

The #1 solution for Environmental Health & Safety Professionals.

Pharmaceutical Waste Management

Steve Todisco, HEM, CHMM
Triumvirate Environmental

The logo for Triumvirate Environmental, featuring a stylized white triangle with a vertical line and a horizontal line intersecting at the center, set against a green background.

TRIUMVIRATE
ENVIRONMENTAL

Agenda

- A Brief history of RCRA and Healthcare
- RCRA as it applies to Healthcare
- Generator Size and State
- Formulary
- Returns Program
- Satellite Accumulation
- Waste Streams
- Containers
- Education
- Coding Systems
- Key Inspection Items



A brief History of RCRA and Healthcare

- * **Pre RCRA Waste Disposal**

- * Where was the “Hazardous” waste going?
- * Regulations?
- * U.S. Society of Civil Engineers
- * U.S. Public Health Service

- * **1965 brought about Solid Waste Disposal Act**

- * Amendment in 1976 became known as RCRA
- * Guidelines and definitions of waste are now found
- * Set up a system for proper disposal of waste

RCRA as it applies to Healthcare

- * **Waste Characterization / Waste Determination**
- * **Generator Status**
- * **Training**
- * **SAA Management and Inspection**
- * **MAA Management and Inspection**
- * **Shipping**
 - * **Land Disposal Restriction**
 - * **Manifest / Waste Codes / P-Listed Waste**

What are folks doing?

- 3 - 5 years ago

- I. Questioning Regulation / Does this actually apply to me?
- II. Worrying about Large / Small Quantity generator status
- III. Waiting for others to start
- IV. Seeking insight from Federal / State / and Local regulators

- 2 - 3 years ago

- I. Reviewing if they actually have hazardous waste relating to medication waste
- II. Still waiting for others to get started
- III. Began evaluating existing “formulary”

What are folks doing?

- 1 - 2 years ago
 - I. Digging in on their “formulary”
 - II. Learning about how their “reverse distribution” program really works
 - III. Selecting SAA’s
 - IV. Training nurses, Pharmacy, Environmental
- Past 6 months - Today
 - I. Revising their formulary / Reacting to exemptions and new requirements
 - II. Purchasing less
 - III. More Training / New Policies and Procedures
 - IV. Infection Control Issues

Pharmaceutical Waste Collection



Investigations of Endocrine Disruption in Aquatic Systems Associated with the National Water Quality Assessment (NAWQA) Program

