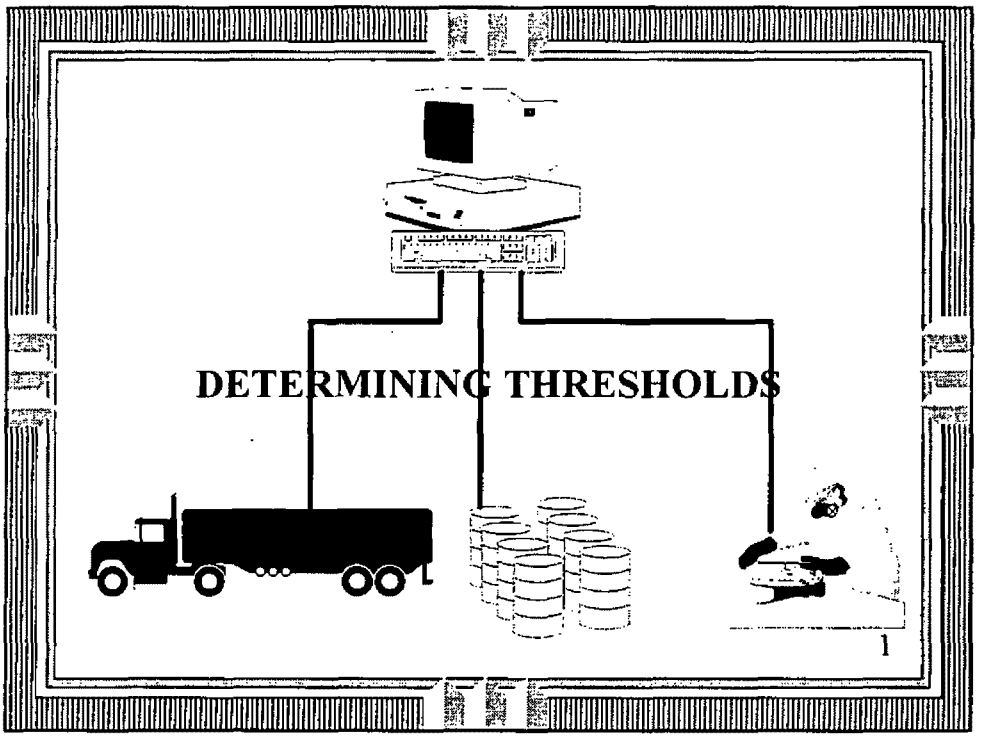
   a. Any amount used within the facility during the reporting year, except the amount distributed through retail outlets to consumers, must be considered processed.
   b. Because the mixture was otherwise used, it is not eligible for the de minimis exemption. The quantity used must be applied to the otherwise use threshold.
   c. Because the mixture was received and processed in concentrations above the de minimis for 1,1,1-trichloroethane, all quantities must be applied to the processing threshold.
   d. Only amounts distributed into commerce need to be considered towards the processing threshold, and because these quantities are present below the de minimis concentration, they are exempt.

4. **Which of the following qualifies as a section 313 reporting exemption?**

   a. Like "articles" that release over 10 pounds of a section 313 chemical, not recovered, under regular normal processing or use.
   b. Painting process equipment at the facility.
   c. Chemical use in non-process related routine janitorial or facility grounds maintenance.
   d. Laboratory support activities.

5. **During the reporting year, your facility receives 20,000 pounds of chlorine in solution. 10,000 pounds of the chlorine is transferred to a tank to make a bleaching mixture, where its concentration drops below the de minimis level, which is then sold and distributed in commerce. 5,000 pounds of the original mixture is used to treat the drinking water consumed by employees. The remaining 5,000 pounds of the original mixture is used throughout the plant to clean process equipment. Wastewater from the cleaning and bleach production operations is released with chlorine levels well below the de minimis level. Which of the following is true?**

   a. All uses of the chlorine are subject to section 313 reporting because the concentration of the received mixture is well above the de minimis level and the threshold limit for otherwise use has been met.
   b. Only the use of chlorine for drinking water is exempt from section 313 reporting.
   c. Only the drinking water and cleaning operations will be exempt from section 313 reporting due to the personal use and routine maintenance exemptions, respectively.
   d. The drinking water and cleaning uses are covered under the personal use and routine maintenance exemptions, respectively. The bleach production operation and the wastewater generated in conjunction with this operation are not exempt from section 313 reporting; however, the wastewater from the cleaning operations are exempt.


DETERMINING THRESHOLDS
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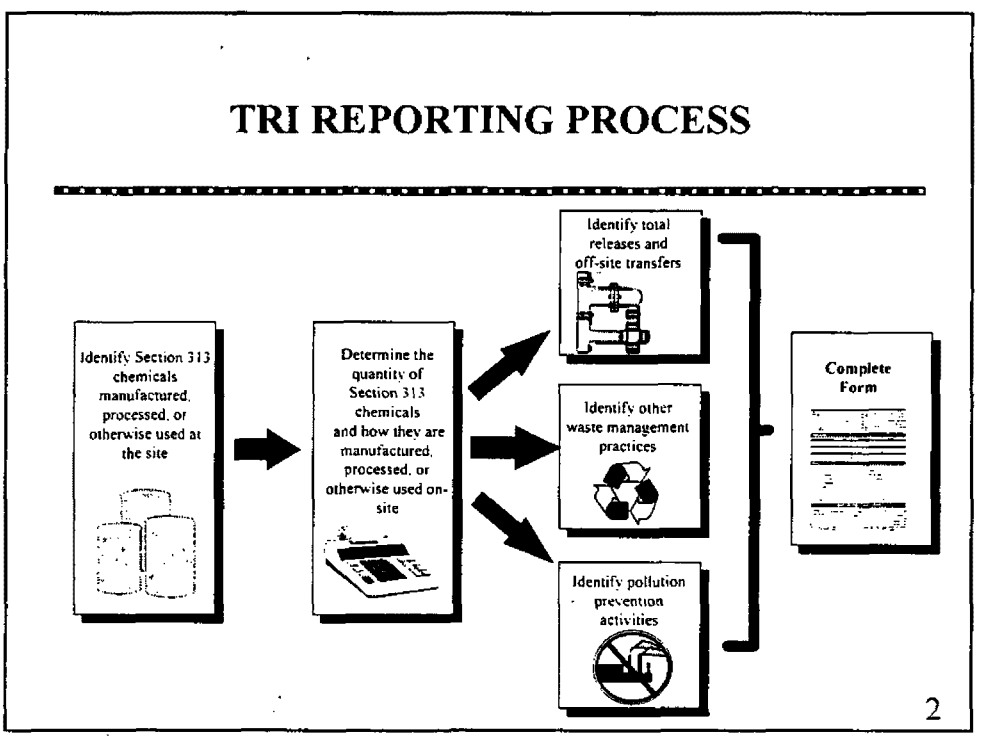
TRI REPORTING PROCESS
Identify Section 313 chemicals manufactured, processed, or otherwise used at the site
Determine the quantity of Section 313 chemicals and how they are manufactured, processed, or otherwise used on-site
Identify total releases and off-site transfers
Identify other waste management practices
Identify pollution prevention activities
Complete Form
2

DETERMINING THRESHOLDS

- Identify what Section 313 chemicals are handled on-site
- Identify concentrations of Section 313 chemicals
- Collect data and calculate quantities towards each threshold

3

DETERMINING THRESHOLDS

Identify Chemicals and Concentrations:	Collect Data to Calculate Thresholds:
MSDS	Inventory Records
Specifications	Throughput/Production Data
Waste Profiles	Purchase Records
Process Knowledge	EPCRA or Other Env. Reports
Other References (AP-42, Merck Index)	Ask the User
Supplier Notification	Call the Vendor

