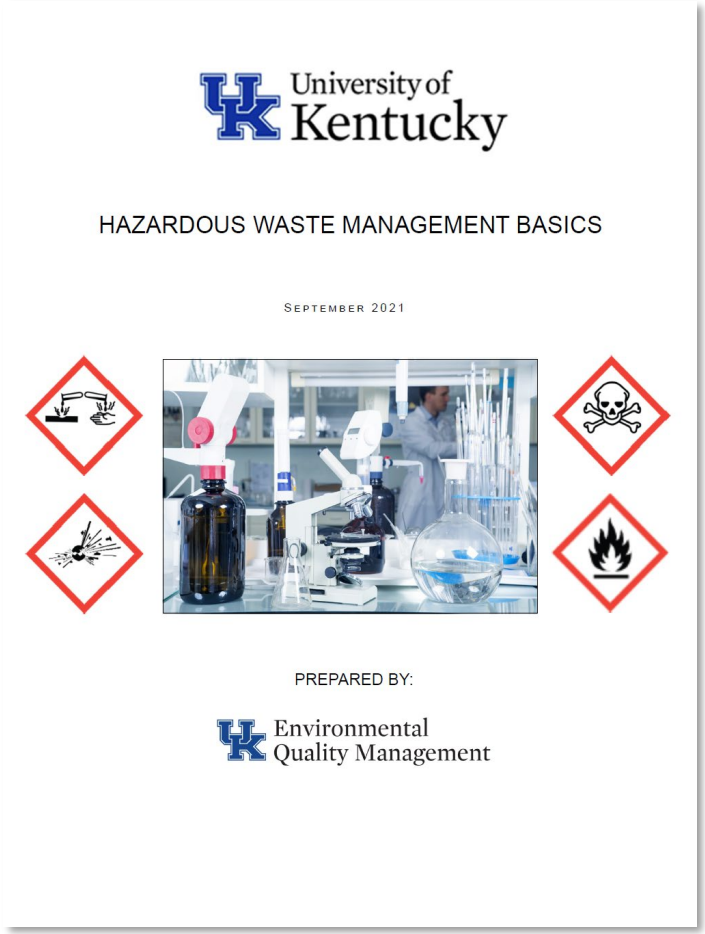
HAZARDOUS WASTE MANAGEMENT AT THE UNIVERSITY OF KENTUCKY

HAZARDOUS WASTE TRAINING PROVIDED BY

Environmental
Quality Management

HAZARDOUS WASTE MANAGEMENT BASICS



Environmental Management

HAZARDOUS WASTE MANAGEMENT

Topics

1. Regulatory Foundation
2. Waste Determination
3. Waste Labeling & Hazard Warnings
4. Waste Accumulation Management
5. Waste Pick-Up (E-Trax)
6. Emergency Planning
7. Training

Objective

To learn the safe and compliant requirements for identifying, labeling, and managing hazardous waste originating from laboratories and other areas at the University of Kentucky.

☼ KEY POINT ☼

The University supports and maintains a strong commitment to the safety and health of faculty, staff and students and to the protection of the environment – ensuring your understanding of hazardous waste management requirements is a vital component of this commitment.

TOPICS

1. Regulatory Foundation
2. Waste Determination
3. Waste Labeling & Hazard Warnings
4. Waste Accumulation Management
5. Waste Pick-Up (E-Trax)
6. Emergency Planning
7. Training

1. REGULATORY FOUNDATION

The University's Administrative Regulation (AR) 6:3 has authorized the Environmental Health and Safety Division to coordinate the University's environmental health and safety programs and to monitor the University's compliance with applicable standards and policies.

The EPA has delegated the management of hazardous waste in Kentucky to the Kentucky Division of Waste Management (40 CFR 260-282).

Hazardous waste management practices are regulated by the **U.S. Environmental Protection Agency** (EPA) through a federal law referred to as the Resource Conservation and Recovery Act or "**RCRA**".

TOPICS

1. Regulatory Foundation
2. Waste Determination
3. Waste Labeling & Hazard Warnings
4. Waste Accumulation Management
5. Waste Pick-Up (E-Trax)
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2. WASTE DETERMINATION

GENERATOR

The generator is the entity that creates the waste and incurs most of the liability associated with waste. Therefore, UK as an entity is the generator, but its employees act as agents of their employer for the purposes of waste generation.

2. WASTE DETERMINATION

*A **generator** must maintain records supporting its hazardous waste determination, including records that identify whether a solid waste is a hazardous waste. These records must comprise the generator's knowledge of the waste and support the generator's determination.*

(40 CFR 262.11(f))

2. WASTE DETERMINATION

A **generator** *must maintain records supporting its hazardous waste determination, including records that identify whether a* **solid waste** *is a hazardous waste. These records must comprise the generator's knowledge of the waste and support the generator's determination.*

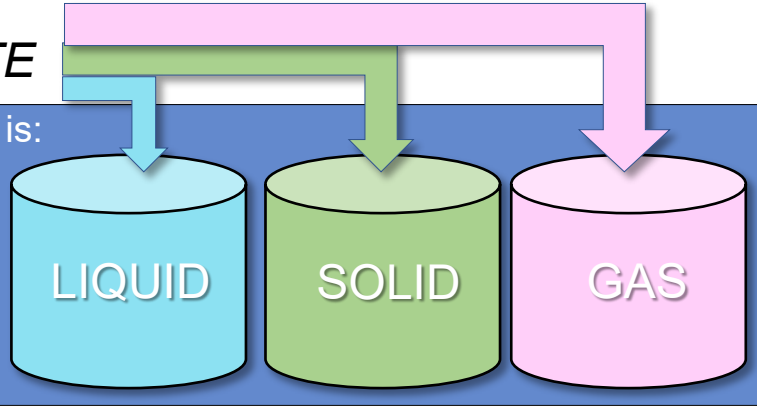
(40 CFR 262.11(f))

2. WASTE DETERMINATION

SOLID WASTE

Solid waste is a regulatory term meant to denote anything that is:

- ► Discarded,
- ► Intended to be discarded
- ► No longer useful (can not be reused)



2. WASTE DETERMINATION

*A **generator** must maintain records supporting its hazardous waste determination, including records that identify whether a **solid waste** is a **hazardous waste**. These records must comprise the generator's knowledge of the waste and support the generator's determination.*

(40 CFR 262.11(f))

2. WASTE DETERMINATION

A generator must maintain records supporting its hazardous waste determination, including records that identify whether a solid waste is a hazardous waste. These records must comprise the generator's knowledge of the waste and support the generator's determination.

