Pollution Prevention Strategies

Presented by
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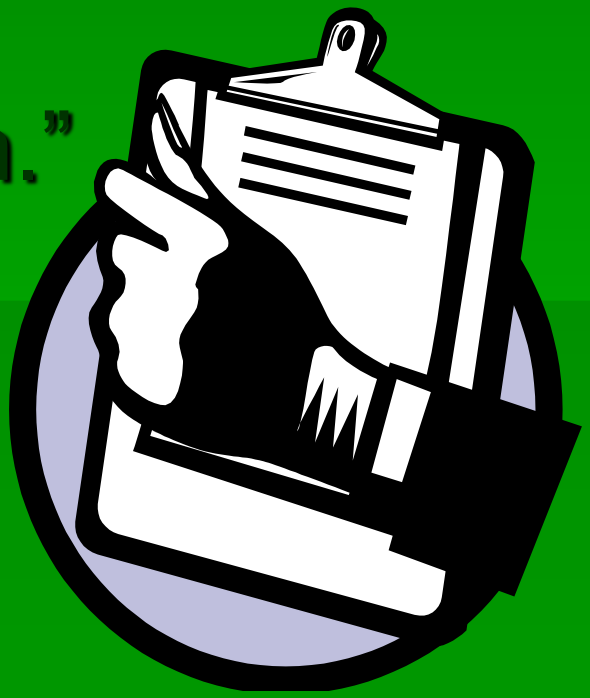
"Compliance with laws and regulations is the first step towards pollution prevention."



Workshop Topics

- P2 Benefits
- Minimizing Waste
- Waste Management to prevent spills
- Wastewater Pollution Prevention
- Parts Washing
- Solvent Recycling

Pollution Prevention, P2

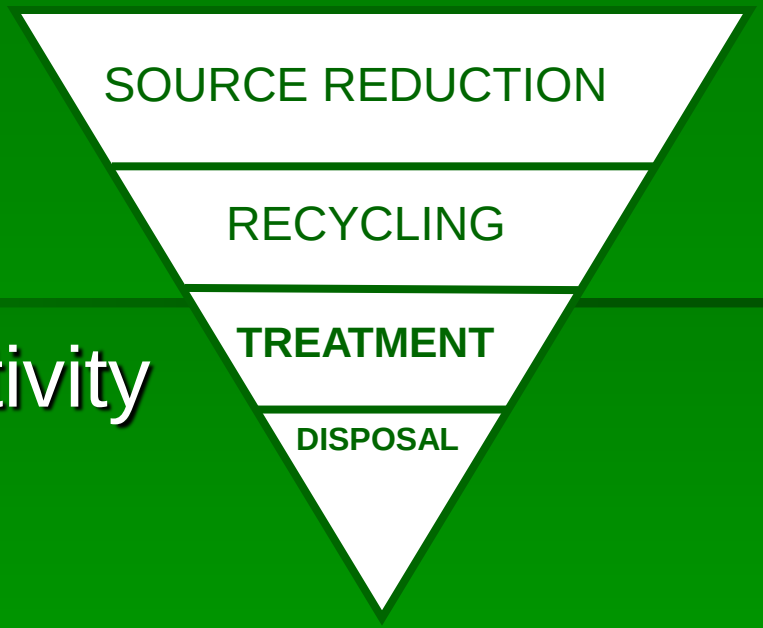
- Reducing Waste at its Source:
  - Preventative maintenance
  - 2 stage cleaning
  - source segregation- hazardous sanding/grinding waste separated from floor and car cleaning dirt and debris
- Material substitution
  - low hazard surface cleaners
  - waterborne coatings
  - water-based or lower toxicity paint gun cleaners
- Reuse
  - on-site solvent recycling
  - mixed paint

Pollution Prevention

- Work practices
  - job planning and scheduling
  - Employee involvement
  - Training
  - Housekeeping
- Process changes
  - vacuum sanding
  - Spill prevention
  - Resource conservation

    - minimize water and utility usage

Benefits



- Increased productivity
- Cost savings
- Reduced regulatory burden
- Improved worker health and safety
- Improved attendance on the job