4

DETERMINING CONCENTRATIONS OF SECTION 313 CHEMICALS

- Chemical component - include in threshold "each listed Section 313 chemical known to be present" at a concentration greater than the *de minimis* limits (EPCRA §313 (g)(1)(C))
  - "Known" - knowledge based on MSDS, analytical data, process knowledge, labeling, literature, other vendor-supplied information, or existing analysis
  - If concentration is unknown, threshold determination for the Section 313 chemical is not required (40 CFR 372.30(b)(3))

SUPPLIER NOTIFICATION FOR MIXTURES AND OTHER TRADE NAME PRODUCTS

- Supplier Notification - requires suppliers to facilities described in 40 CFR 372.22 to:
  - Identify Section 313 chemical(s) by name and CAS number
  - Identify Section 313 chemical(s) as being subject to EPCRA Section 313 requirements
  - Provide concentration (or range) of Section 313 chemicals in mixtures and other trade name products (not wastes)
  - Provide notification at least annually in writing or attached to the MSDS
  - Update notification when changes occur
  - Only facilities in primary SIC codes 20-39 must initiate the notification

DETERMINING CONCENTRATIONS IN MIXTURES OR OTHER TRADE NAME PRODUCTS

- Include a Section 313 chemical in the threshold determinations if you know:
  - Exact concentration - use concentration provided
  - Upper bound - use upper limit
  - Range - use the midpoint of the range
  - Lower bound - subtract out other known constituents, create a range, and use the midpoint of range

Note: Thresholds are based on weight in pounds.

DETERMINING CONCENTRATIONS IN WASTES

- De minimis exemption does not apply to wastes that are processed or otherwise used
- If concentration is exact, upper bound, range, or lower bound, use the guidance for mixtures and other trade name products
- If concentration is below detection limit, use engineering judgment:
  - If the Section 313 chemical is expected to be present, assume 1/2 of full detection limit
  - If the Section 313 chemical is not expected to be present, assume 0

MEETING MULTIPLE THRESHOLDS

- There are many situations where one Section 313 chemical must be counted towards multiple activity thresholds
  - Section 313 chemicals manufactured or imported on-site, then used or incorporated into a product (processed)
  - Section 313 chemicals formed during destruction of wastes received from off-site and subsequently destroyed on-site (manufactured and otherwise used)
  - Section 313 chemicals that are otherwise used on-site, recycled, then processed
- Section 313 chemicals should not be counted twice towards the same activity threshold

WATCH FOR DOUBLE COUNTING!!!

- For threshold determinations, Section 313 chemicals reused or recycled at a facility: count original amount used only once
  - Note: Section 313 chemicals sent off-site for recycling and returned to the facility are considered new materials and counted for threshold determinations
  - For materials in use from previous years: count only the quantity added during current reporting year

MULTI-ESTABLISHMENT FACILITY

- Determining how facilities report
  - Multi-establishment facility
    - » Apply threshold determination on aggregate amount of chemicals used at facility
    - » Able to file separate Form R reports for each establishment if they are distinct economic entities (must be designated as part of a facility on Form R)
    - » Report all releases and other waste management activities of reportable Section 313 chemicals
    - » Avoid double-counting of chemicals involved in intra-facility transfers

CALCULATING THRESHOLDS

- Consider all activities
  - Chemicals used in neutralization, refrigerants, cleaners, paints, lubricants (for non-vehicles), fuel (for non-vehicles), refractory bricks
  - Consider all sources
  - Purchasing/Inventory Control
  - Contractors
  - Bulk deliveries
  - Capital purchases
  - "Credit card" or "emergency" purchases

ORCHESTRATING DATA COLLECTION

- **Methods for orchestrating data collection**
  - Coordinate with purchasing/vendors
  - Develop inventory controls
  - Require requisition or "sign out" procedure for Section 313 chemicals
  - Take year-end inventories
- **Identify ALL chemical purchasing and usage**
- **Threshold determination worksheets**

OPTIONAL SECTION 313 THRESHOLD DETERMINATION WORKSHEET

Facility Name: OMNI CHEMICAL
Toxic Chemical or Chemical Category: Toluene
Reporting Year: _____
Date Worksheet Prepared: _____
Prepared By: J.S.P.

Step 1. Identify amounts of the toxic chemical manufactured, processed, or otherwise used.

Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (in lbs)	Amount of the Listed Toxic Chemical by Activity (in lbs):		
				Manufactured	Processed	Otherwise Used
1. Joe's Degreaser	Purchasing	50	10,000			5,000
2. Yellow Safety Paint	Vendor	5	30,000			1,500
3. Parts Washer Fluid	Purchasing	40	10,000			4,000
4.						
5.						
6.						
7.						
Subtotal:				(A) _____ lbs.	(B) _____ lbs.	(C) 10,500 lbs.

Step 2. Identify exempt forms of the toxic chemical that have been included in Step 1.

Mixture Name as Listed Above	Applicable Exemption	Note Fraction or Percent Exempt (if Applicable)	Exempt Amount of the Toxic Chemical from Above (in lbs):		
			Manufactured	Processed	Otherwise Used
1. Yellow Safety Paint	Struct. Comp.	100			1,500
2.					
3.					
4.					
5.					
6.					
7.					
Subtotal:			(A_1) _____ lbs.	(B_1) _____ lbs.	(C_1) 1,500 lbs.

Step 3. Calculate the amount subject to threshold: (A - A_1) _____ lbs. (B - B_1) _____ lbs. (C - C_1) 9,000 lbs.

Compare to thresholds for section 313 reporting. 25,000 lbs. 25,000 lbs. 10,000 lbs.

If any threshold is met, reporting is required for all activities. Do not submit this worksheet with Form R. Retain for your records.

MANAGEMENT PRACTICES

- Begin early
  - Implement a program to gather "real-time" data on usage
  - Searches for historical information can be difficult
- Use a team approach
  - Include all relevant personnel (e.g., engineering, environmental, operations)
  - Spread the burden

RECORDKEEPING

- Detailed records
  - Improve reporting accuracy and data quality
  - Reduce replication of effort from year to year
- Well-labeled calculations and assumptions
  - Serve as standard operating procedures (SOPs) for future years
  - Ensure consistency from year to year, especially if personnel responsible for reporting change
- All records used to complete Form R must be kept for three years (40 CFR 372.10)
- EPA will review records during a data quality audit

TRI RELEASE AND OTHER WASTE MANAGEMENT REPORTING

1

REPORTING METHOD

- Identify potential release and other waste management sources
- Identify available data and tools
- Collect data
- Estimate quantity of chemical being released and otherwise managed as waste
- Document your work

2

TOOLS AND DATA SOURCES FOR CALCULATING REPORTING ESTIMATES

- Process flow diagrams
- Waste management manifests, invoices, and waste profiles
- Environmental monitoring data
- Permit applications
- RCRA (BRS), NPDES, CAA, CERCLA and other env. reports
- Engineering calculations and other notes
- EPA guidance

3

CALCULATING REPORTING ESTIMATES

- Consider all sources (routine and non-routine)
- Reasonable estimates are required by law
- Facility determines best approach
- Data and approach must be documented

4

TECHNIQUES FOR ESTIMATING CHEMICAL QUANTITIES

- Use of monitoring data
- Mass balance calculation
- Use of emission factors
- Engineering calculations

5

ANALYSIS OF MONITORING DATA

- Product of measured concentrations, volumetric flow rates, and density equals pounds of chemical released per year
- Most commonly used for wastewater (Discharge monitoring reports (DMRs))
- Use Basis of Estimate code "M" if calculations based primarily on monitoring data

6

MASS BALANCE CALCULATION

- Mass Balance is based on the law of conservation of mass
- Input + Generation = Output + Amount Reacted + Accumulation
- Most useful in simple situations
- Use Basis of Estimate code "C"
  - Example: Estimating fugitive air emissions from storage containers and process equipment

7

USE OF PUBLISHED EMISSION FACTORS

- Values used to describe the quantity of chemical released as a function of:
  - Specific chemical used
  - Specific process used
  - Specific equipment used
- Available in *Compilation of Air Pollutant Emission Factors (AP-42)*
- Use Basis of Estimate code "E"

8

ENGINEERING CALCULATIONS

- Calculations based on best engineering judgment/assumptions
- Calculations based on process knowledge
- Use of non-chemical-specific emission factors
- Use of non-published emission factors
- Use Basis of Estimate code "O"

SIGNIFICANT FIGURES

- Significant figures should reflect the precision of the estimate
  - EPA recommends using two significant figures when reporting releases and other waste management estimates
  - If estimate is more precise, additional significant figures should be used
  - for estimates under 1,000 pounds, a range code can be used:
    - » A= 1-10 lbs.; B = 11-499 lbs.; C = 500-999 lbs.