(40 CFR 262.11(f))

2. WASTE DETERMINATION

HAZARDOUS WASTE

Hazardous wastes are a specific category of solid wastes, a category subject to additional regulatory control.

2. WASTE DETERMINATION

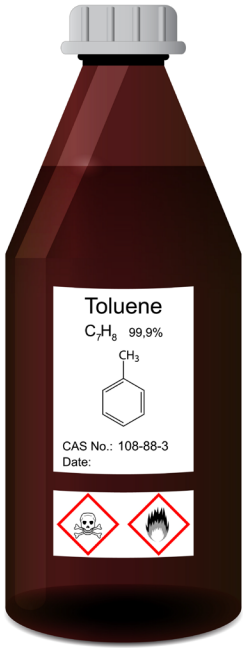
*A **generator** must maintain records supporting its hazardous waste determination, including records that identify whether a **solid waste*** is a **hazardous waste**. These records must comprise the generator's knowledge of the waste and support the **generator's (waste) determination**.*

(40 CFR 262.11(f))

2. WASTE DETERMINATION

The second question to answer: *Is it a hazardous waste?*

Is it "listed"?



P and U-listed wastes consists of *unused* commercial products only.

Example: Unused Toluene (U220)

F-listed Waste

Wastes originating from non-specific sources

Example: Toluene used as a solvent (F005)

P-listed Waste

Wastes that are acutely toxic

Example: Unused Potassium Cyanide (P098)

U-listed Waste

Wastes that are toxic

Example: Unused Acetonitrile (U003)

2. WASTE DETERMINATION

The second question to answer: *Is it a hazardous waste?*

Are its "characteristics" hazardous?

Ignitable: Liquids with a flashpoint < 60C (140F)
(Solids that spontaneously ignite …)
Example: Paint thinners (D001)

Corrosive: Liquids with a pH <2 or >12.5
Example: Acids and Bases (D002)

Reactive: Any material which is unstable…
Example: Alkali metals (D003)

Toxic: Any material which contains any of 40 constituents in excess of regulatory limits…
Example: X-ray film (D011)

2. WASTE DETERMINATION

WASTE DETERMINATION

A hazardous waste determination is a two-step process:

(1) Deciding whether a waste is a solid waste.

(2) Deciding whether the solid waste is a hazardous waste.

2. WASTE DETERMINATION

A determination regarding hazardous or non-hazardous waste is critical.

Applies at the point of generation.

☼ NOTE ☼

The EMD should be contacted if the generator is having difficulty making a waste determination.

2. WASTE DETERMINATION

The first big question to answer: *Is the material a solid waste?*

A solid waste is:
- Any material that is discarded/abandoned.
- Any material that is or is intended to be disposed.
- Any material that cannot be reused or recycled.

A solid waste is not:
- A material that is being used for its intended purpose.
- A material that is intended to be reused or recycled.

2. WASTE DETERMINATION

The second question to answer: *Is it a <u>hazardous waste</u>?*

Is it “listed”?

OR

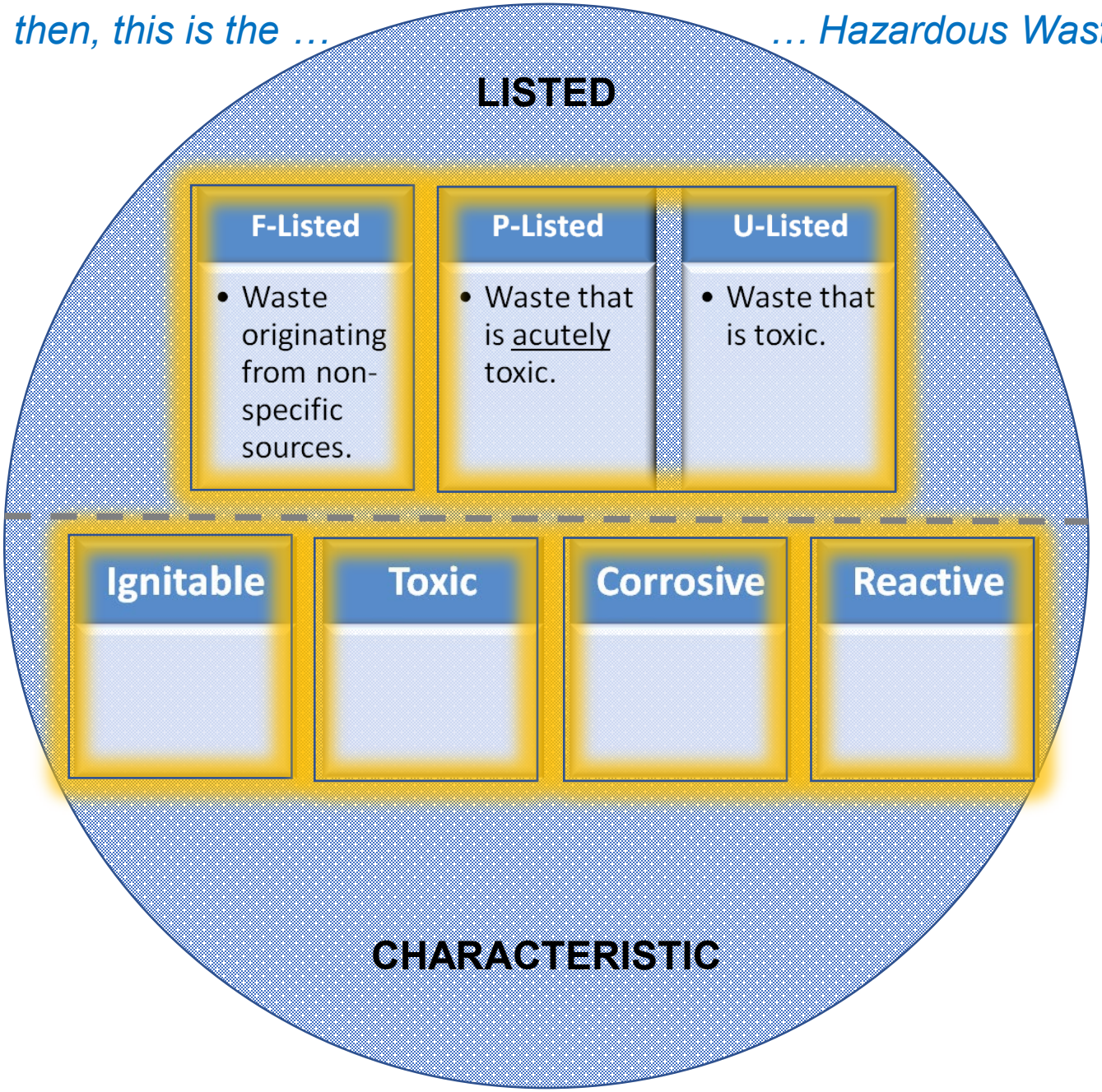
Are its “characteristics” hazardous?

