# Hazardous Waste Storage

Env-Hw 507

# Hazardous Waste Environmental & Health Requirements

*"Store the waste in a manner that does not threaten human health or the environment"*

Env-Hw 506

# In this Chapter…

- Container Requirements
- “90-Day” Storage
- “Satellite” Storage
- “Outdoor” Storage

# Tanks & Containers

Hazardous Wastes Must be stored in either Tanks (265 Subpart J) or Containers (265 Subpart I)

# Tanks

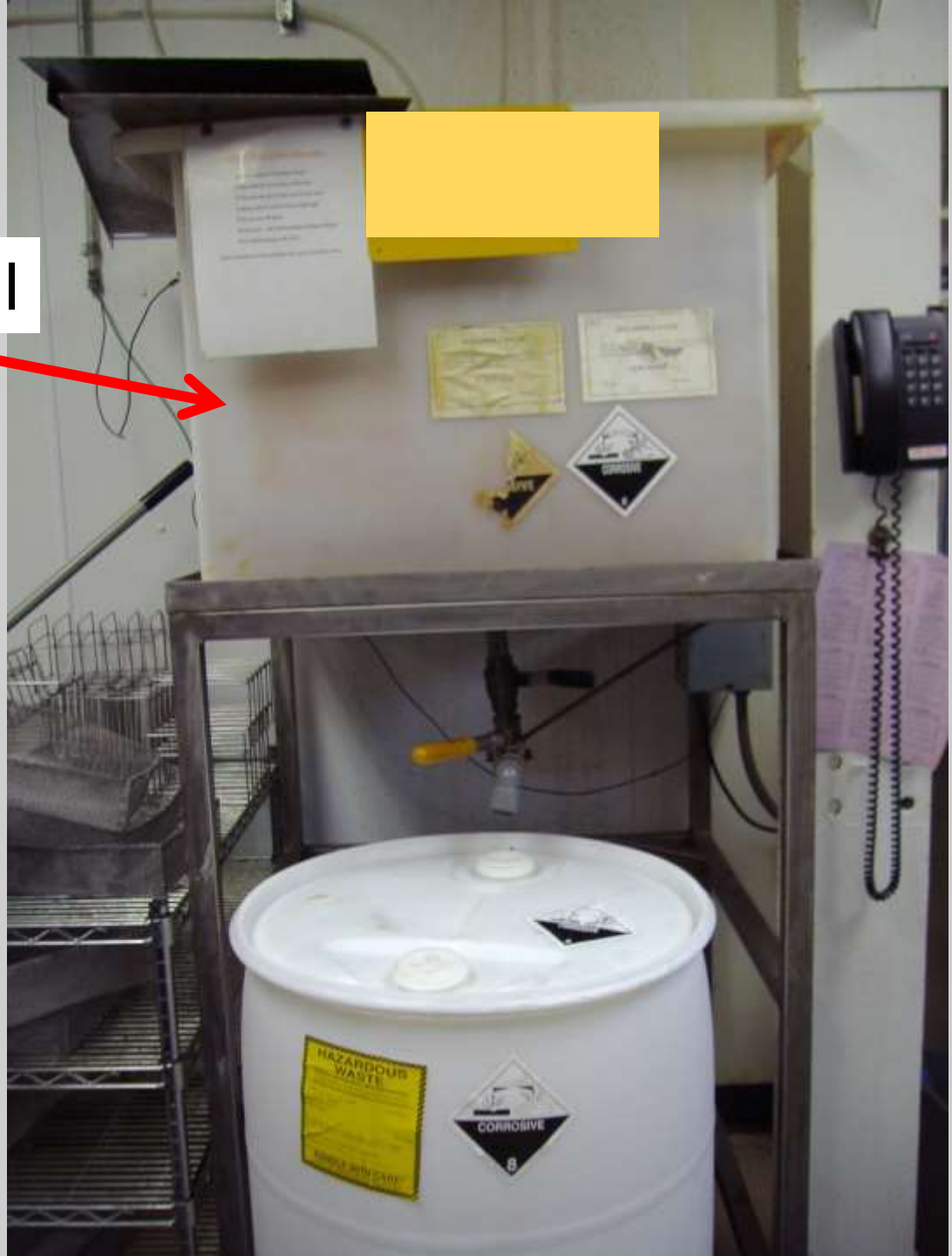
Hazardous Wastes Stored in Tanks

Tanks are stationary

Size does not matter

Big…

…Or small



# Containers

Containers are portable

Size does not matter

# Container Management

Good Condition

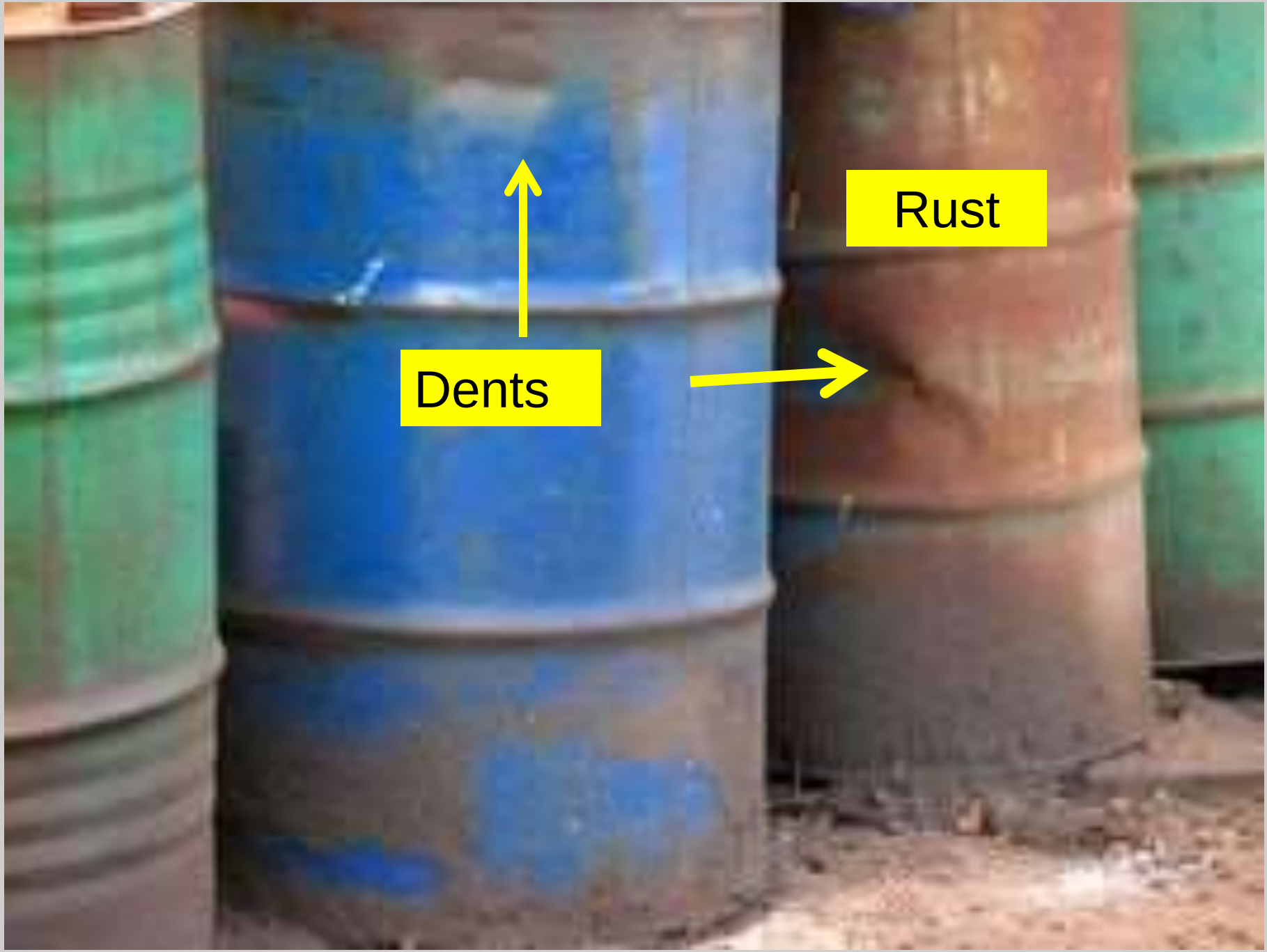
Closed and Sealed

Chemically Compatible

Impervious Surface

Floor Drains and Sinks

# Good Condition


Rust
Dents

# Container Management

Good Condition