"NA" VS. "0"

- Use "NA" (not applicable) when no possibility of Section 313 chemical being released to or otherwise managed as waste in that media
  - Example: Facility has no on-site landfill
- Use "0" when no release to or other waste management in the specific media occurs, but is possible
  - Example: Discharge to water is zero; however, release possible if control equipment fails
  - Must indicate a Basis of Estimate code (i.e., M, C, E, O) for all numerical estimates, including "0"

FUGITIVE EMISSIONS

- Part II, Section 5.1: Fugitive or non-point air emissions
  - Approach: ID potential sources --> ID data/tools --> estimate
- Data Sources/Tools
  - Engineering calculations
  - Emission factors
  - Monitoring data
  - Mass balance

STACK EMISSIONS

- Part II, Section 5.2: Stack or point-source air emissions
  - Approach: ID potential sources --> ID data/tools --> estimate
  - Data Sources/Tools
    - » Air permit applications
    - » CAA Title V air inventories
    - » Process and production data
    - » Engineering calculations
    - » Mass balance
    - » Emission factors

13

WASTEWATER DISCHARGES

- Part II, Section 5.3: Release to stream or water body and Part II, Section 6.1: Discharges to POTW
  - Approach: ID potential sources --> ID data/tools --> estimate
- Potential release sources
  - Wastewater treatment facility discharge
  - Storm Drains
- Data/Tools
  - Monitoring, if available
  - DMRs or other required monitoring data
  - NPDES permits/permit applications
  - Process knowledge and/or mass balance

14

CALCULATING WASTEWATER DISCHARGES

- Calculate the yearly pounds of methanol discharged using the following data concerning wastewater discharges of methanol:

Date	Conc. (mg/L)	Flow (MGD)	Amt.(lbs./day)
3/1	1.0	1.0	8.33
9/8	0.2	0.2	.33
		Average =	4.33

(4.33 lbs./day) x (365 days/yr.) = 1581 lbs./yr.

MGD = million gallons per day

1 mg/L = 8.33 lbs./million gal

RELEASED TO LAND ON-SITE

- Approach: ID potential sources --> ID data/tools -->estimate
- Potential sources of release to land
  - Landfills
  - Surface Impoundments
  - Spills
  - Leaks
- Data/tools:
  - Operating records/analytical data
  - Spill reports
  - Process knowledge

WASTE RELEASED TO LAND ON-SITE--MIGRATION

- Migration of a Section 313 chemical contained in waste released (including disposal) may occur
  - Migration of reportable chemical within one environmental medium (e.g., leachate from landfill)
    - » Only required to report initial release of chemical to the environment
  - Migration of chemical from one environmental medium to another (e.g., volatilization from a landfill) within the reporting year
    - » Release estimates should be calculated based on ultimate disposition during reporting year

ON-SITE WASTE MANAGEMENT

- Examples
  - Air pollution control devices (Section 7A)
  - Wastewater treatment processes (Section 7A)
  - Energy recovery devices (Section 7B)
  - Recycling devices (Section 7C)
- Consistency between Sections 7 and 8

OFF-SITE WASTE MANAGEMENT

- Approach: ID potential sources --> ID data/tools --> estimate
- Potential sources of off-site waste management
  - Identify final disposition of Section 313 chemical
    - » Disposal
    - » Waste treatment
    - » Energy recovery
    - » Recycling
- Data/tools
  - Waste manifests and vendor receipts
  - RCRA reports
  - Waste characterization - analyses, profiles

MAXIMUM QUANTITY ON-SITE

- Part II, Section 4.1: Maximum amount on-site at any time during the calendar year
  - Based on amount in storage, process, and wastes
  - Not the same as Tier II maximum amount on site
    - » Tier II is usually by mixtures, Form R is chemical-specific
    - » Tier II excludes hazardous wastes, Form R does not
- Data sources
  - Tier II records/calculations
  - Waste inventory data

BEST PRACTICE: RECORDKEEPING

- Importance of good recordkeeping
  - Detailed records improve reporting accuracy and data quality
  - Well-labeled calculations and engineering assumptions serve as standard operating procedures for future years
    - Reduce replication
    - Ensure consistency
- Requirements
  - All records used to complete Form R reports must be kept for three years (40 CFR 372.10)
  - EPA will review records during a data quality audit

FORM R / FORM A OVERVIEW

AUTOMATED TRI REPORTING SYSTEM (ATRS)

- Voluntary option to submit form electronically
- Forms submitted on diskette and loaded directly into EPA's TRI Database
- Windows 3.1, 95, 98, NT versions available
- ATRS has built-in data validation program and pick lists
- A signed ATRS - generated cover letter is the sole paper requirement

OVERVIEW OF FORM R

- Two principal types of information
  - Facility-specific
  - Chemical-specific
- One form must be submitted to EPA and to the SERC/TERC for each Section 313 chemical or chemical category exceeding applicable thresholds

PART I: FACILITY INFORMATION

- Identifies the facility
  - Name and address
  - TRI facility identification number
- Provides key data for linking information to other databases
  - SIC code(s)
  - Identification numbers (RCRA, NPDES, Dun & Bradstreet, Underground Injection Control)
- Identifies key personnel
  - Technical contact
  - Public contact

PART II: CHEMICAL-SPECIFIC INFORMATION

- Identifies the Section 313 chemical and its uses at the facility
  - Chemical identity
  - Activities and uses of the Section 313 chemical
  - Maximum amount on-site at one time
- Identifies quantities released and managed as wastes
  - Total release of the Section 313 chemical to each medium
  - Transfers of waste to off-site locations (excluding transfers for sale)
  - On-site waste treatment methods and efficiency(ies)
- Identifies other waste management and source reduction activities

PART II. SECTION 5: QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM

- Total aggregate releases of Section 313 chemical to the environment from the facility during calendar year
  - Report total releases of Section 313 chemical to each environmental medium
- In column A, Total Releases, report total quantity
  - A range code can be used for quantities less than 1,000 pounds)
    - » A = 1 - 10 pounds
    - » B = 11 - 499 pounds
    - » C = 500 - 999 pounds

PART II. SECTION 5: QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM

- Basis of estimate codes
  - Monitoring data (M)
  - Mass balance (C)
  - Emission factor (E)
  - Other approaches and engineering estimates (O)
- Use the code for the method used to estimate the largest portion of the release

7

PART II. SECTION 6: TRANSFERS OF THE TOXIC CHEMICAL IN WASTE STREAMS TO OFF-SITE LOCATIONS

- Includes both off-site location information and quantities of Section 313 chemicals transferred to off-site locations
- Report quantities of a Section 313 chemical sent off-site to any POTW or other location for recycling, energy recovery, waste treatment, or disposal
- Report only total quantity of a Section 313 chemical transferred off-site, not entire waste
- In Sections 6.1.A.1 and 6.2.A, Total Transfers, report total quantity
  - A range code can be used for quantities less than 1,000 pounds
    - » A = 1 - 10 pounds
    - » B = 11 - 499 pounds
    - » C = 500 - 999 pounds