2. WASTE DETERMINATION

It is important to note that failure to make a timely waste determination is the number one cited violation by state and federal inspectors!

2. WASTE DETERMINATION

In summary, then, this is the …



… Hazardous Waste Universe.

2. WASTE DETERMINATION

In summary, here are key elements of the waste determination process:

- ☑ Develop and keep a list of all wastes you generate
- ☑ Keep an updated chemical inventory – Chematix
- ☑ Review 40 CFR 261 for exclusion or exemptions (e.g. for recycling and reuse), and the F, P and U-List.
- ☑ Make a determination
- ☑ Document determinations (e.g. lab reports, SDSs, material specifications, specific knowledge)

TOPICS

1. Regulatory Foundation
2. Waste Determination
3. **Waste Labeling & Hazard Warnings**
4. Waste Accumulation Management
5. Waste Pick-Up (E-Trax)
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3. WASTE LABELING & HAZARD WARNINGS

(The *Hazardous Waste* "self-adhesive sleeve" shown above and a "hang-tag" version are available from EMD.)

A **Hazardous Waste Label**
and
Hazard Warning Information
must be indicated as
soon as hazardous waste
is introduced into the container.

The label must read: "Hazardous Waste"

The hazard(s) of the contents must be indicated.

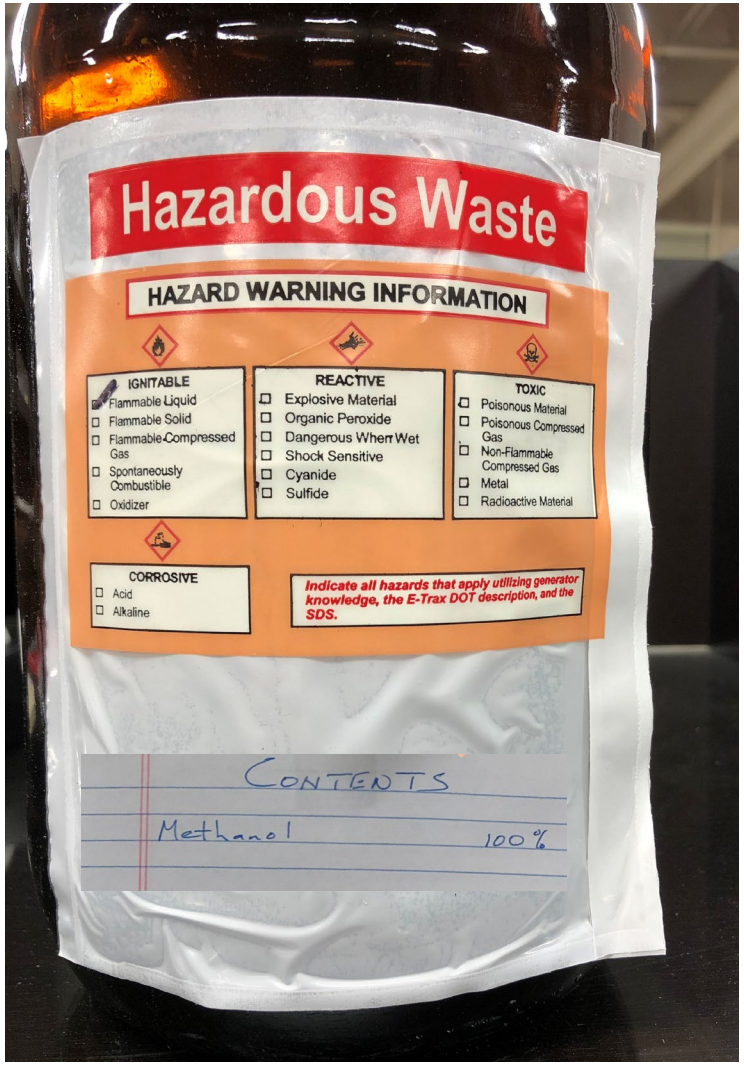
The contents must be indicated (UK required).