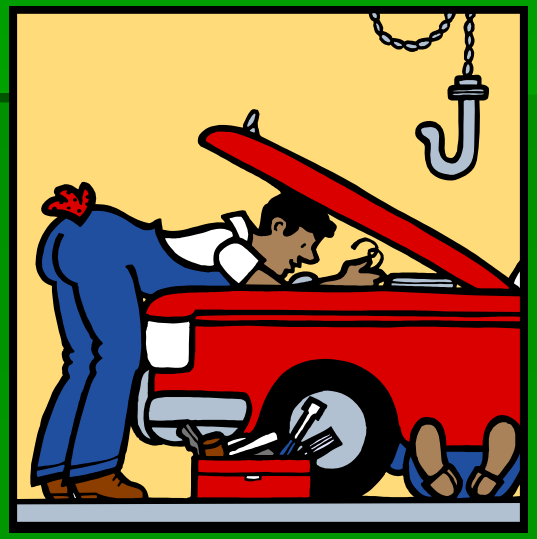
Waste Streams

Vehicle Service & Repair:

- Still bottoms from solvent recycling
- Surface cleaners, wipes and rags
- Wash water
- Automotive fluids- oil, coolant
- Used containers
- Batteries
- Bead Blast dust
- Universal Waste

Auto Body Repair:

- Solvent and paint
- Sanding dust
- Wet sanding sludge
- Paint booth filters
- Filters from spray gun cleaning



Aqueous Parts Washers

Choose the correct one for your application:

- heat, agitation, and detergents to break down the contamination on parts
- microbes to degrade the oils and greases, extending the life of the solution
- ultrasonic or high pressure sprays in cabinets

Parts Washers and P2

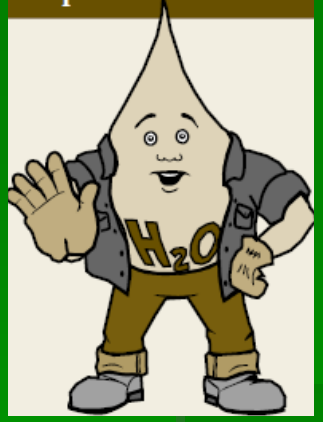
DISSOLVING MYTHS ABOUT AQUEOUS CLEANING

MYTH	FACT
Aqueous cleaning units do not clean parts as well as solvent units.	Aqueous spray cabinets and ultrasonic units can clean even difficult-to-clean parts such as wheel bearings.
Aqueous cleaning units cannot clean transmissions or carburetors.	Ultrasonic units can effectively clean transmissions and carburetors, including hidden areas.
Aqueous cleaning units create a part-rusting problem.	Rust inhibitors in aqueous cleaners decrease the chances of rusting. Rusting can be further minimized by drying parts immediately after cleaning.
Aqueous cleaning is expensive.	Most facilities can save money by: 1) implementing aqueous spray cabinets to reduce cleaning labor **and** 2) maximizing aqueous solution life.

Parts Washers and P2

DO:

- **Use** micro-filters to extend the life of the solutions.
- **Change** aqueous solutions only when necessary-- a slight discoloration of the solution is normal.
- **Skim** the oil that floats on top to extend solution life.
- **Replace** aerosol cans of solvents with aerosol water based cleaners.
- **Limit toxic exposure** to employees



Parts Washers and P2

DON'T:

- Don't discharge waste solutions to sewer.
- Don't use solutions with greater than 5% VOCs.
- Don't put fabric parts washer filters with used oil & fuel filters to be recycled.
- Don't contaminate the aqueous parts cleaner with aerosol solvents.

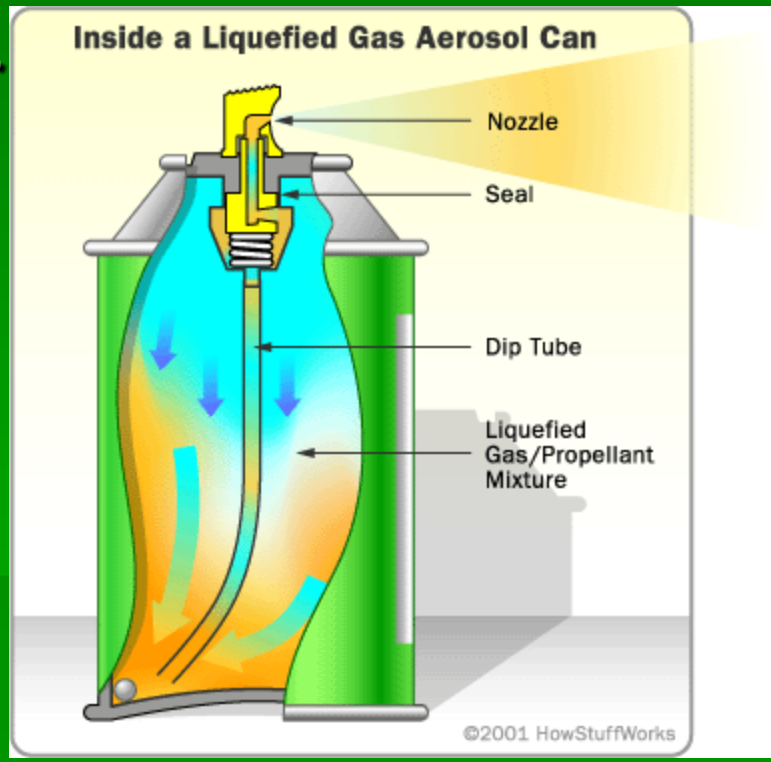
  - Aerosol cleaners, such as N-Hexane, used to spot clean or dry brakes -