8

PART II. SECTION 7A: ON-SITE WASTE TREATMENT METHODS AND EFFICIENCY

- General waste stream type containing the Section 313 chemical, treatment method(s), influent concentration range, estimate of treatment efficiency, and indication if information is based on operating data
- Report each waste treatment method that the Section 313 chemical undergoes
  - Include even if method has no effect on Section 313 chemical
- Only data element in Form R focusing on the entire waste stream rather than the Section 313 chemical in the waste stream

PART II. SECTION 7B: ON-SITE ENERGY RECOVERY PROCESSES

- Enter on-site energy recovery methods for Section 313 chemical
  - Section 313 chemical must be combustible and have a significant heating value (e.g., 5,000 BTU/lb.)
  - Combustion unit is integrated into an energy recovery system (e.g., industrial furnace, industrial kiln, or boiler)
- Enter codes in descending order by quantities combusted

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES				
☐ Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.				
Energy Recovery Methods [enter 3-character code(s)]				
1	2	3	4	

PART II. SECTION 7C: ON-SITE RECYCLING PROCESSES

- Enter methods used for on-site recycling of Section 313 chemical
  - Codes for recycling methods used are found in EPA instructions document
  - Do not include energy recovery processes
- Enter codes in descending order by quantities recycled

SECTION 7C. ON-SITE RECYCLING PROCESSES

☐ Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods (enter 3-character code(s))

1	2	3	4	5
6	7	8	9	10

PHOTOCOPYING PAGES OF FORM R

- Form R pages may be photocopied if additional space is necessary to complete these sections (photocopying is not necessary with ATRS)
  - Section 6.1: Transfers to POTWs
  - Section 6.2: Transfers to Other Off-Site Locations
  - Section 7A: Waste Treatment Methods and Efficiency
- When photocopying pages, you must complete the box on each page to indicate the number of copies you are attaching
- For the page being photocopied, enter in the left box the total number of pages submitted including the original

  original + number photocopied = total pages submitted

  - In the second box, indicate the position of the individual page

Example

If additional pages of Part II, Sections 6.2/7A are attached, indicate the total number of pages in this box ☐ and indicate which Part II, Sections 6.2/7A page this is, here. ☐ (example: 1.2.3. etc.)

Form Approved OMB Number: 2070-0093
Approval Expires: 01/01/2001

(IMPORTANT: Type or print: read instructions before completing form)

EPA
United States Environmental Protection Agency

FORM R

TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM

Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act

WHERE TO SEND COMPLETED FORMS: 1. EPCRA Reporting Center, P.O Box 3348, Merrifield, VA 22116-3348, ATTN: TOXIC CHEMICAL RELEASE INVENTORY
2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

Enter "X" here if this is a revision ☐

For EPA use only

Important: See instructions to determine when "Not Applicable (NA)" boxes should be checked.

PART I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR _____

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret? ☐ Yes (Answer question 2.2; Attach substantiation forms) ☐ No (Do not answer 2.2; Go to Section 3)

2.2 Is this copy ☐ Sanitized ☐ Unsanitized (Answer only if "YES" in 2.1)

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:

SECTION 4. FACILITY IDENTIFICATION

4.1 TRI Facility ID Number

Facility or Establishment Name	Facility or Establishment Name or Mailing Address(if different from street address)
Street	Mailing Address
City/County/State/Zip Code	City/County/State/Zip Code

4.2 This report contains information for: (Important : check a or b; check c if applicable) a. ☐ An entire facility b. ☐ Part of a facility c. ☐ A Federal facility

4.3 Technical Contact Name — Telephone Number (include area code)

4.4 Public Contact Name — Telephone Number (include area code)

4.5 SIC Code (s) (4 digits)

Primary					
a.	b.	c.	d.	e.	f.

4.6

Latitude	Degrees	Minutes	Seconds	Longitude	Degrees	Minutes	Seconds

4.7 Dun & Bradstreet Number(s) (9 digits)	4.8 EPA Identification Number (RCRA I.D. No.) (12 characters)	4.9 Facility NPDES Permit Number(s) (9 characters)	4.10 Underground Injection Well Code (UIC) I.D. Number(s) (12 digits)
a.	a.	a.	a.
b.	b.	b.	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1 Name of Parent Company — NA ☐

5.2 Parent Company's Dun & Bradstreet Number — NA ☐

EPA FORM R
PART II. CHEMICAL-SPECIFIC INFORMATION

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 1. TOXIC CHEMICAL IDENTITY (Important: DO NOT complete this section if you completed Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete **only** if Part 1, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY

(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. ☐ Produce b. ☐ Import		
If produce or import:		
c. ☐ For on-site use/processing	a. ☐ As a reactant	a. ☐ As a chemical processing aid
d. ☐ For sale/distribution	b. ☐ As a formulation component	b. ☐ As a manufacturing aid
e. ☐ As a byproduct	c. ☐ As an article component	c. ☐ Ancillary or other use
f. ☐ As an impurity	d. ☐ Repackaging	

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

4.1	☐ (Enter two-digit code from instruction package.)	

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

			A. Total Release (pounds/year) (Enter range code or estimate*)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA ☐			
5.2	Stack or point air emissions	NA ☐			
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
	Stream or Water Body Name				
5.3.1					
5.3.2					
5.3.3					
5.4.1	Underground Injection onsite to Class I Wells	NA ☐			
5.4.2	Underground Injection onsite to Class II-V Wells	NA ☐			

If additional pages of Part II, Section 5.3 are attached, indicate the total number of pages in this box ☐ and indicate the Part II, Section 5.3 page number in this box. ☐ (example: 1,2,3, etc.)

* Range Codes: A= 1 - 10 pounds; B= 11- 499 pounds; C= 500 - 999 pounds.

EPA FORM R
PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number:

Toxic Chemical, Category or Generic Name:

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (Continued)

		NA	A. Total Release (pounds/year) (enter range code* or estimate)	B. Basis of Estimate (enter code)
5.5	Disposal to land onsite			
5.5.1A	RCRA Subtitle C landfills	☐		
5.5.1B	Other landfills	☐		
5.5.2	Land treatment/application farming	☐		
5.5.3	Surface Impoundment	☐		
5.5.4	Other disposal	☐		

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)

6.1.A Total Quantity Transferred to POTWs and Basis of Estimate

6.1.A.1. Total Transfers (pounds/year) (enter range code* or estimate)	6.1.A.2 Basis of Estimate (enter code)

6.1.B.__ POTW Name							
POTW Address							
City		State		County		Zip	
6.1.B.__ POTW Name							
POTW Address							
City		State		County		Zip	

If additional pages of Part II, Section 6.1 are attached, indicate the total number of pages in this box ☐ **and indicate the Part II, Section 6.1 page number in this box** ☐ **(example: 1,2,3, etc.)**

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2. ___ Off-Site EPA Identification Number (RCRA ID No.)							
Off-Site Location Name							
Off-Site Address							
City		State		County		Zip	

Is location under control of reporting facility or parent company? ☐ Yes ☐ No

* Range Codes: A = 1 - 10 pounds; B = 11 - 499 pounds; C = 500 - 999 pounds.

EPA FORM R

PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS (Continued)

A. Total Transfers (pounds/year) (enter range code* or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1.	1.	1. M
2.	2.	2. M
3.	3.	3. M
4.	4.	4. M

6.2. ___ Off-Site EPA Identification Number (RCRA ID No.)