<u>Sources of Hazard Warning Information:</u>

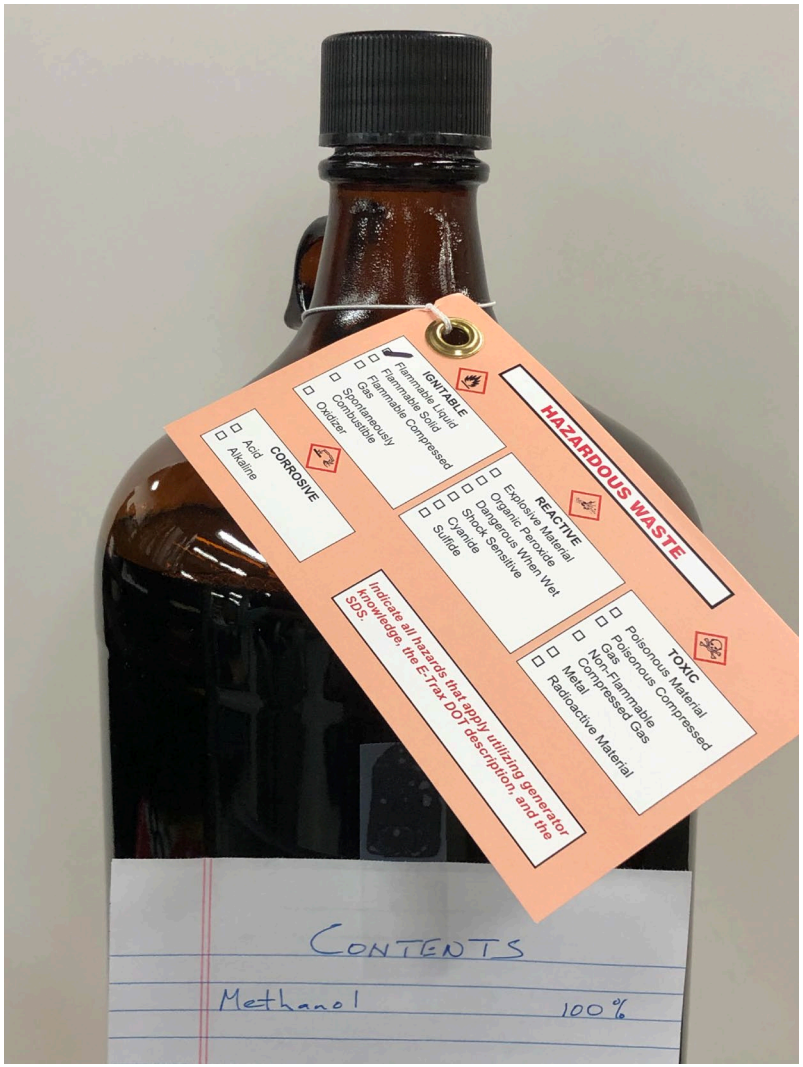
- ❑ Utilizing generator knowledge, or
- ❑ Identifying the DOT classification through E-Trax, or
- ❑ Consulting the DOT classification in section 14 of the Safety Date Sheet.

3. WASTE LABELING & HAZARD WARNINGS

Example: "Spent Methanol"



Self-Adhesive Sleeve



Hang-Tag

3. WASTE LABELING & HAZARD WARNINGS

HAZARDOUS WASTE

IGNITABLE

- ☐ Flammable Liquid
- ☐ Flammable Solid
- ☐ Flammable Compressed Gas
- ☐ Spontaneously Combustible
- ☐ Oxidizer

REACTIVE

- ☐ Explosive Material
- ☐ Organic Peroxide
- ☐ Dangerous When Wet
- ☐ Shock Sensitive
- ☐ Cyanide
- ☐ Sulfide

TOXIC

- ☐ Poisonous Material
- ☐ Poisonous Compressed Gas
- ☐ Non-Flammable Compressed Gas
- ☐ Metal
- ☐ Radioactive Material

CORROSIVE

- ☐ Acid
- ☐ Alkaline

Indicate all hazards that apply utilizing generator knowledge, the E-Trax DOT description, and the SDS.

TOPICS

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4. WASTE ACCUMULATION MANAGEMENT

"Under the Control of the Operator"

- The operator can control access to the room in which the waste is located.
- The operator accumulates the waste in a locked cabinet
- The operator is regularly in view of the waste in the course of their job.
- The operator can control who enters the location of the waste.
- There can be more than one operator responsible for having control of the waste.

4. WASTE ACCUMULATION MANAGEMENT

Some Key Terms

- "Under the Control of the Operator"

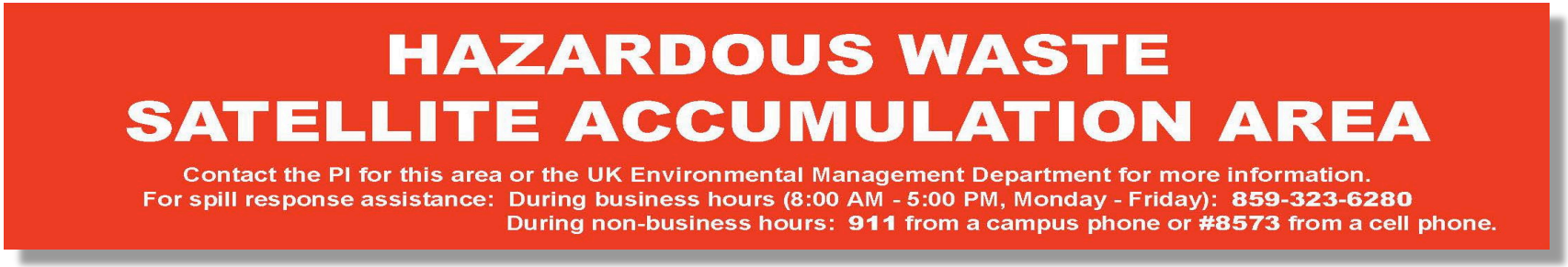
- Satellite Accumulation Area (SAA)

An SAA is an area where hazardous waste can be accumulated so long as it is under the control of the operator, at or near the point of generation and is within applicable volume restrictions.

- Central Accumulation Area (CAA)

4. WASTE ACCUMULATION MANAGEMENT

WASTE MANAGEMENT AT SATELLITE ACCUMULATION AREAS



Satellite Accumulation Areas must be clearly identified. This can be accomplished by placing signage as noted above on any of the following:

- The spill trays accumulating hazardous waste containers,
- The fume hood wall just above hazardous waste accumulation containers, or
- The hazardous waste storage cabinet.

The plastic, self-adhesive signage pictured above can be obtained from the Environmental Management Department.