    - can expose employees to the risk of nerve damage.

Aqueous Parts Washers

Why is an Aerosol Can Hazardous?

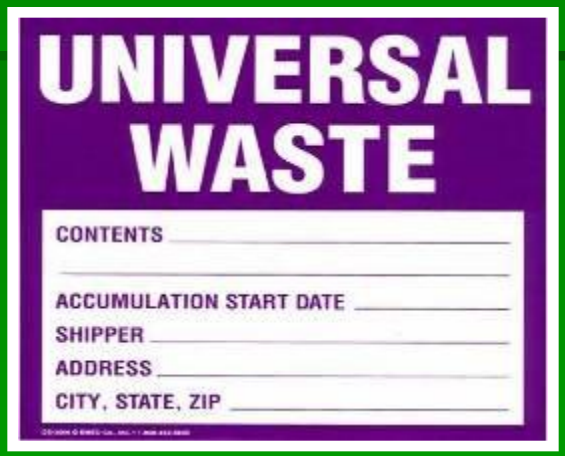
- Propellant component is ignitable, toxic and under pressure
- Chemical component is ignitable, corrosive, reactive, or toxic.
- **Examples:** Aerosols containing paint, pesticides and degreasers likely to be hazardous when discarded.



They Explode Too!

Aerosol Cans – Depends on YOUR hauler

- Universal Waste



- Hazardous Waste

Aerosol Cans – Non-empty cans never belong here!

Want to Stop Using Aerosols?
Try Refillable Spray Bottles

- Two types:
  - Metal bottles that spray product using compressed air.
  - Plastic bottles that use a hand pump to spray product.

Antifreeze Recycling

P2 actions you can take to save time and money when you recycle antifreeze:

- **Preventative** maintenance: change the recycling filters to meet operation standards in on-site antifreeze recycling equipment.
- **Avoid** spills from radiators from entering storm drains or running off-site from overheated engines.
- **Use** secondary containment wherever possible when transferring or storing waste antifreeze.
- **Manage** all wastes from recycling antifreeze as potentially hazardous wastes containing lead, chrome, copper, zinc, or cadmium.
- **Replace** ethylene glycol with propylene glycol as a less toxic alternative.
- **Dedicate** a mop in the “4 step method” to clean-up antifreeze spills, to separate antifreeze from other fluids (oil).

Hazardous Waste Containers

Spill Prevention is Pollution Prevention:

- Train employees to remember to close containers.
- Use large funnels, easier to pour.
- Train employees to take half-full temporary waste containers to empty into waste drums.
- Use a hand pump instead of pouring.
- Check the waste level in the drums before pouring

Hazardous Waste Containers

Do you think these will be poured into the Used Oil Tank without spilling?

This can be easily avoided!

How can Closing Containers can save you $$$

- It rained, used oil spilled out from container onto ground.

Sheen was followed to……

Down the Street to a Storm Drain

- Storm Water Violation
- Illegal Discharge to Waste
- Did not maintain facility to prevent release
- All because of someone did not put the bung in the drum!

Sanding Waste – Hazardous?

- Sanding waste may be toxic if it contains heavy metals such as cadmium, chromium, nickel, copper, lead, and zinc – Title 22 metals.
- Must either be tested or business must demonstrate knowledge that the dust is not hazardous.

Wet Sanding vs. Dry Sanding

- Dry Sanding is preferred.
  - Wet Sanding introduces another waste stream - **contaminated water**.
- If you must “wet sand” - use as little water as possible, & collect contaminated water so it does not enter gutters, storm drains or sewer.
- Have waste hauled off site by service contractor.
  - If hazardous, must be hauled by a hazardous waste hauler
  - if not, the grit must be disposed of as solid waste –

NOT DOWN THE SEWER OR STORM DRAIN!