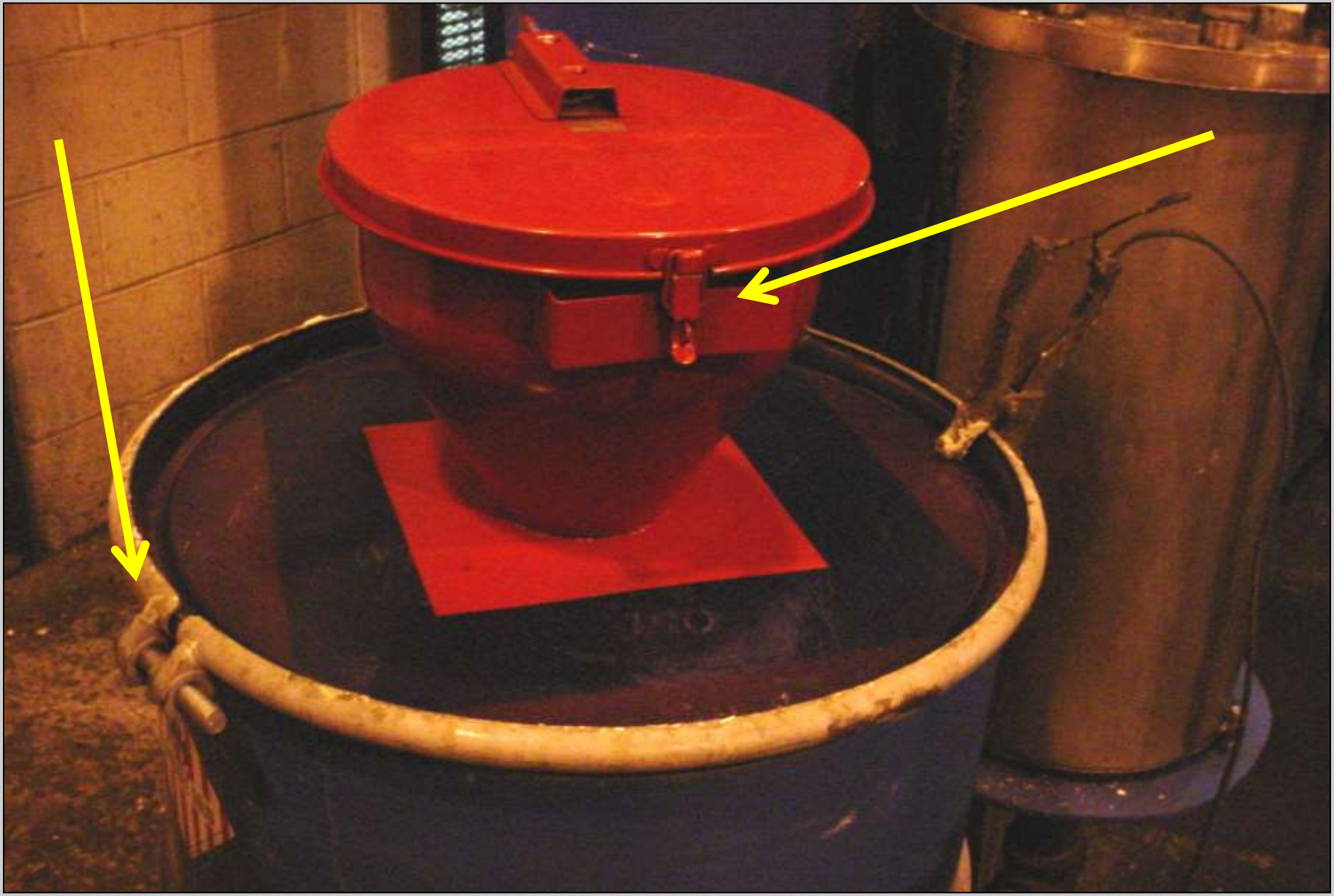
Closed and Sealed

Chemically Compatible

Impervious Surface

Floor Drains and Sinks

# Closed and sealed



HAZARDOUS
WASTE

LT2
Replenisher
CORROSIVE

RQ
Waste Flammable Liquid, n.o.s.
(Toluene & Ethyl Acetate
3 UN1993 PG II
Generator Information:
Nashua Corporation
HAZARDOUS WASTE
Control # 176042-2
37557-M4

# Container Management

Good Condition

Closed and Sealed

Chemically Compatible

Impervious Surface

Floor Drains and Sinks

# Chemically Compatible

With container

What was in the container

What it is near

# Chemically Compatible

## With container

Acid in Glass container

NOT acid in a metal drum

# Chemically Compatible

**Hazardous waste must not be stored in an unwashed container that once held an incompatible**

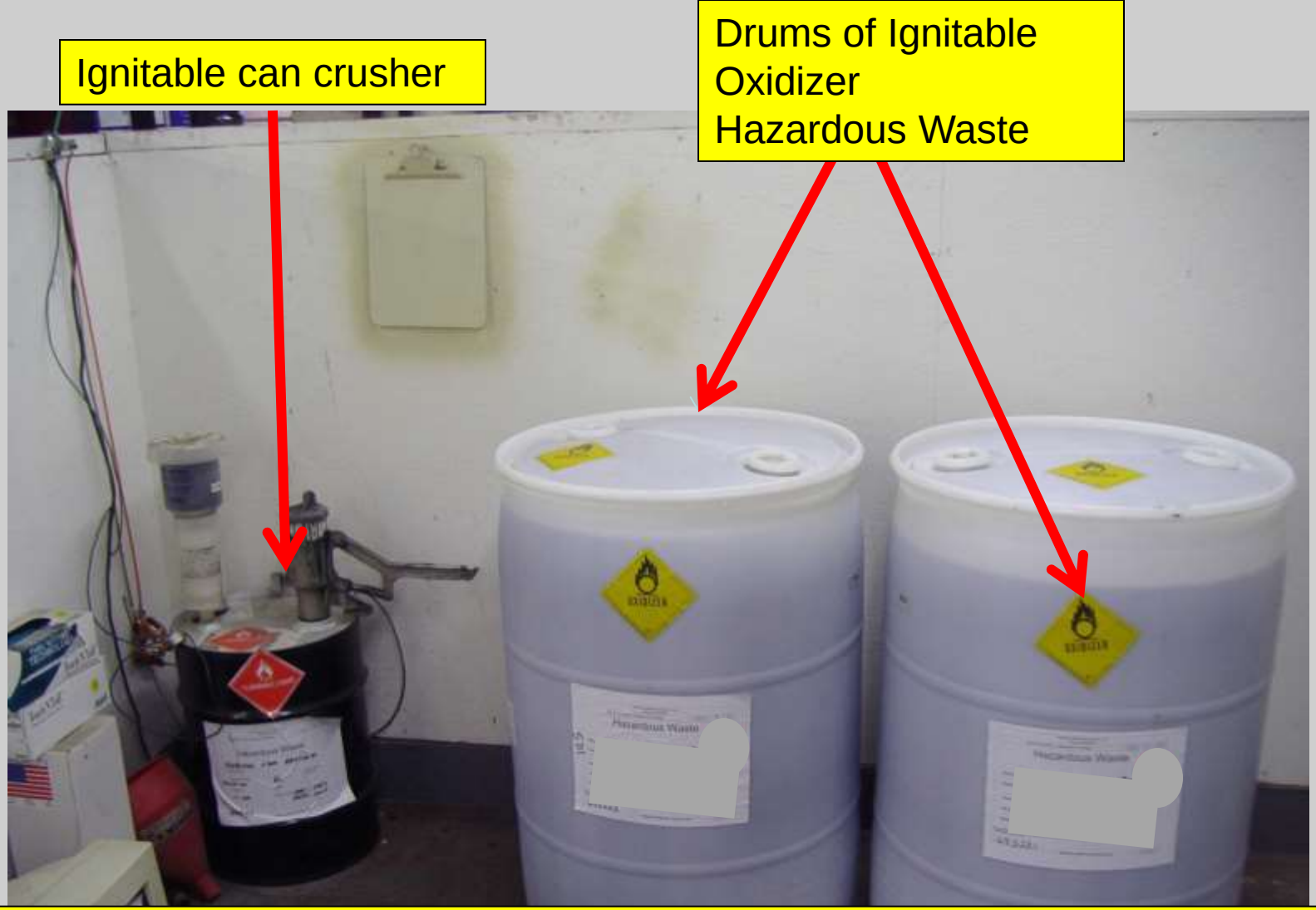
Perchlorate container with waste Acetone