4. WASTE ACCUMULATION MANAGEMENT

SAA

WASTE MANAGEMENT AT SATELLITE ACCUMULATION AREAS

- Containers must be:
  - ✓ Completely closed unless adding waste
  - ✓ Labeled with the words "***Hazardous Waste***".
  - ✓ Contents tracked and kept in the pocket-label during use.
  - ✓ Hazards determined and indicated on the label.
  - ✓ Not dated during use – date only when filled and ready for pick up.

The quantity of hazardous waste in a SAA cannot exceed:

- 55 gallons, but
- Only 1 quart of acutely toxic (P-listed)
- If limit reached – 3 days to remove to CAA

4. WASTE ACCUMULATION MANAGEMENT

WASTE MUST BE COMPATIBLE WITH THE CONTAINER AND OTHER CONSTITUENTS!

CAUTION!

When incompatible wastes are placed in the same container **violent reactions** can occur!

4. WASTE ACCUMULATION MANAGEMENT

Some Key Terms

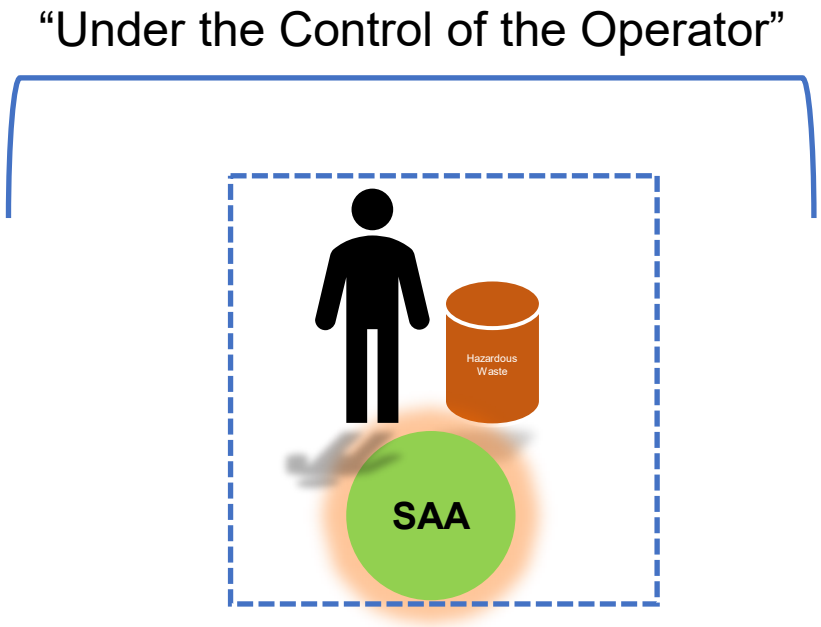
- "Under the Control of the Operator"

- Satellite Accumulation Area (SAA)

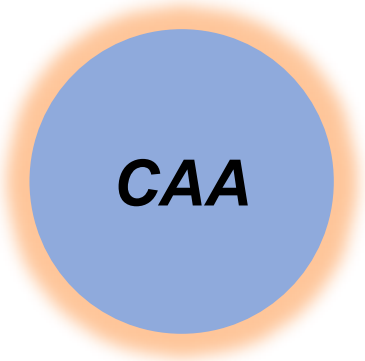
- Central Accumulation Area (CAA)

A CAA is any hazardous waste accumulation area that complies with specific regulatory requirements but is different from SAA's in that a CAA does not have to be located at the point of generation and the volumes of waste allowed to be accumulated are greater.

4. WASTE ACCUMULATION MANAGEMENT

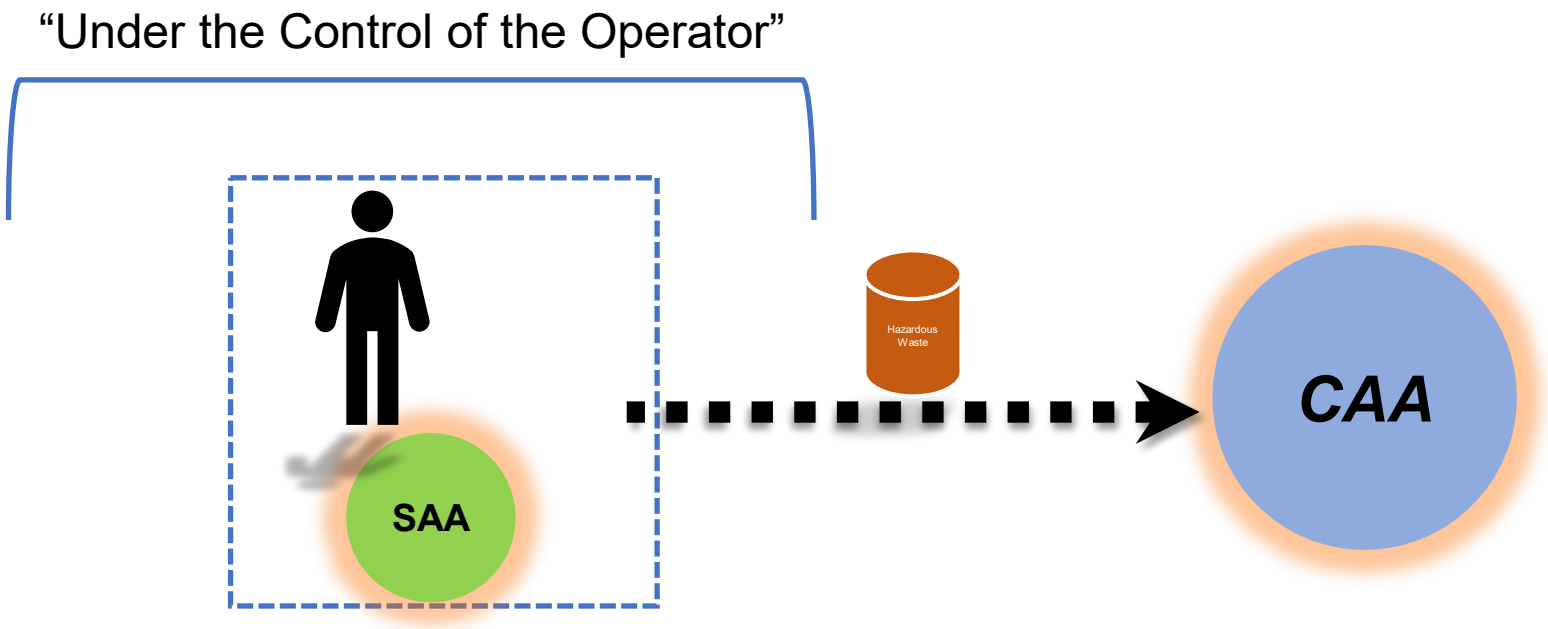


Satellite Accumulation Area (SAA)