Off-Site location Name

Off-Site Address

City | State | County | Zip

Is location under control of reporting facility or parent company? ☐ Yes ☐ No

A. Total Transfers (pounds/year) (enter range code* or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1.	1.	1. M
2.	2.	2. M
3.	3.	3. M
4.	4.	4. M

SECTION 7A. ON-SITE WASTE TREATMENT METHODS AND EFFICIENCY

☐ Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]	c. Range of Influent Concentration	d. Waste Treatment Efficiency Estimate	e. Based on Operating Data ?
7A.1a	7A.1b: 1 2 3 4 5 6 7 8	7A.1c	7A.1d	7A.1e
			%	Yes ☐ No ☐
7A.2a	7A.2b: 1 2 3 4 5 6 7 8	7A.2c	7A.2d	7A.2e
			%	Yes ☐ No ☐
7A.3a	7A.3b: 1 2 3 4 5 6 7 8	7A.3c	7A.3d	7A.3e
			%	Yes ☐ No ☐
7A.4a	7A.4b: 1 2 3 4 5 6 7 8	7A.4c	7A.4d	7A.4e
			%	Yes ☐ No ☐
7A.5a	7A.5b: 1 2 3 4 5 6 7 8	7A.5c	7A.5d	7A.5e
			%	Yes ☐ No ☐

If additional pages of Part II, Section 6.2/7A are attached, indicate the total number of pages in this box ☐

and indicate the Part II, Section 6.2/7A page number in this box : ☐ **(example: 1,2,3, etc)**

* Range Codes: A = 1 - 10 pounds; B = 11 - 499 pounds; C = 500 - 999 pounds.

EPA FORM R

PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

☐ Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

1 | 2 | 3 | 4

SECTION 7C. ON-SITE RECYCLING PROCESSES

☐ Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

1. | 2. | 3. | 4. | 5.

6. | 7. | 8. | 9. | 10.

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year)	Column B Current Reporting Year (pounds/year)	Column C Following Year (pounds/year)	Column D Second Following Year (pounds/year)
8.1	Quantity released **				
8.2	Quantity used for energy recovery onsite				
8.3	Quantity used for energy recovery offsite				
8.4	Quantity recycled onsite				
8.5	Quantity recycled offsite				
8.6	Quantity treated onsite				
8.7	Quantity treated offsite				
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)				
8.9	Production ratio or activity index				

8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.			
	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10.1		a.	b.	c.
8.10.2		a.	b.	c.
8.10.3		a.	b.	c.
8.10.4		a.	b.	c.
8.11	Is additional information on source reduction, recycling, or pollution control activities included with this report ? (Check one box)			YES ☐ NO ☐

** Report releases pursuant to EPCRA Section 329(8) including "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment." Do not include any quantity treated onsite or offsite

ALTERNATE THRESHOLD RULE

- EPA published Final Rule (40 CFR 372.27; 59 FR 61501, 11/30/94)
  - Reduced reporting option for low annual reportable amounts
    - » No Form R report
    - » No release, other waste management, or source reduction reporting
    - » Submit certification form (Form A) each year

13

ALTERNATE THRESHOLD RULE

- Criteria for using alternate threshold
  - Do not exceed 1,000,000 pounds manufactured, processed, or otherwise used, and
  - Do not exceed 500 pounds of a Section 313 chemical equivalent to the sum of the quantities released, transferred off-site in wastes, and combusted for energy recovery, recycled, or treated on-site.

14

ALTERNATE THRESHOLD RULE

- Recordkeeping
  - All documentation to support the determination, including:
    - » Inventory, purchasing, and sales records
    - » Release calculations
    - » Waste manifests or receipts
    - » Other waste management data

15

OVERVIEW: FORM R VS. FORM A

- Form R
  - Standard Reporting Method
  - Use for all levels of releases and other waste management
  - Report releases, other waste management, and source reduction activities
  - Recordkeeping Requirements
- Form A
  - Alternate Reporting Method
  - Use for low annual reportable amounts (<500 lbs.)
  - Submit Certification Form
  - Recordkeeping Requirements

16

(IMPORTANT: Type or print; read instructions before completing form)

Form Approved OMB Number: 2070-0143
Approval Expires: 01/01/2001

United States Environmental Protection Agency

TOXIC CHEMICAL RELEASE INVENTORY
FORM A

WHERE TO SEND COMPLETED FORMS: 1. EPCRA Reporting Center, P.O Box 3348, Merrifield, VA 22116-3348, ATTN: TOXIC CHEMICAL RELEASE INVENTORY
2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

Enter "X" here if this is a revision [ ]

For EPA use only

Important: See instructions to determine when "Not Applicable (NA)" boxes should be checked.

PART I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR _____

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret?
[ ] Yes (Answer question 2.2; Attach substantiation forms) [ ] No (Do not answer 2.2: Go to Section 3)

2.2 Is this copy [ ] Sanitized [ ] Unsanitized
(Answer only if "YES" in 2.1)

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that to the best of my knowledge and belief, for each toxic chemical listed in the statement, the annual reportable amount as defined in 40 CFR 372.27 (a), did not exceed 500 pounds for this reporting year and that the chemical was manufactured, processed, or otherwise used in an amount not exceeding 1 million pounds during this reporting year.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:

SECTION 4. FACILITY IDENTIFICATION

4.1 TRI Facility ID Number

Facility or Establishment Name	Facility or Establishment Name or Mailing Address(if different from street address)
Street	Mailing Address
City/County/State/Zip Code	City/County/State/Zip Code

4.2 This report contains information for: (Important : check c if applicable)
c. [ ] A Federal facility

4.3 Technical Contact Name _____ Telephone Number (include area code) _____

4.4 Intentionally left blank

4.5 SIC Code (s) (4 digits)

Primary a.	b.	c.	d.	e.	f.

4.6

Latitude	Degrees	Minutes	Seconds	Longitude	Degrees	Minutes	Seconds

4.7 Dun & Bradstreet Number(s) (9 digits)	4.8 EPA Identification Number (RCRA I.D. No.) (12 characters)	4.9 Facility NPDES Permit Number(s) (9 characters)	4.10 Underground Injection Well Code (UIC) I.D. Number(s) (12 digits)
a.	a.	a.	a.
b.	b.	b.	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1 Name of Parent Company NA [ ]

5.2 Parent Company's Dun & Bradstreet Number NA [ ]

IMPORTANT: Type or print; read instructions before completing form

EPA FORM A
PART II. CHEMICAL IDENTIFICATION

TRIFID:

SECTION 1. TOXIC CHEMICAL IDENTITY

Report ___ of ___

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces and punctuation.)

SECTION 1. TOXIC CHEMICAL IDENTITY

Report ___ of ___

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)

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Report ___ of ___

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces and punctuation.)

SECTION 1. TOXIC CHEMICAL IDENTITY

Report ___ of ___

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces and punctuation.)