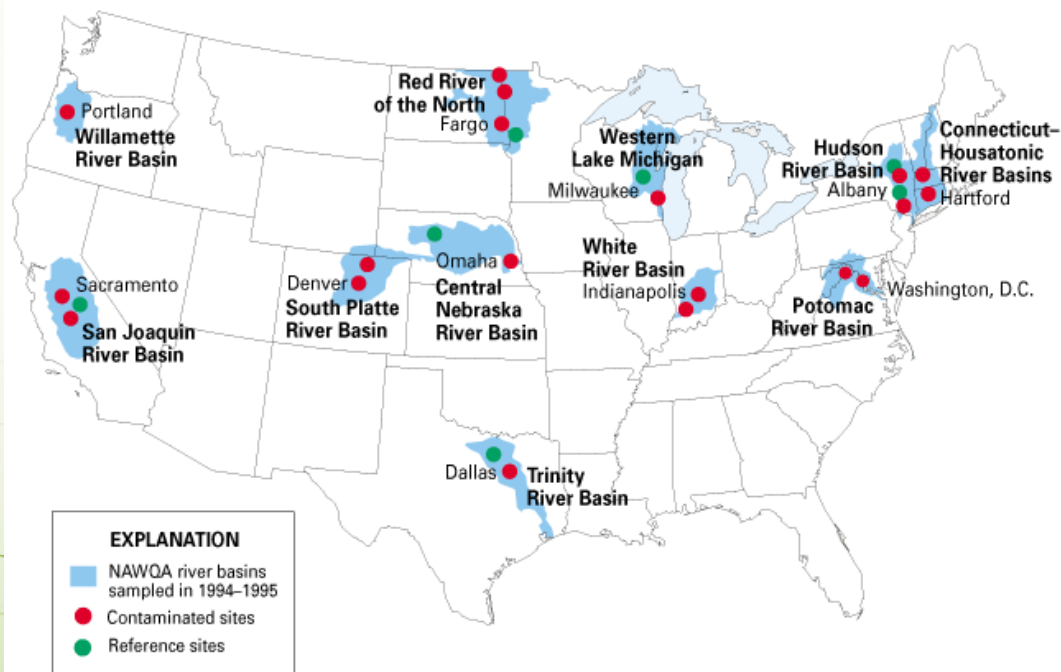


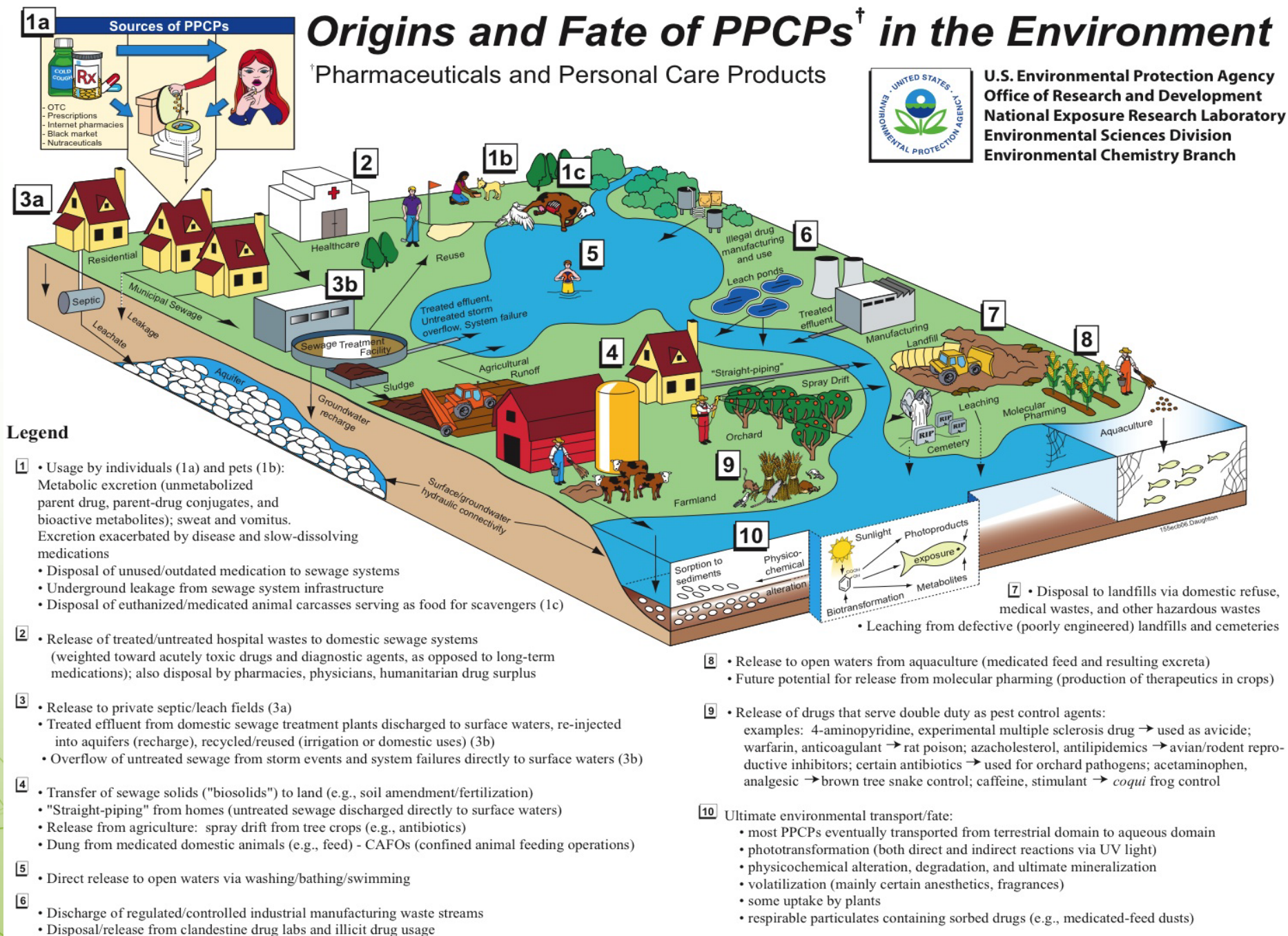
Figure 1. Sampling site locations in basins for national reconnaissance investigation, 1994. Major cities within basins are identified for reference.

Origins and Fate of PPCPs[†] in the Environment

[†]Pharmaceuticals and Personal Care Products



U.S. Environmental Protection Agency
Office of Research and Development
National Exposure Research Laboratory
Environmental Sciences Division
Environmental Chemistry Branch



Generator State and their size

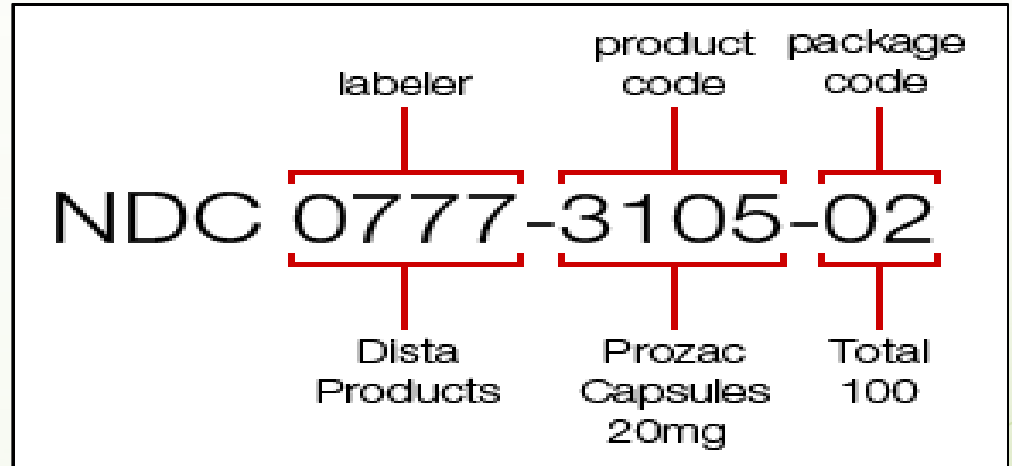
1. Large Quantity Generators
2. Small Quantity Generators
3. Conditionally Exempt SQG's
4. State-specific exceptions & exclusions