Central Accumulation Area (CAA)

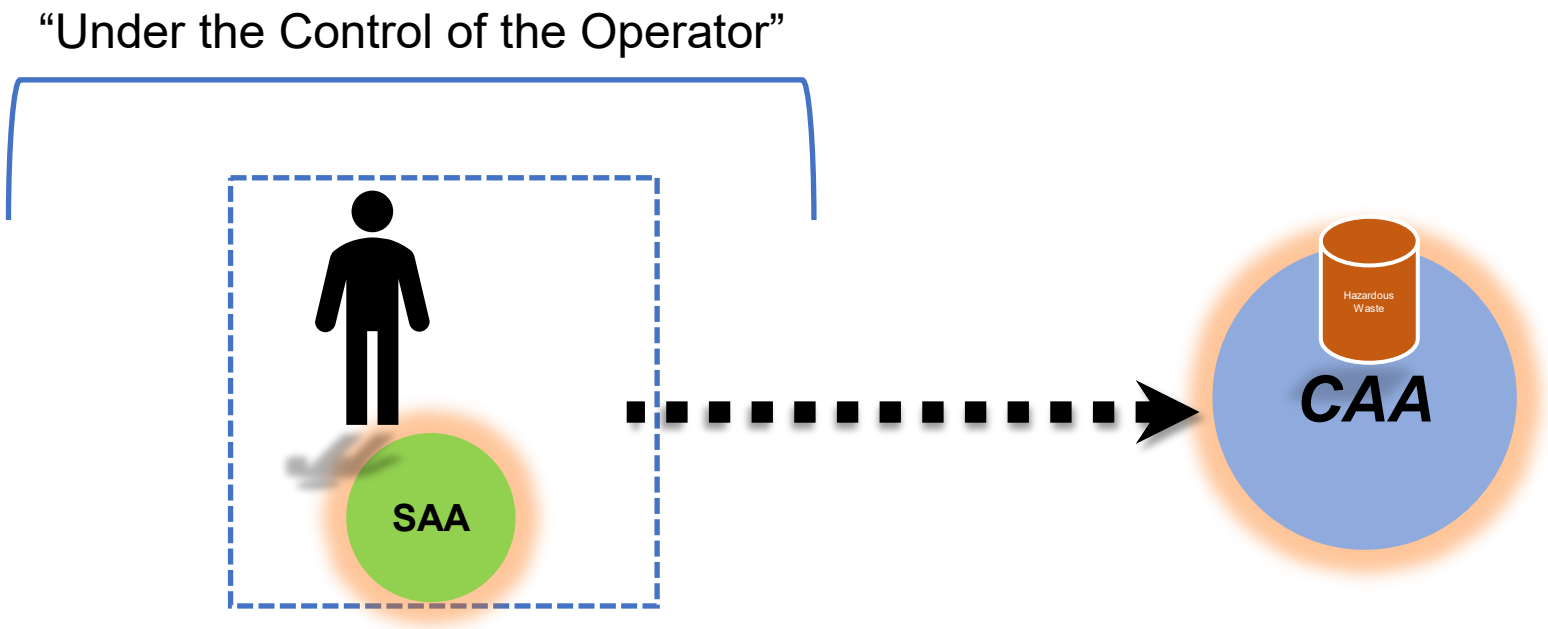
4. WASTE ACCUMULATION MANAGEMENT



Satellite Accumulation Area (SAA)

Central Accumulation Area (CAA)