(Make additional copies of this page, if needed)

ATRS SOFTWARE

- Advantages of completing Form R or Form A electronically
  - Reduce error by covered facilities
  - Reduce data entry error by EPA
  - Reduced data entry redundancy
  - Photocopying pages of the Form R would not be required
  - Menu-driven screens with special "hot" keys displayed
  - "Pick lists" containing valid reporting codes
  - "Real-time" error checking and validation
- Submission of forms on magnetic media is encouraged but not required

17

ATRS SOFTWARE

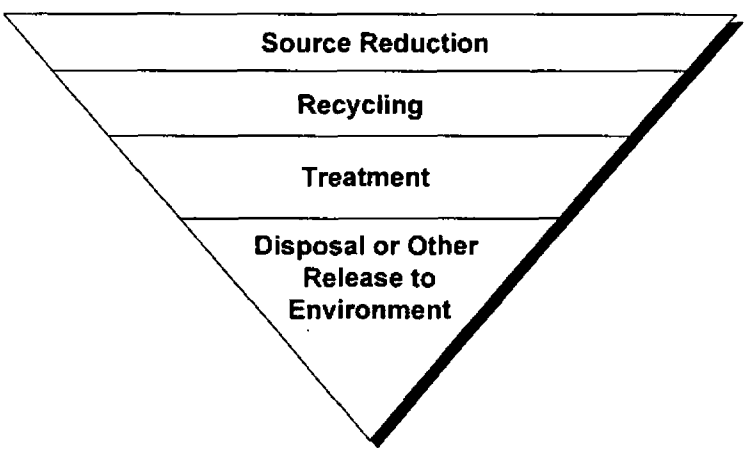
- Technical Support
  - Phone: 703-816-4434
  - Fax: 703-816-4466
  - e-mail: tris.user.support@epcra.org

18

OVERVIEW OF POLLUTION PREVENTION REPORTING

1

POLLUTION PREVENTION HIERARCHY



2

THINGS TO REMEMBER WHEN COMPLETING SECTION 8

- Key concepts
  - Waste streams
  - Process streams
  - Reportable recycling
  - Source reduction activities
- Develop consistent definitions for key terms
  - Across facility
  - Across agency/company

3

RELEASES AND OTHER WASTE MANAGEMENT

- Part II, Sections 8.1 through 8.7 of Form R
  - Column A - Prior Reporting Year Estimate
  - Column B - Current Reporting Year Estimate
  - Column C - Next Reporting Year Projection
  - Column D - Following Reporting Year Projection

4

EPA FORM R

PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

☐ Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

1 ____ 2 ____ 3 ____ 4 ____

SECTION 7C. ON-SITE RECYCLING PROCESSES

☐ Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

1. ____ 2. ____ 3. ____ 4. ____ 5. ____

6. ____ 7. ____ 8. ____ 9. ____ 10. ____

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year)	Column B Current Reporting Year (pounds/year)	Column C Following Year (pounds/year)	Column D Second Following Year (pounds/year)
8.1	Quantity released **				
8.2	Quantity used for energy recovery onsite				
8.3	Quantity used for energy recovery offsite				
8.4	Quantity recycled onsite				
8.5	Quantity recycled offsite				
8.6	Quantity treated onsite				
8.7	Quantity treated offsite				
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)				
8.9	Production ratio or activity index				

8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.			
	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10.1		a.	b.	c.
8.10.2		a.	b.	c.
8.10.3		a.	b.	c.
8.10.4		a.	b.	c.
8.11	Is additional information on source reduction, recycling, or pollution control activities included with this report ? (Check one box)			YES ☐ NO ☐

** Report releases pursuant to EPCRA Section 329(8) including "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment." Do not include any quantity treated onsite or offsite

RELEASES AND OTHER WASTE MANAGEMENT

- Part II, Sections 8.1 through 8.7 of Form R
  - Quantity of a Section 313 chemical reported in Sections 8.1 through 8.7 does not include releases (including on-site and off-site disposal) and other off-site waste management activities resulting from remedial actions, catastrophic events, or one-time events not associated with production process. These quantities should be reported in Section 8.8 only.

RELEASES

- Section 8.1: Quantity released
  - Quantity of a Section 313 chemical "released"
    - » Definition of release: "...any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing...into the environment..." (EPCRA §329(8))
    - » Includes fugitive and stack air emissions, releases to land, releases to water, underground injections, and on-site and off-site disposal
    - » Includes metals in wastes sent to a POTW (metals cannot be destroyed)

RELEASES

- Section 8.1: Quantity Released (continued)
  - § 8.1 = §5 + §6.2 (disposal only) + §6.1(for metals and metal compounds only) - §8.8 (release or off-site disposal only)
  - Possible data sources
    - » Data and calculations from Sections 5 and 6 of Form R

ENERGY RECOVERY

- Sections 8.2 and 8.3: On-site and off-site energy recovery
  - Things to remember about energy recovery
    - » Combustion unit (e.g., industrial furnace, industrial kiln, or boiler) must be integrated into an energy recovery system
    - » Section 313 chemical must have significant heating value (e.g., 5,000 BTU/lb.)
    - » Section 313 chemicals that are, or are contained in, commercially available fuels should not be reported as combusted for energy recovery

ENERGY RECOVERY

- Section 8.2: On-site energy recovery
  - Quantity of Section 313 chemical used for energy recovery on-site
    - » Quantity *actually* combusted in the energy recovery unit - *not* the quantity entering the unit
  - A code reported in Section 7B indicates that Section 8.2 should be calculated
  - Possible data sources
    - » Engineering process specifications
    - » Mass balance calculations
    - » Best engineering judgement

ENERGY RECOVERY

- Section 8.3: Off-site energy recovery
  - Quantity of Section 313 chemical that is *transferred* off-site for energy recovery
    - » Includes total quantity of Section 313 chemical *transferred* off-site for energy recovery purposes - *not* quantity actually combusted off-site
  - Possible data sources
    - » Section 6.2 (codes M56 and M92) of Form R
    - » Receipts from off-site facilities
    - » RCRA hazardous waste manifests

RECYCLING

- Section 8.4: On-site recycling
  - Quantity of Section 313 chemical recycled on-site
    - » Includes total quantity of Section 313 chemical *recovered* from the recycling process and made available for further use
  - Possible data sources
    - » Engineering process specifications
    - » Mass balance calculations
  - A code reported in Section 7C indicates that Section 8.4 should be calculated

11

RECYCLING

- Section 8.5: Off-site recycling
  - Quantity of Section 313 chemical *transferred* off-site for recycling
    - » Includes total quantity of Section 313 chemical *transferred* to off-site locations for recycling
  - Possible data sources
    - » Section 6.2 of Form R (only for recycling destinations)
    - » Receipts from off-site recycling facilities
    - » RCRA hazardous waste manifests
    - » RCRA Hazardous Waste Report (BRS)

12

WASTE TREATMENT

- Section 8.6: Quantity treated on-site
  - Quantity of Section 313 chemical *treated* on-site
    - » Includes all quantities of Section 313 chemical destroyed
  - Possible data sources
    - » Calculations used to complete Section 7A of Form R

13

WASTE TREATMENT

- Section 8.7: Off-site waste treatment
  - The amount of Section 313 chemical that is *transferred* off-site for waste treatment
    - » Includes all quantities of Section 313 chemical *transferred* to off-site facilities for waste treatment
  - Possible data sources
    - » Sections 6.1.A.1 and 6.2.A (i.e., off-site transfers for waste treatment)
      - Important: Assume all Section 6.1.A.1 quantities are treated, except metals and metal compounds

14

REMEDIAL, CATASTROPHIC, OR ONE-TIME RELEASES

- Section 8.8: Remedial, catastrophic, or one-time releases
  - Quantity of Section 313 chemical released into the environment or transferred off-site as a result of:
    - » Remediation
    - » Catastrophic events (e.g., earthquake, hurricane, fire, floods)
    - » One-time events not associated with production processes (e.g., pipe rupture due to unexpected weather)
  - Does not include Section 313 chemicals treated, recovered, or recycled on-site.
  - Excludes quantities in Sections 8.1 through 8.7

15

SOURCE REDUCTION AND OTHER WASTE MANAGEMENT ACTIVITIES

- Important points regarding Sections 8.1 through 8.8
  - Sum of the quantities in Sections 8.1 through 8.7 equals the total quantity of the Section 313 chemical "entering any waste stream (or otherwise released into the environment) prior to recycling, treatment, or disposal." (PPA section 6607(b)(1))
  - Quantities reported in Sections 8.1 through 8.7 are exclusive of each other
  - Sum of Sections 8.1 through 8.7 is mutually exclusive of the quantity in Section 8.8