# Resource

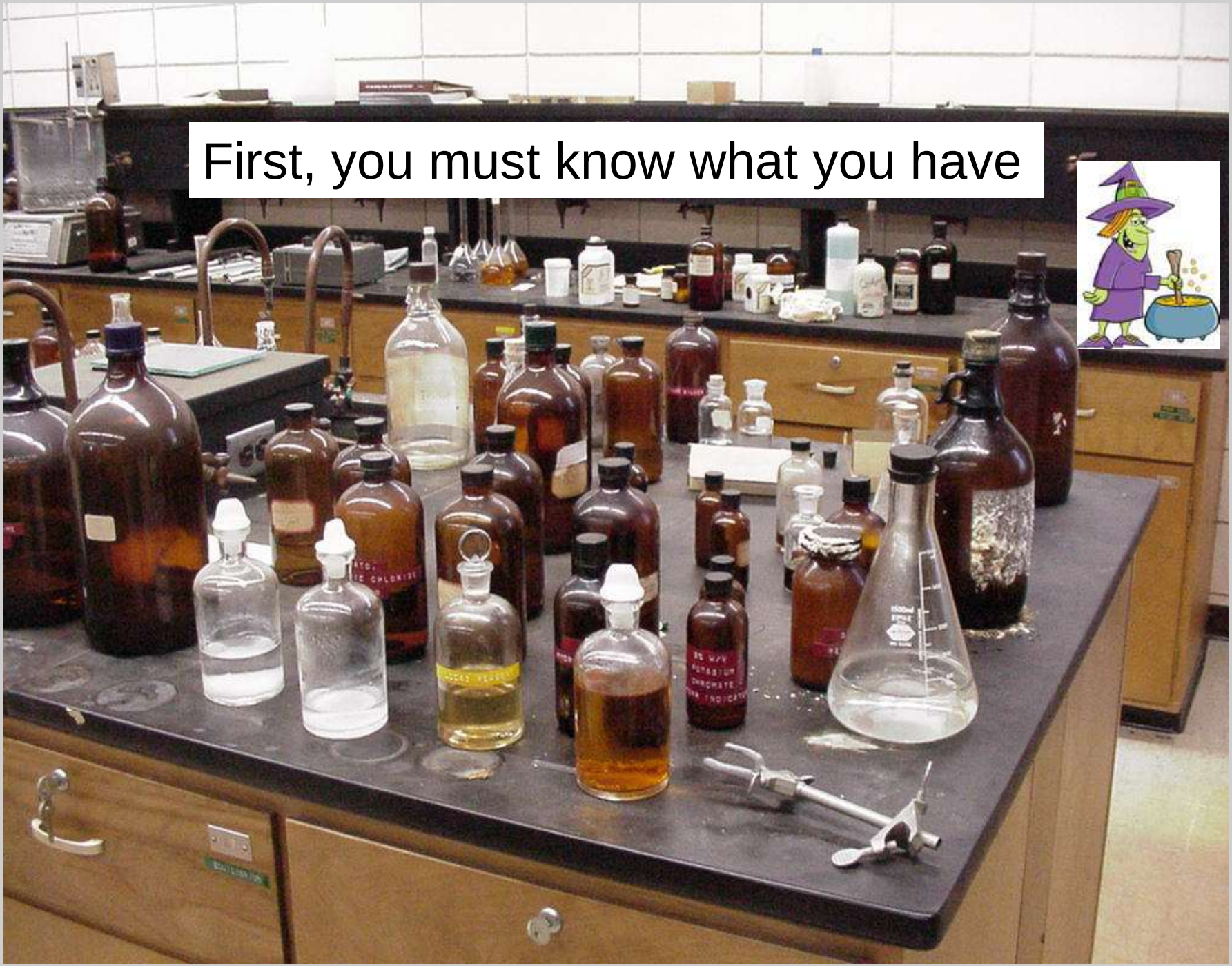
- 40 CFR 265 Appendix V

| Group 6-A | Group 6-B |
|---|---|
| Chlorates | Acetic acid and other organic acids |
| Chlorine | Concentrated mineral acids |
| Chlorites | Group 2-A wastes |
| Chromic acid | Group 4-A wastes |
| Hyphochlorites | Other flammable and combustible wastes |
| Nitrates | |
| Nitric acid, fuming | |
| Perchlorates | |
| Permanganates | |
| Peroxides | |
| Other strong oxidizers | |

Potential consequences: Fire, explosion, or violent reaction.




INCOMPATIBLE
(even though both are ignitable)


First, you must know what you have

# Chemically Compatible

**Storage containers that are near each other and hold incompatible waste must be separated by a dike, berm, wall or other device.**