Formulary Review / Waste Characterization

- * Identification Phase

- * On - Formulary
- * Off – Formulary
- * Special Items



National Drug Code (NDC)

Reverse Distribution Review

1. Critical understanding of existing program
2. Reduction of liability in existing program
3. Additional fact-finding step



Credit or No Credit?



Satellite Accumulation Areas

1. Identifying SAA Locations
2. Analyzing work flow
3. Ease of use
4. One bucket program

Hazardous Waste Satellite Accumulation Area

1. The waste area must be identified by a sign

2. The waste container **must remain closed** except when waste is being added

3. The waste container must be labelled with approved hazardous waste label

HAZARDOUS WASTE
Satellite Accumulation Area

HAZARDOUS WASTE
Pharmaceutical Waste
DO NOT REUSE OR DISPOSE OF THIS CONTAINER
Date Full: _____

The Following Waste Products Must Be Collected At This Location:

All Measles Virus Vaccine (Attenuvax + MMR Vaccine)	D009
Cyanide Antidote Kit	D009
All Hepatitis B Vaccine, and Globulins	D009
FML Ophthalmic Drops (Phenyl Mercuric Acetate)	D009
Phenylephrine Shark Liver Oil (Formulation R - Preparation H)	D009
Gentimycin Eye Drops (Eye Drops)	D009
Ispto Tears (Eye Drops)	D009
All Mumps Vaccines	D009
Neosporin ophthalmic ointment and solutions	D009
Vaqa Vials	D009

When your waste bin is full please call for a pickup and bin replacement:
Environmental Services
X 4487

4. All full chemical waste bins must be dated and removed from the SAA within 3 days.

5. The Pharmacy waste container must be clearly segregated from the pharmacy's stock materials

Pharmaceutical Waste Streams

- * Pharmacy
- * Nursing Units
- * High Risk Areas
 - * OR, ER, PACU, ICU
- * Off-Site Clinics
- * Nursing Homes
- * Animal Facilities

****P-Listed**

D-Listed

U-Listed

DEA Regulated Material

Chemotherapy

Waste Container Choices

- * How do I choose a waste container that is most appropriate for my program?
 - * Size
 - * Location
 - * Simplicity
 - * Color
 - * Access to the opening



Employee Education

- * **What are my training requirements?**

- * **Small Quantity Generators**

- * **Large Quantity Generators**

- * **(RCRA)**

- * **Pharmacy**

- * **Environmental Services**

- * **Nursing**



Educational Bonuses / Coding Systems

- * **Brainstorm how to best educate and keep staff organized and involved.**
 - * **Automated Pharmacy machines (Pyxis, Omnicell)**
 - * **Color Coded marking**
 - * **Bar Coding Systems**
 - * **Visual Signage and Labels**



Key Inspection Items

- ☐ Have you characterized your formulary / and other important lists?
- ☐ Have you completed a waste determination for all of it?
- ☐ Do you utilize Reverse Distribution and is it being used correctly?
- ☐ Have you developed specific waste streams? Are these streams chemically compatible?
- ☐ Do your waste containers / SAA's meet compliance?
 - ☐ Do your labels and signage meet regulatory requirements?
- ☐ Have you determined who needs training in their organization?
- ☐ Have you performed training and tracked who was trained?
- ☐ Are you actually in the collection phase?
- ☐ Are you performing inspections of your SAA's?



Key Inspection Items

- ☐ Do you have a mechanism for transporting from SAA to MAA?
- ☐ Are you properly storing their pharmaceutical waste appropriately in the MAA?
- ☐ Are you following your shipment timelines as applicable to your generator status?
- ☐ Are you managing their P-Listed waste according to your generator status?
- ☐ Have you addressed all areas of the hospital?
- ☐ Are you completing your MAA inspection?
- ☐ Have you completed and are you following your own internal policies and procedures?
- ☐ Do you have a method of learning new information? Exceptions / Regulations?
- ☐ Are you up to date with all of their training / training records?



Thank You

- * **Steve Todisco, HEM, CHMM**
 - * **Senior Healthcare Account Manager and Pharmaceutical Program Director**
 - * **Triumvirate Environmental Inc.**
 - * **Stodisco@triumvirate.com**
 - * **Phone: 339-226-0524**