16

PRODUCTION RATIO OR ACTIVITY INDEX

- Section 8.9: Production ratio or activity index
  - A ratio of production or activity involving the Section 313 chemical in the reporting year to production or activity in the previous year
  - Allows quantities of the Section 313 chemical reported in Sections 8.1 through 8.7 in the current year to be compared to quantities reported in the prior year
  - Production ratio or activity index is determined by dividing the level of production (or activity) in the current year by the level of production (or activity) in the prior year
  - Select methodology least likely to be affected by potential source reduction activities

17

SOURCE REDUCTION ACTIVITIES

- Section 8.10
  - Source reduction practices used with respect to the Section 313 chemical at the facility and the methods used to identify those activities
  - This section includes only those source reduction activities implemented during the reporting year
    - » Only include activities that reduce or eliminate quantities reported in Sections 8.1 through 8.7

18

OPTIONAL INFORMATION

- Section 8.11
  - Facility should indicate whether additional optional information on source reduction, recycling, or pollution control activities is included with the report
  - A one-page summary is encouraged
  - Facility can provide information on previous years' activities
  - EPA and others use this information for granting awards and recognition to companies and employees

PERSISTENT, BIOACCUMULATIVE, TOXIC (PBT) CHEMICAL RULE

The PBT Rule

- PBT rule published in the *Federal Register* on October 29, 1999 (64 FR 58666)
- Rule applies beginning RY 2000, reports due 7/1/01
- Rule adds new chemicals to the TRI list
- Rule creates a new class of chemicals (PBT chemicals) with lower thresholds and special requirements

PBT CHEMICALS AND THRESHOLDS

- 100 lb/yr - Aldrin, Methoxychlor, Pendimethalin, Polycyclic aromatic comp., Tetrabromobisphenol A, Trifluralin
- 10 lb/yr - Chlordane, Heptachlor, Mercury, Toxaphene, Isodrin, PCBs, Benzo(g,h,i)perylene, Hexachlorobenzene, Mercury compounds, Octachlorostyrene, Pentachlorobenzene
- 0.1 gr/yr - Dioxin and dioxin-like compounds

PBT CHEMICALS AND EXEMPTIONS

- The *de minimis* exemption has been eliminated for PBT chemicals except for purposes of supplier notification
  - Users of mixtures must use best readily available knowledge to determine PBT chemicals present and concentrations
- No other EPCRA section 313 regulatory exemptions were modified or restricted by the PBT rule

PBT THRESHOLDS

- The combination of the low thresholds and no *de minimis* exemption means that a thorough review of chemical activities may be needed to achieve compliance with the PBT rule
  - Impurities need to be evaluated
  - Chemicals used in low volumes need to be considered

5

PBT CHEMICALS

Eighteen chemicals and chemical categories are regulated by the PBT rule:

- Pesticides - Aldrin, Chlordane, Heptachlor, Isodrin, Methoxychlor, Pendimethalin, Toxaphene, and Trifluralin
- Aromatics - Benzo(g,h,i)perylene, Polycyclic aromatic compounds (PAC) category, Dioxin and dioxin-like compounds category, Hexachlorobenzene, Octachlorostyrene, Pentachlorobenzene, Polychlorinated biphenyl (PCB), and Tetrabromobisphenol A (TBBPA)
- Metals - Mercury and Mercury compounds

6

PBT CHEMICALS

- The following are NOT on the EPCRA Section 313 PBT list for RY 2000:
  - Lead
  - Lead compounds
  - Cobalt
  - Cobalt compounds
  - Dicofol (pesticide)
  - Vanadium (except in alloy)
  - Vanadium compounds

POLYCYCLIC AROMATIC COMPOUNDS

- 3-Methylchloanthrene and Benzo(j,k)fluorene (fluoranthene) are being added as members of the PAC category
- All members (new and old) of the newly expanded PAC category are PBT chemicals
- Benzo(g,h,I)perylene is an individually listed polycyclic aromatic hydrocarbon (PAH) that is a PBT chemical
- PACs are found in coal, fuel oil and other petroleum products
- For more information see "Locating And Estimating Air Emissions From Sources Of Polycyclic Organic Matter," (http://www.epa.gov/ttn/chief/) & "Guidance for Reporting Toxic Chemicals within the Polycyclic Aromatic Compounds Category" (http://www.epa.gov/tri/)

DIOXIN AND DIOXIN-LIKE COMPOUNDS

- Dioxin and dioxin-like compounds category qualifier reads:

  "Manufacturing; and the processing or otherwise use of dioxin and dioxin-like compounds if the dioxin and dioxin-like compounds are present as contaminants in a chemical and if they were created during the manufacturing of that chemical."

- Category includes polychlorinated dioxins and furans with chlorine in at least the 2, 3, 7, and 8 positions

DIOXIN AND DIOXIN-LIKE COMPOUNDS

- Dioxin and dioxin-like compounds may be formed as byproducts when chlorine-containing materials are involved in combustion or other high-temperature processes
- Emission factors are available:
  - "Locating And Estimating Air Emissions From Sources Of Dioxins And Furans" (http://www.epa.gov/ttn/chief/)
  - "The Inventory of Sources of Dioxin in the United States" (http://www.epa.gov/nceawww1/diox.htm)
- Dioxin and dioxin-like compounds may also be manufactured during the manufacture of chemicals involving chlorine and remain with the manufactured chemicals as impurities

MERCURY

- Mercury compounds may be present in mined ores, petroleum products, and coal
  - Combustion of fuels represents an otherwise use of mercury compounds and manufacture of mercury
- Mercury in switches and fluorescent lamps may be article exempt
- Mercury also used in a wide variety of processes
- For more information see "Locating And Estimating Air Emissions From Sources Of Mercury and Mercury Compounds," 12/97 (EPA-454/R-97-012) is available at http://www.epa.gov/ttn/chief/

11

VANADIUM

- PBT rule modifies the listing for vanadium: Qualifier now reads "except when contained in an alloy"
  - "Alloy" does not include slags, crystalline structures, ores
- PBT rule adds vanadium compounds to the TRI list
- Neither vanadium (except when in an alloy) nor vanadium compounds are on PBT list for RY 2000
- Vanadium oxide is produced during combustion of fuels
- Vanadium is used to produce various alloys
  - Prior to becoming part of the alloy, vanadium is a listed chemical

12

PBT REPORTING

- For PBT chemicals, EPA is requiring more precise reporting:
  - EPA has prohibited use of Form A's
  - EPA has prohibited use of range codes for reporting releases and waste management quantities
- EPA will be modifying the Form R or developing a new form for PBT chemicals

DATA PRECISION

- Report releases and other waste management quantities >0.1 lb. at a level of precision supported by the data and estimation technique used
  - Can be more precise than whole numbers and two significant digits
  - If 157.243 pounds calculated, report 157.2, 157, 160, or 200 pounds depending on accuracy/quality of data source(s)
- Similar recommendation for dioxin and dioxin-like compounds but limit is lower: 100 micrograms (equals 0.0001 grams)
  - If 1.57243 grams calculated, report 1.5724, 1.572, 1.57,1.6, or 2 grams depending on accuracy/quality of data source(s)

FORM R /FORM A SUBMISSION: GETTING IT RIGHT!

1

WHY IT'S IMPORTANT TO GET IT RIGHT

- Using TRI Data
  - EPA is required to make non-trade secret data available to the public through an on-line database (operated by National Library of Medicine)
  - Data are widely available on Internet
  - Data are available in other forms (reports, CD-ROM)
  - All states receive data; some will make it available electronically

EPCRA SECTION 313 ENFORCEMENT

- Current enforcement trends
  - Shift from simply identifying non-reporting facilities to facilities submitting poor quality data
  - Focus on multi-media inspections (i.e., across Agency programs)
  - Assign pollution prevention-related supplemental environmental projects (SEPs)
    - » In FY98, 36% of EPCRA penalty actions included a SEP. Most SEPs of any regulatory program.