# Container Management

**Good Condition**

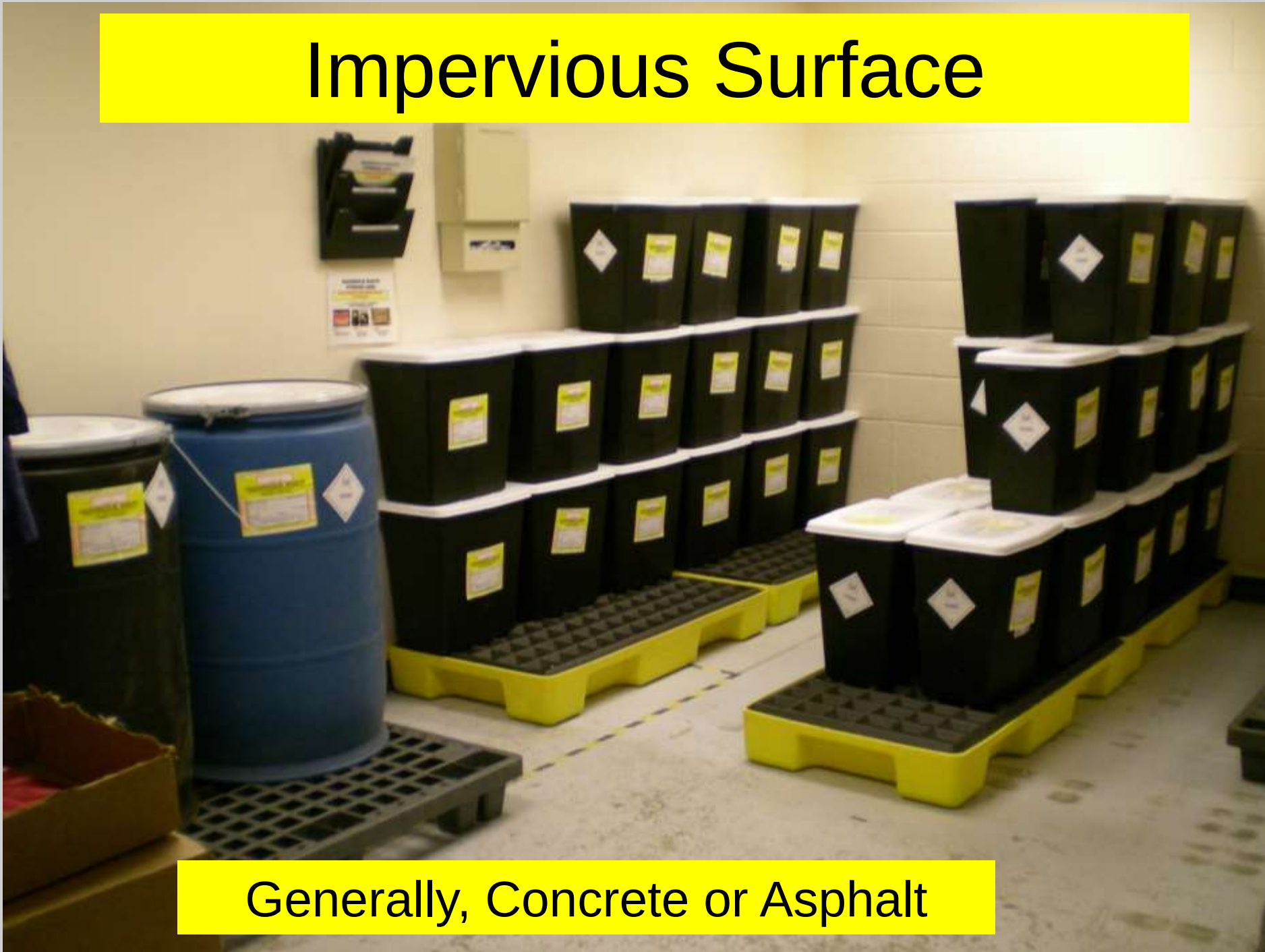
**Closed and Sealed**

**Chemically Compatible**

**Impervious Surface**

**Floor Drains and Sinks**

# Impervious Surface



Generally, Concrete or Asphalt

# Container Management

Good Condition

Closed and Sealed

Chemically Compatible

Impervious Surface

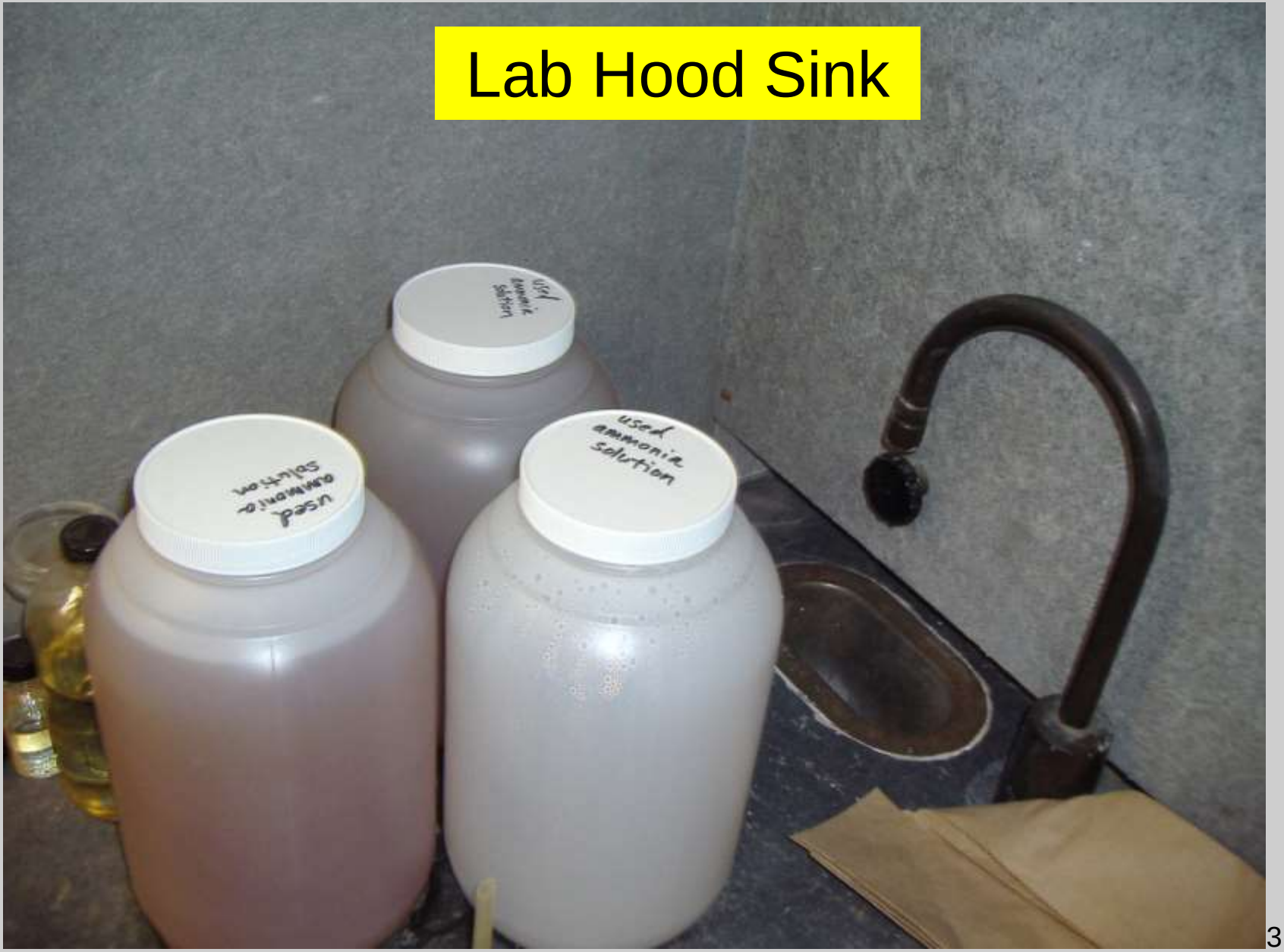
Floor Drains and Sinks

# Floor Drains

Use Secondary Containment

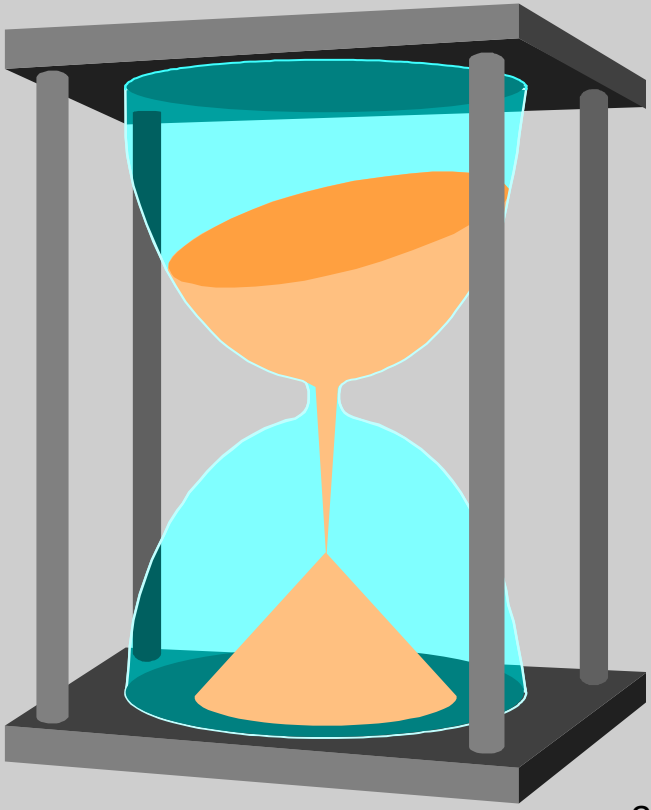
SPILL KIT

# Lab Hood Sink



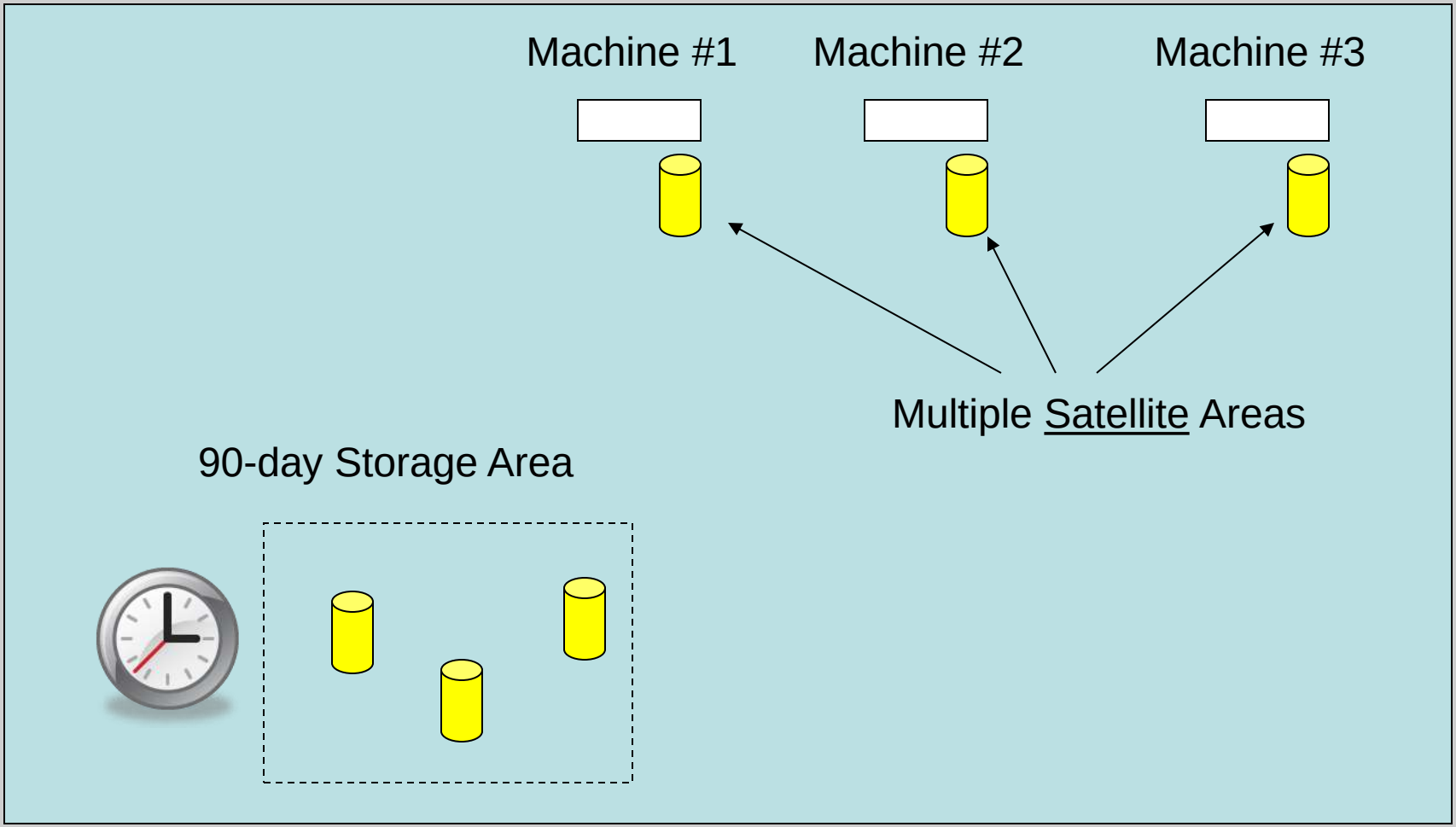
# Storage Time
# <90 days from first drop
# except for:

- Extension
- FQG Satellite Accumulation



# FQG Storage Methods

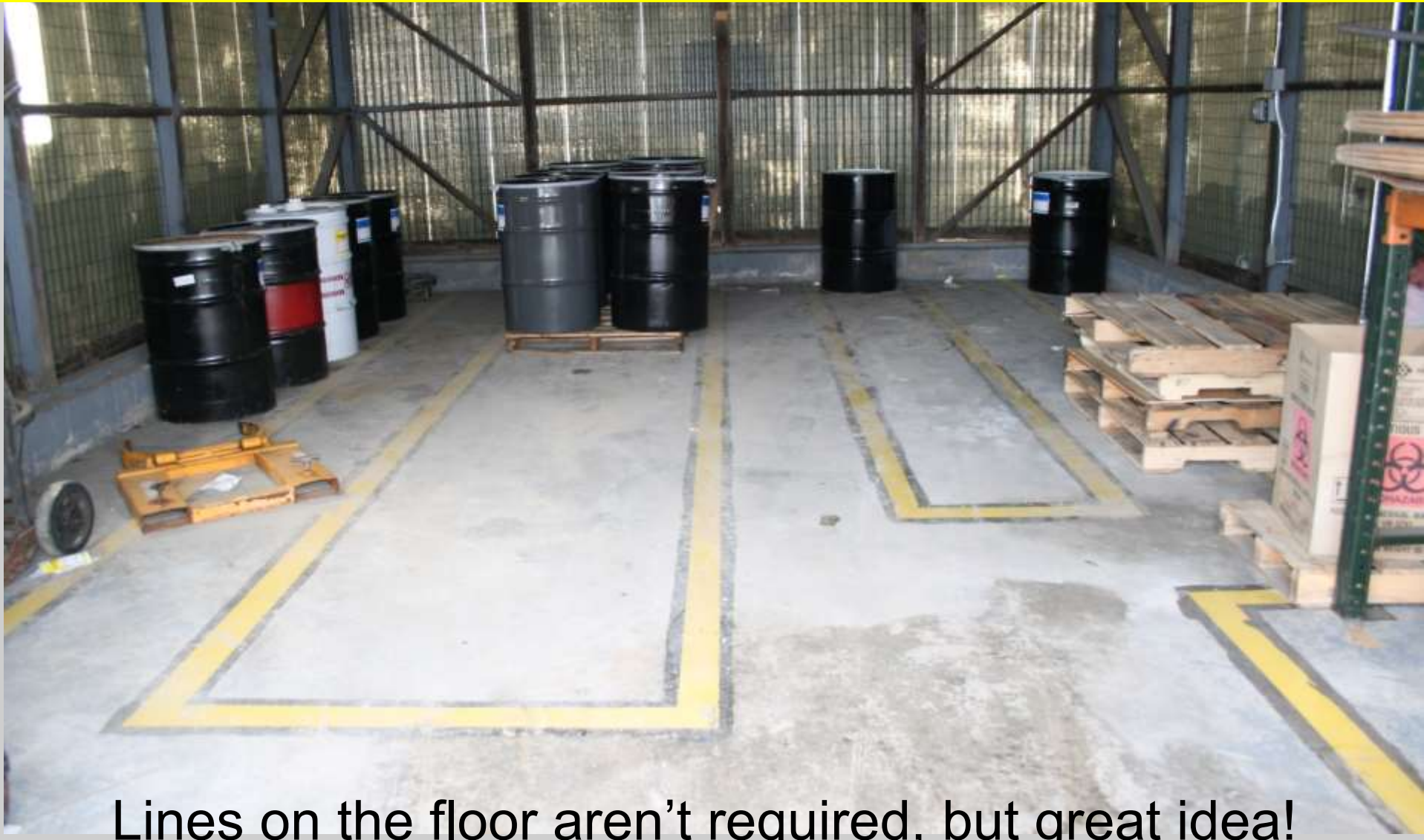
- Two types of storage areas:
  - Satellite areas
    - Containers that take a while to fill
    - Generally the most common storage area
  - 90-day storage areas
    - Tanks
    - Containers filled in one event
    - Full containers moved there from a satellite area


Machine #1
Machine #2
Machine #3
Multiple Satellite Areas
90-day Storage Area

# 90-Day Areas

Potentially more waste, so definitely more rules

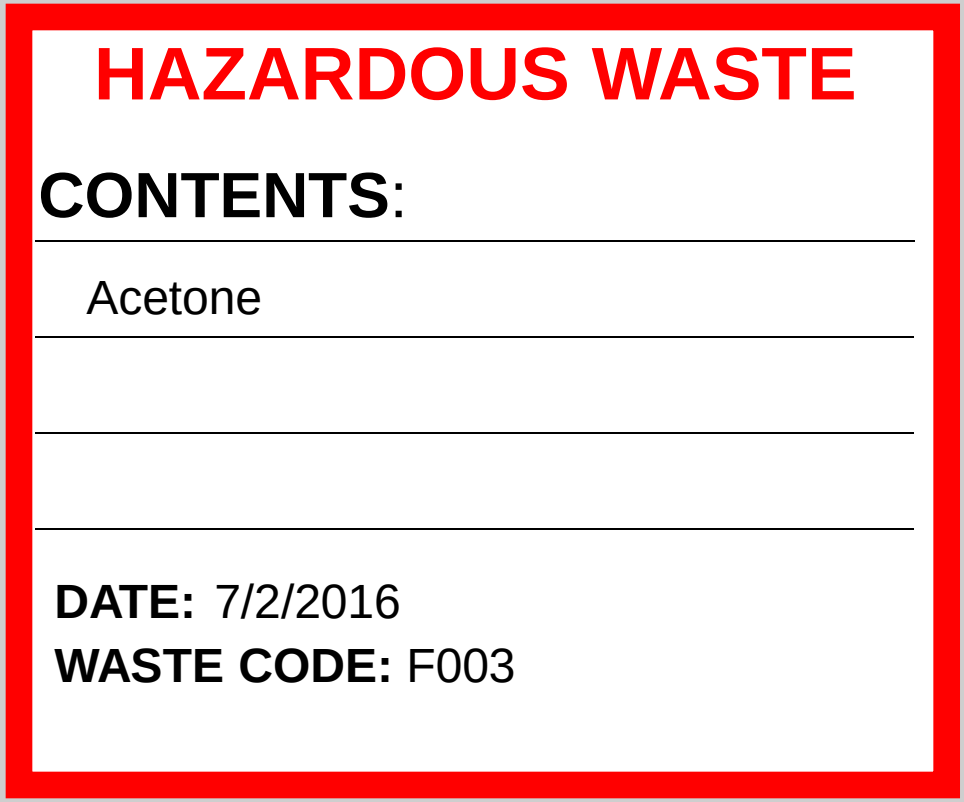
# Sample 90-Day Hazardous Waste Storage Area

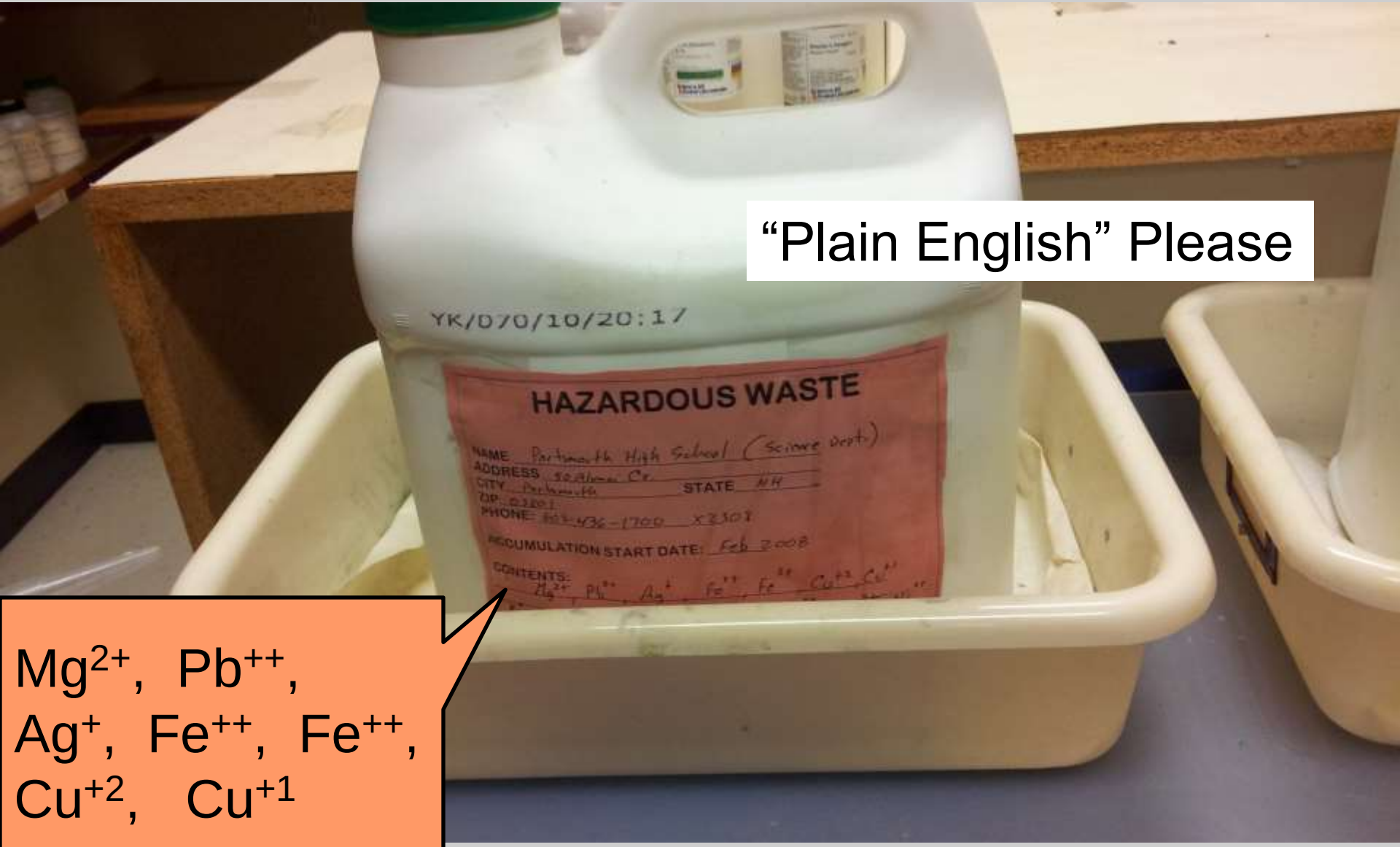


Lines on the floor aren’t required, but great idea!