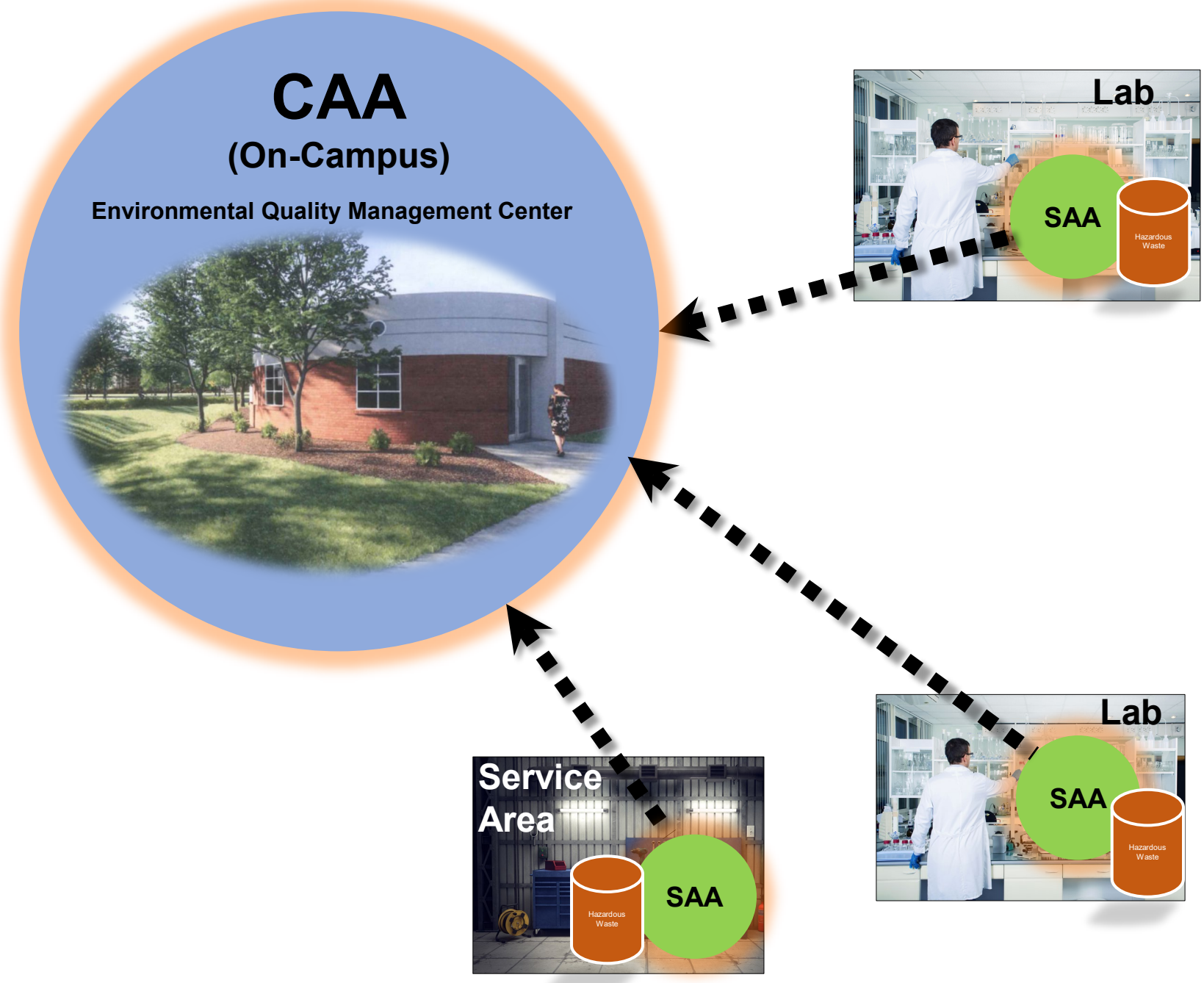
4. WASTE ACCUMULATION MANAGEMENT



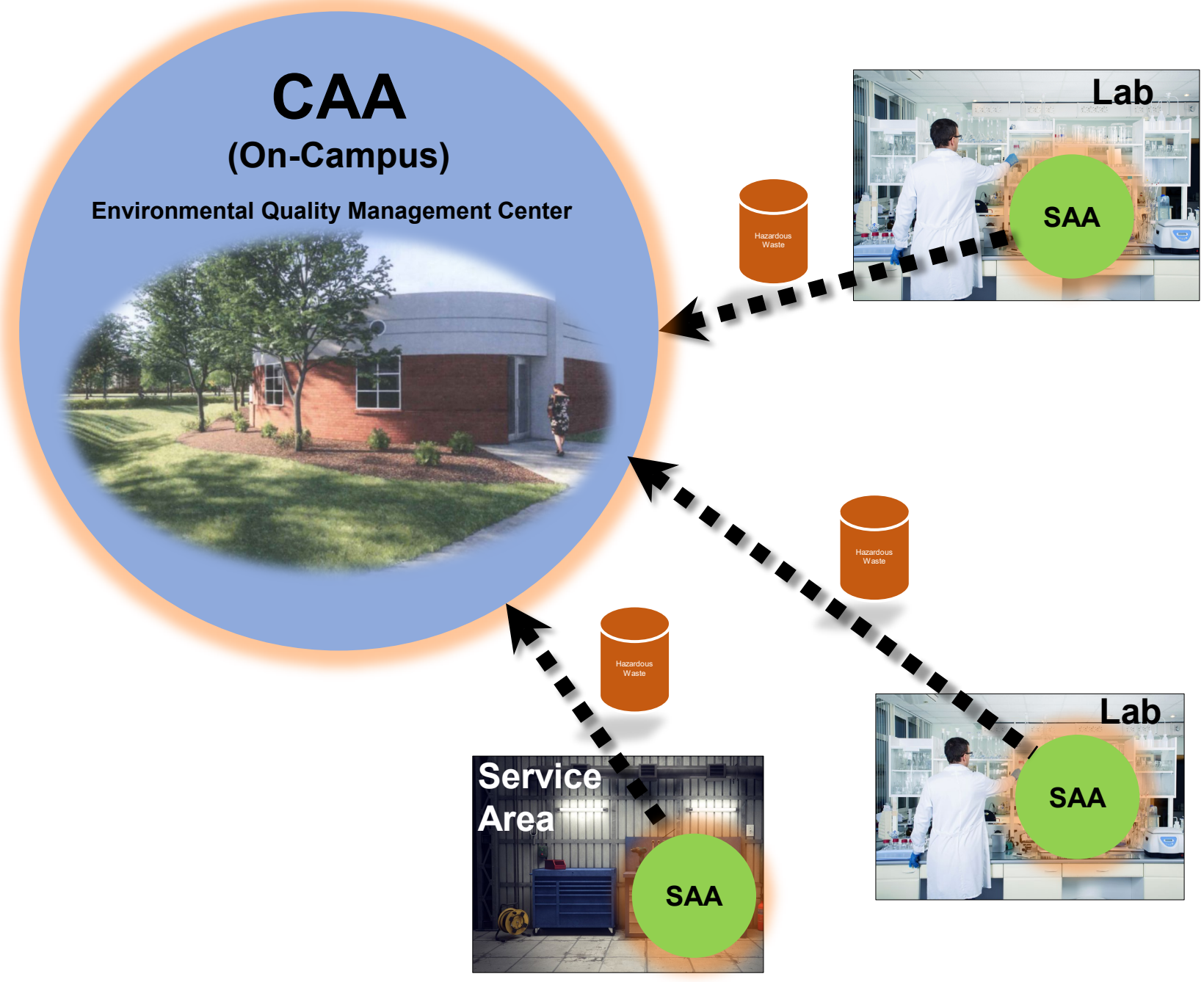
Satellite Accumulation Area (SAA)

Central Accumulation Area (CAA)

4. WASTE ACCUMULATION MANAGEMENT



4. WASTE ACCUMULATION MANAGEMENT



4. WASTE ACCUMULATION MANAGEMENT

UNIVERSAL WASTE

- **Batteries**
- **Pesticides**
- **Mercury-Containing Equipment**
- **Lamps**
- **Aerosol Cans**

REQUIREMENTS:

- Containers should be dated at the time the accumulation is begun and may not be stored for longer than 1 year.
- Proper labeling.