EPCRA SECTION 313 ENFORCEMENT

- Koch Refining ($585,000)
  - Data quality violations
- Sinclair Oil Corp. ($201,968 + $350,000 SEP)
  - Non-reporting and data quality errors on emissions
- Coca-Cola Bottling Company ($14,838 + $44,000 equipment to LEPC)
  - EPCRA Sections 311, 312 and 313 violations

EPCRA SECTION 326: CIVIL ACTIONS

- Any person may bring civil action on their own behalf against a private-sector facility owner or operator for:
  - Failure to submit emergency follow-up notices under Section 304
  - Failure to submit an MSDS or a list of MSDS chemicals
  - Failure to complete or submit Tier I/II inventories
  - Failure to complete or submit Form Rs or Form As

COMMONLY MADE ERRORS

- Threshold determination errors
- Completion errors
- Release estimation errors
- Off-site transfers reporting errors
- Other waste management and source reduction errors
- Federal facility name and/or parent company name errors

THRESHOLD DETERMINATIONS

- Helpful hints for conducting accurate threshold determinations
  - Apply chemicals to correct threshold activity
  - Avoid missing a Section 313 chemical by considering: all avenues a chemical may enter a facility; chemical qualifiers; chemical synonyms; or on-site manufacturing
  - Consider quantities of Section 313 chemicals in mixtures or other trade name products
  - Recognize the limitations of eligibility for exemptions
- Results of incorrect threshold determinations
  - No form is submitted when one is required
  - Federal facility does not meet requirements of EO 12856

7

FORM COMPLETION CHECKLIST

- Helpful hints for completing the Form R/Form A
  - Complete all required sections of a current, valid form
  - Verify trade secret information (if applicable)
  - Correctly identify the Section 313 chemical using the correct CAS number and correct listed TRI name
  - Use the NA indicator for data elements that are not relevant
  - Indicate the correct reporting year
  - Verify latitude/longitude coordinates
  - Clearly identify revisions or duplicate submissions
  - Sign hardcopy of forms or certification letters for electronic submissions

8

RELEASE ESTIMATES

- Helpful hints for accurate release estimates
  - Differentiate fugitive from stack emissions
  - Zero air emissions for VOCs are unlikely
  - Always use your best available information
  - Estimate the quantity of Section 313 chemical, not the entire waste stream
  - Check your math
  - Document your work!
- Result of release estimation errors
  - Suspect release estimates

SUBMITTING REVISIONS

- Revisions can be made electronically or in hardcopy
  - Hardcopy revisions must be made in blue or black ink on a copy of the form originally submitted
  - Magnetic media revisions must be accompanied by a newly signed cover letter
- For revisions made for reporting year 1991 or later, mark an "X" in the space marked "Enter "X" here if this is a revision" on page 1
- Provide a new original signature and date for each revision
- Send to EPA's EPCRA Reporting Center and to the appropriate state agency

ADDITIONAL INFORMATION ABOUT TRI

- EPA Regional and State TRI Contacts
  - Check the *Form R and Instructions* booklet
- RCRA, Superfund & EPCRA Hotline

  (800) 424-9346 or (703) 412-9810 (DC Metro area)
  - Regulatory assistance
  - Information on availability of EPA publications
  - Information on EPA's electronic resources

11

EPA ELECTRONIC MAILING LISTS (LISTSERVER)

- To subscribe to an electronic mailing list (listserver), send e-mail to: listserver@unixmail.rtpnc.epa.gov.
- Subject line: SUBSCRIBE TO LISTSERVERS
- Text: SUBSCRIBE <list name> <first name> <last name>

  SUBSCRIBE EPA-WASTE JOHN SMITH
- Some mailing lists are:
  - EPA-TRI2: Toxic Release Inventory Federal Registers
  - HOTLINE_OSWER: RCRA, Superfund & EPCRA Monthly Hotline Report and Updates
  - EPA-PRESS: EPA press releases
  - EPA-MEETING: EPA meeting notification
  - OPPT-NEWSBREAK: OPPT Library daily news service

12

DOCUMENT DISTRIBUTION CENTERS

RCRA, Superfund & EPCRA Hotline (800) 424-9346 (703) 412-9810 (DC Metro area) Fax (703) 412-3333 http://www.epa.gov/epaoswer/hotline	National Center for Environmental Publications and Information (NCEPI) 1-800-490-9198 http://www.epa.gov/ncepihom/index.html
U.S. Government Printing Office (GPO) (202) 512-1800 Fax: (202) 512-2250 http://www.gpo.gov	National Technical Information Service (NTIS) (800) 553-6847 (703) 605-6000 (DC Metro area) http://www.ntis.gov

ONLINE ACCESS TO TRI DATA

- Right-to-Know Network (RTK NET)
  - Modem: (202) 234-8570; Information: (202) 234-8494; Internet: http://www.rtk.net
- ENVIROFACTS Database Internet Site
  http://www.epa.gov/enviro/html/ef_home.html
- Environmental Defense Fund
  http://www.scorecard.org
- TOXNET (National Library of Medicine)
  - Modem: (301) 946-1184; Information: (301) 496-6531; Internet: http://www.nlm.nih.gov
  - nominal access charge

PUBLIC ACCESS TO TRI

- TRI User Support Service: (202) 260-1531
- TRI Reports (EPCRA Hotline and EPA TRI Web Site)
  - TRI Public Data Release Annual Report
  - TRI Public Data Release State Fact Sheets
- TRI CD-ROM (GPO/NTIS)
- State Data Diskettes (GPO)

15

TRI HOMEPAGE

- EPA Toxic Release Inventory: Community Right to Know Homepage (http://www.epa.gov/tri)
  - General information on the TRI program and program development
  - Information on how to use the TRI data
  - Access to TRI data (e.g., public data release, state fact sheets, links to TRI databases)
  - Guidance documents for newly added industries
  - *EPCRA Section 313 Questions and Answers Document* (Revised 1998 version)
  - Automated TRI Reporting Software (ATRS)

16

SECTION 313 GENERAL GUIDANCE

- *Toxic Chemical Release Inventory Reporting Form R and Instructions*
- *EPCRA Section 313 Questions and Answers (Revised 1998 Version) EPA745-B-98-004*
- *Common Synonyms*
- *Consolidated List of Chemicals Subject to Reporting Under the Act (Title III List of Lists)*
  - **Most recent version on Internet:**

http://www.epa.gov/tri/guidance.htm

17

SECTION 313 TECHNICAL GUIDANCE

- **Industry-Specific Technical Guidance Documents such as:**
  - *Estimating Chemical Releases From Electroplating Operations*
  - *Guidance for New Industries*
- **Chemical-Specific Guidance Documents such as:**
  - *Guidance for Reporting Sulfuric Acid*
  - *List of Toxic Chemicals within the Glycol Ethers Category*
- *Estimating Releases and Waste Treatment Efficiencies For the Toxic Chemical Release Inventory Form*

18

SECTION 313 TECHNICAL GUIDANCE

- Technology Transfer Network (TTN)
  - Help Desk (919) 541-5384
  - Internet: http://www.epa.gov/ttn/
    - *Compilation of Air Pollutant Emission Factors* (AP-42)
    - Water 9/ChemDat 9 programs
    - TANKS program

19

POLLUTION PREVENTION INFORMATION

- OPPT Pollution Prevention (P2) Internet Site
  - http://www.epa.gov/opptintr/p2home/index.html
- Enviroene Information Network
  - BBS modem (703) 908-2092; User support (703) 908-2007
  - http://es.epa.gov/index.html
- Pollution Prevention Information Clearinghouse (PPIC)
  - (202) 260-1023

20