# “90-day” Container Marking

- “Hazardous Waste”
- Description of Contents
- Beginning Accumulation Date
- EPA or State Waste Code
- ACCESSIBLE






“Plain English” Please

$Mg^{2+}$, $Pb^{++}$, $Ag^{+}$, $Fe^{++}$, $Fe^{++}$, $Cu^{+2}$, $Cu^{+1}$

U.S. D.O.T. SHIPPING
HAZARD CLASS
HAZARDOUS WASTE
FEDERAL
LAW PROHIBITS IMPROPER DISPOS
CONTACT THE NEAREST POLICE, OR
PUBLIC SAFETY AUTHORITY, OR THE
ENVIRONMENTAL PROTECTION AGENCY
MANIFEST DOCUMENT #
GENERATOR
ADDRESS
CITY
EPA ID #
EPA WASTE #
CONTAINS HAZARDOUS OR TOXIC WASTE

AZARDOUS WASTE
FEDERAL LAW PROHIBITS IMPROPER

# Preparedness and Prevention Items <u>90-day</u> storage areas <u>only</u>

- To prepare for (and prevent) emergencies
- To minimize the possibility of a hazardous waste release, fire, or explosion
- To protect human health and the environment

# P&P Requirements @ 90-day areas

- **Not more than 100 feet away**
  - Accessible along a clear path

- **Hazardous waste storage area equipment**
  - Alarm system – to alert staff in the facility
  - Telephone – external communications
  - Portable fire control (fire extinguisher)
  - Spill control (speedi-dri or other)
  - Adequate water for fire control
  - Emergency telephone posting

- **Test and Maintain these items**

# Emergency Posting

- At the Nearest Telephone
- Emergency Numbers of

  *Emergency Coordinators (Home & Office)*
  *Fire Department*
  *Police Department*
  *Hospital*
  *Emergency Response Teams (State & Local)*

**Emergency Posting**

234-2323

234-2342

434-3434

abcdeksfrjdsjfsk
sjfskdfjdskfjsdkf
skjfkkkksfsfsd

- Location of Fire Extinguishers & Spill Control Material and Fire & Internal Alarms
- "No Smoking" signs must be placed where <u>ignitable</u> or <u>reactive</u> waste is stored

Post at or near Phone

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

# PHONE POSTING - SAMPLE

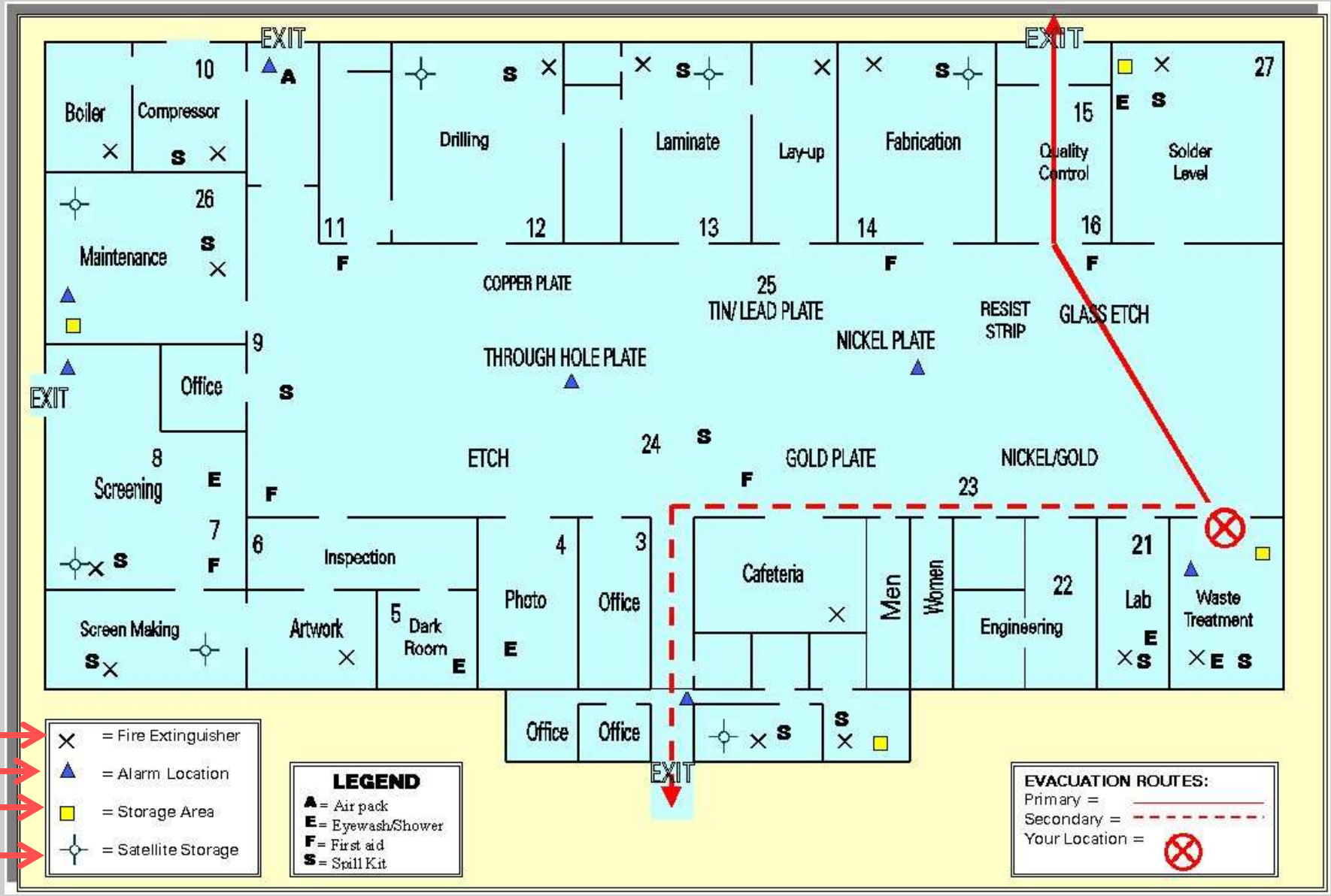
## EMERGENCY RESPONSE NOTIFICATION LIST

| CONTACT | PHONE NUMBER |
|---|---|
| **FIRE:** | 911 |
| **POLICE:** | 911 |
| **AMBULANCE:** | (603) 555-1111 |
| **HOSPITAL:** | (603) 555-2222 |
| **NH DES Spill Response & Complaint Investigation Section:** | (603) 271-3899 *(Mon-Fri, 8:00 am - 4:00 pm)* |
| **NH STATE POLICE:** | (603) 223 4381 |
| **NATIONAL RESPONSE CENTER:** | (800) 424-8802 |
| **ABC TRANSPORTER:** | (603) 555-3333 |

## EMERGENCY COORDINATORS

| CONTACT | | PHONE NUMBER | | | |
|---|---|---|---|---|---|
| **PRIMARY-** | JOE GENERATOR: | Work: | EXT. 123 | Home: | (603) 555-4444 |
| **ALTERNATE #1-** | ANITA C. PROFIT: | Work: | EXT. 456 | Home: | (603) 555-5555 |
| **ALTERNATE #2-** | JOHN HAZLEAK: | Work: | EXT. 789 | Home: | (603) 555-6666 |