4. WASTE ACCUMULATION MANAGEMENT

UNIVERSAL WASTE

Fluorescent Lamps and Other Lighting

You can contact the University of Kentucky Recycling office by:

Phone: 859-257-6234
Fax: 859-257-4878
Email: recycle@uky.edu
Address: 411 S. Limestone St.
Peterson Service Building, 0005
Room 18
Lexington, KY 40506

4. WASTE ACCUMULATION MANAGEMENT

USED OIL

Oil, such as vacuum pump oil, that has been used and as a result it is unfit for continued use is required to be labeled as ***Used Oil***.

You can contact the University of Kentucky Recycling office by:

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Fax: 859-257-4878
Email: recycle@uky.edu
Address: 411 S. Limestone St.
Peterson Service Building, 0005
Room 18
Lexington, KY 40506

4. WASTE ACCUMULATION MANAGEMENT

Non-RCRA Regulated Waste

- Non-RCRA Regulated Waste <u>is not</u> a Hazardous Waste.
- However, such waste may still posses hazardous qualities.
- This waste can be picked up by the Environmental Management Department via the same notification procedures as for Hazardous Waste.

Ethidium Bromide

Silica Gel

Formalin

TOPICS

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5. WASTE PICK-UP (E-TRAX)

Environmental Quality Management

myUK

AIR QUALITY | WATER QUALITY | WASTE MANAGEMENT | ASBESTOS | SPILL PLANS AND RESPONSE | ADDITIONAL SERVICES

Hazardous Waste Menu

- Hazardous Waste Management Training
- Hazardous Waste Management Compliance Assistance
- Hazardous Waste Minimization
- Waste Pick-Up Requests (E-Trax)

Report a Spill

323-6280 (8A-5P;M-F)
257-8573(after hours)

Contact Information

Maridely Loyselle
Assistant Director
859-562-3121
maridely.loyselle@uky.edu

Waste Pick-Up Requests (E-Trax)

Using a simple three-step process, **E-Trax** enables UK to systematically track and document all aspects of its hazardous (and other special) waste generation, management and disposal activities. Not only does **E-Trax** serve as a critical component of UK's regulatory compliance strategy it also provides an uncomplicated and proficient means for those who generate the waste to ensure its safe and timely pick-up by trained personnel from the Environmental Quality Management Department (EQM).

5. WASTE PICK-UP (E-TRAX)

EASY LOG ON PROCEDURES

- *https://etrax.chematix.com/Chematix/*

Please use your link blue information. E-Trax is integrated with the University's campus wide login system.

CREATE WASTE CARDS

- This step allows the user to print out a customized and accurate Waste Card that will accompany the waste from pick up to final disposition.
- This step also includes another useful utility to create a "Hot List" for repetitively generated wastes.

SUBMIT WORKSHEETS

- This final step results in the electronic submission of a Worksheet to the Environmental Quality Management Department (EQM). Upon receipt of the Worksheet, personnel from the EQM will arrive within five working days to pick up the waste.

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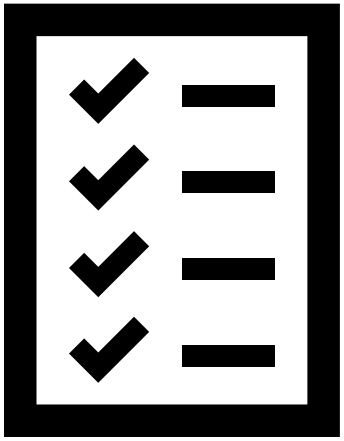
6. EMERGENCY PLANNING

CONTINGENCY PLAN QUICK REFERENCE GUIDE



University of Kentucky

CONTINGENCY PLAN QUICK REFERENCE GUIDE
for
SATELLITE ACCUMULATION AREAS (SAA's)

Must be readily available for each SAA and must include:

- ✓ Types, names, and hazards for Hazardous Waste
- ✓ Estimated maximum amounts
- ✓ Map showing location of SAA's
- ✓ Map of surrounding areas and routes of access
- ✓ Location of water supply
- ✓ Identification of emergency equipment
- ✓ Names and telephone number of Emergency Coordinator

6. EMERGENCY PLANNING

SPILL RESPONSE

"Small Spills"

"Large Spills"

Lab Personnel are responsible for the clean up of all small spills.

Regular Business Hours: 323-6280
After Hours: 911 (campus phones)
257-UKPD

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7. TRAINING

Persons involved in the management of hazardous waste must complete a training program which teaches them how to perform their duties in compliance with applicable hazardous waste regulations.

Persons must be trained within 6 months of hire and annually thereafter.

SUMMARY

SUMMARY

ALL CONTAINERS OF HAZARDOUS WASTE MUST :

- ✓ Be labeled with the words "Hazardous Waste".
- ✓ Be labeled with hazard warning information.
- ✓ Be labeled with the waste's constituents.
- ✓ Be closed at all times, except when filling.
- ✓ Be located under the control of an operator.
- ✓ Be in a clearly identified and maintained Satellite Accumulation Area
- ✓ Not include incompatible wastes.
- ✓ Not include a date until it is filled and ready for pick-up.
- ✓ As much as possible, segregate wastes from non-waste chemicals.

WITHIN A SATELLITE ACCUMULATION AREA:

- No more than 55-gal. of hazardous waste (only 1 qt. of acutely toxic).

EVERYONE MANAGING HAZARDOUS WASTE MUST:

- Complete initial and annual Hazardous Waste training.

QUESTIONS

Contact the Environmental Quality Management Department for further information:

Maridely Loyselle, Assistant Director
562-3121 (O); 433-3235 (M)
maridely.loyselle@uky.edu