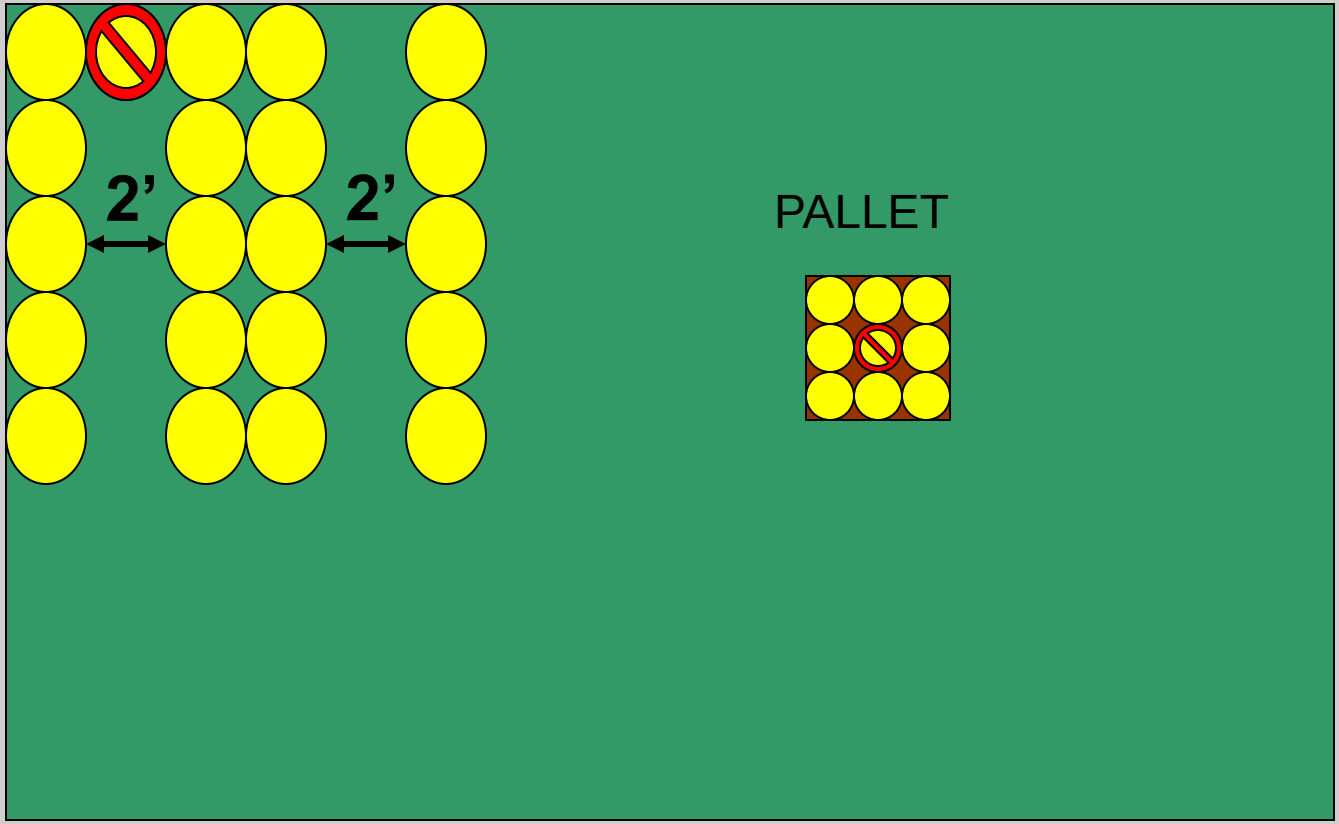
# SAMPLE FLOOR PLAN



# “NO SMOKING” SIGN
# Ignitable or Reactive

# P & P Requirements @ 90-day areas

- Adequate aisle space
  - Not less than 2 feet (adjacent)



2’?
2’
2’
2’

NOT 2 Feet

# P & P Requirements @ 90-day areas

- Arrangements with local authorities

  Who?

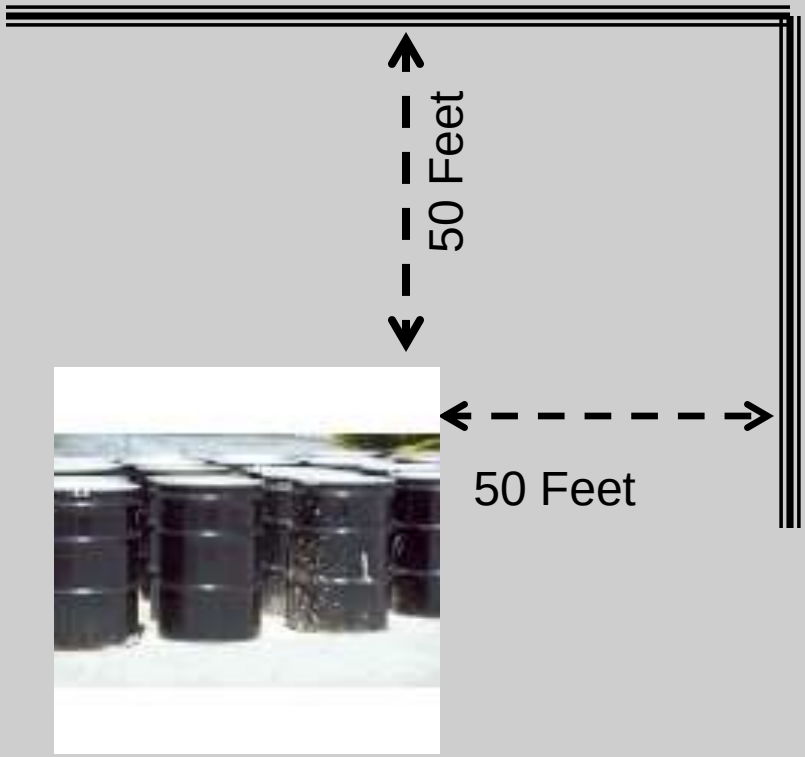
  – Fire, Police, Hospital, Contractors, DES

  What?

  – Facility layout
  – Hazardous wastes present
  – Suggest a tour
  – Get it in writing – at least the attempt!

# Storage Requirements

- **Containers holding ignitable or reactive waste must be at least 50 feet from the facility's property line.**



What if your property is too narrow to be this far away?

Contact your local fire chief with a plan to prevent incidents

# Satellite Areas

# Satellite Accumulation

**May accumulate up to 55 gallons (or 1 quart of acute waste) > 90 days without a permit**

- **No limit on # of satellite areas**

**Two General Requirements:**

**1. Under control of operator of process**

**2. "at or near" <u>each</u> point of generation**

**Operator trained every 3 years**

# “Control of the Operator”

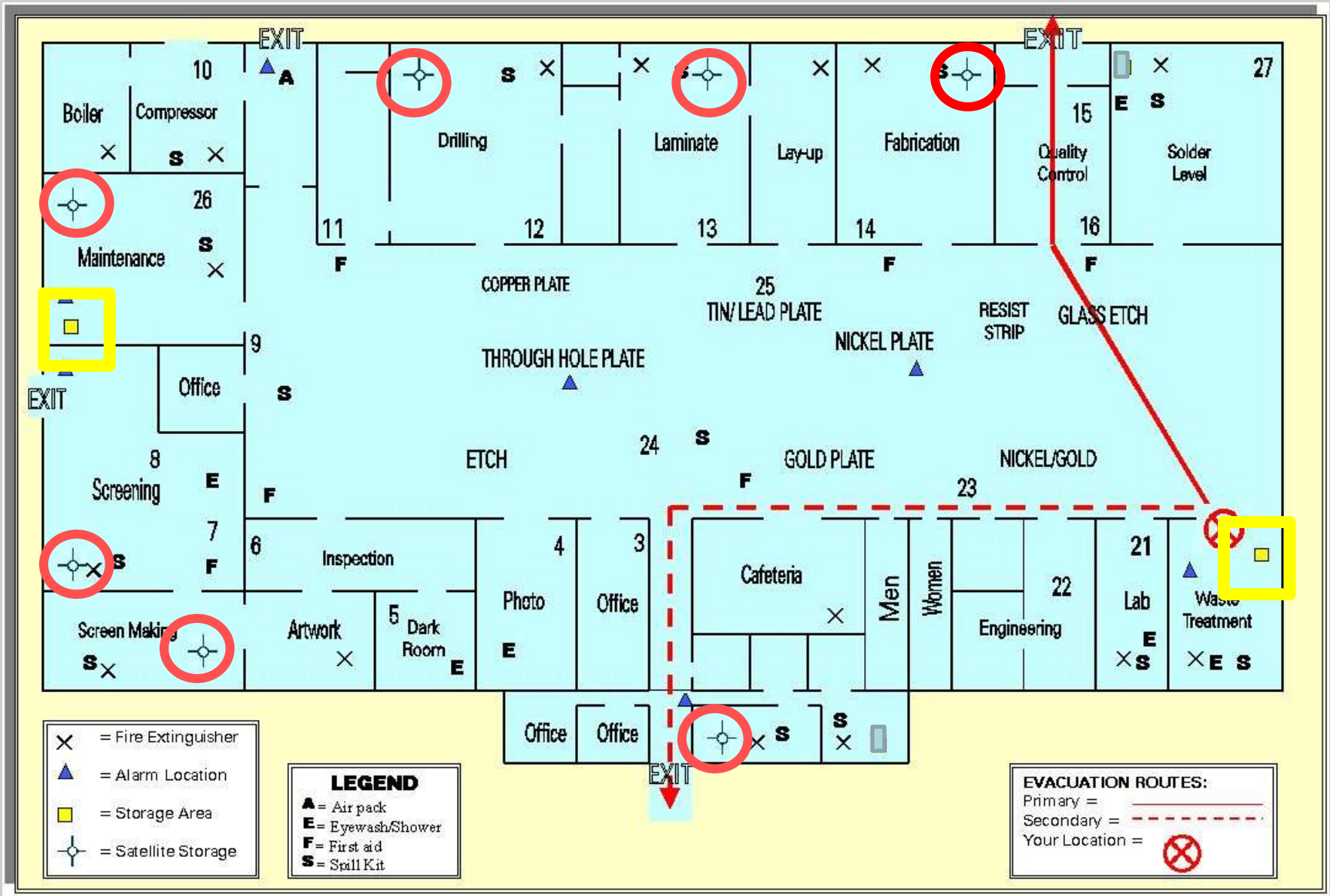
- Located where operator can easily and routinely observe the container

- Operator trained to know the hazardous waste and operations of their process.

# Satellite Accumulation

At or near POINT OF GENERATION

# Satellite/90-day Example



# Satellite Container Marking

**Words: HAZARDOUS WASTE**

**When the first drop goes in**

**Contents**

**HAZARDOUS WASTE**

**CONTENTS**:

Acetone

**DATE:** 9/10/16

**WASTE CODE:** F003

**When the amount of hazardous waste reaches 55 gallons the container must be <u>immediately</u> marked with the Date and EPA or State Waste Code**

# Storage Time

1. Satellite Container- Accumulation

**March**

| SUN | MON | TUE | WED | THU | FRI | SAT |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | 31 | | | |

**April**

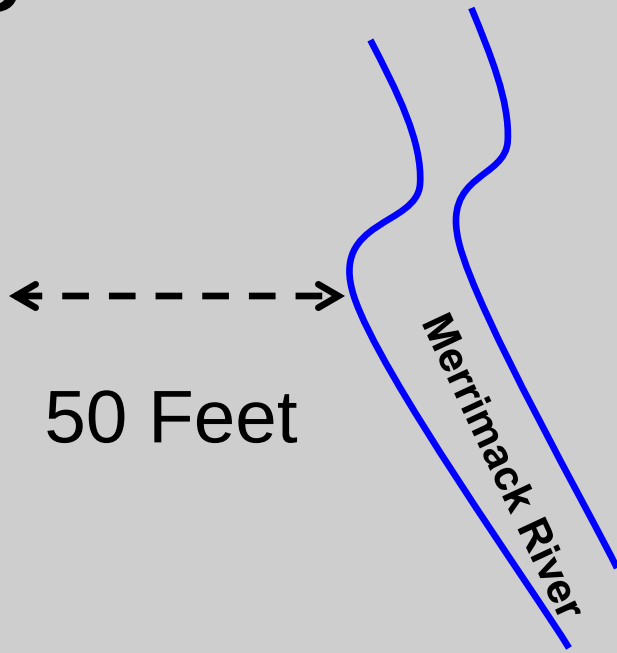
| SUN | MON | TUE | WED | THU | FRI | SAT |
|---|---|---|---|---|---|---|
| | | | | 1 | 2 | 3 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | |

**May**

| SUN | MON | TUE | WED | THU | FRI | SAT |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | 1 | | | |

# Outdoor Storage Requirements

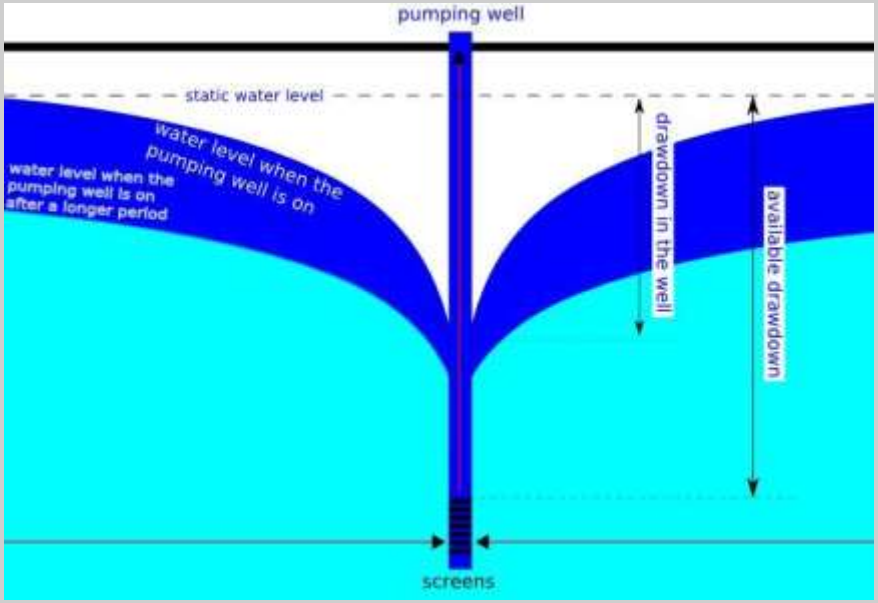
# Outdoor Storage




**Hazardous waste stored outside must be at least 50 feet from surface waters.**

# Outdoor Storage Requirements

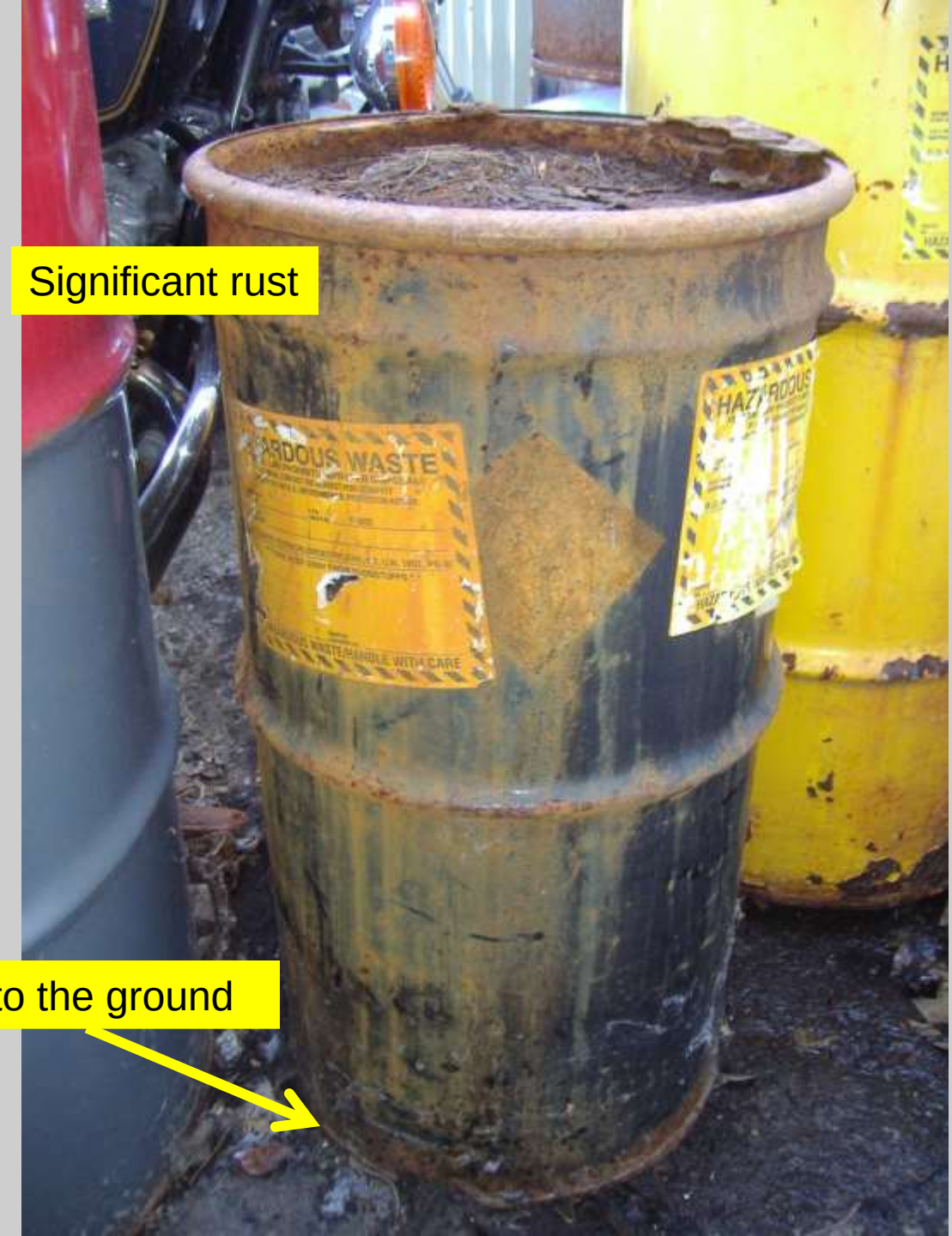
- 75’ from private wells
- Beyond the protective radius of any public water supply well
- 50’ from storm drains



# Outdoor Storage

## Under Cover if Outside

Under Cover?


Significant rust
Melting into the ground

# Secondary Containment

- All hazardous waste containers shall have secondary containment
- Whichever is larger:
  - 110% volume of largest container; or
  - 10% of Total Volume

  - Secondary containment must also be covered from elements

# Outdoor Storage Security Measures

- An artificial or natural barrier, which completely surrounds the storage area

- A means to control entry at all times

- A sign with

**DANGER**

**Unauthorized Personnel**

**Keep Out**

at each entrance

An artificial or natural barrier,
which completely surrounds the storage area.

# A means to control entry at all times

# A sign with these words at each entrance

# Transportation Requirements

- Transporter must posses-

1. **A current NH Hazardous Waste Transporter Registration Number: "<u>TNH 1234"</u>**

2. **EPA ID Number – NHD012345678**

# Transportation Requirements

- USDOT Says: All “HazMat employees” must be trained every 3 years

➢ **HazMat Employee-** A person who in the course of employment directly affects hazardous material transportation safety.

Examples:

1. Loads, unloads or handles hazmat
2. Prepares hazmat for transportation including paperwork (manifests, BOLs)
3. Responsible for the safety of transporting hazmat
4. Transports hazardous materials

# USDOT Training Materials

http://www.phmsa.dot.gov/hazmat/training/publications/modules