Vacuum Sander

- More efficient vacuum sanding system
- Word from businesses that use this:

"Takes longer to sand, but there is no clean up, employee does not need to wear respirator and delivers a cleaner product"

- Sweeping is a good practice but vacuum sanding to keep waste off the floor is better!

Don’t Forget …….

- Bead Blast Dust Waste
  - This is most likely hazardous also!

Spill Prevention is P2

- Nothing but rain water can go down the drain!
- **Stormwater Violation**
- If w[illegible] is also an **illegal disposal of hazardous waste violation**!

$$FINE!

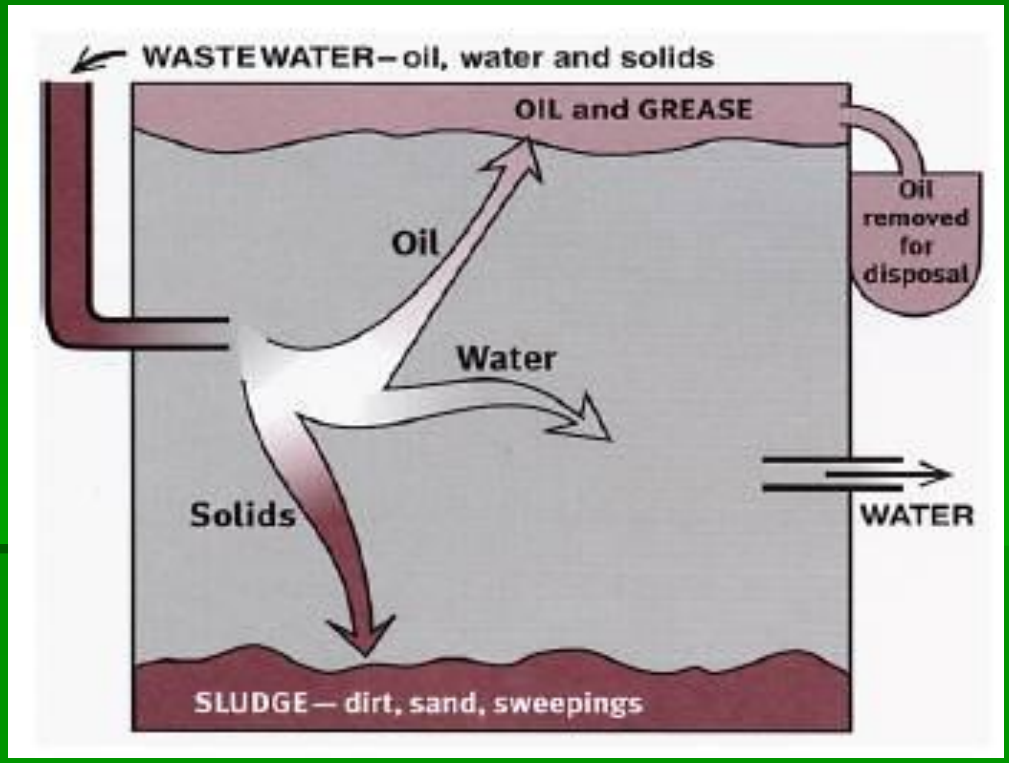
Oil/Water Separators

- Allows lighter substances (oil, grease) to float and heavier-than-water materials to sink (dirt, sludge, debris)

- Can become a source of pollution if greases, sludges and antifreeze are allowed to enter drains, sewers, or run off-site.

- The water is then discharged into the sewer.

- Reduce the oil/grease in OWSs by allowing microbes (bacteria) to break them down - reduces them before the water discharges.



P2 Reduces the Risk of Violations

Spill Prevention and Floor Cleanup

Secondary Containment and Roll Around Drip Pans

Gasoline or solvent spill?

Yes → Use Absorbents

If No → next slide…

(Are waste absorbents hazardous waste?)

Cleanup with less than 3 rags?

If Yes → Use the rags

If No → Four-step Floor Cleanup

Four-Step Floor Cleanup

Step 1: Oil Spill First

Use hydrophobic mop.

Step 2: Antifreeze Spill?

Use dedicated antifreeze mop.

Step 3: Dry Surface

Wipe up with rags.

Do not saturate.

Step 4: Wet Mop

Use mild, non-caustic detergent.

Universal Waste

- Fluorescent Bulbs & Tubes
  - Have mercury in them.
  - Cannot be put into dumpster
- Must be recycled!

Why Use Fluorescent Lamps and Tubes?

- Three to four times more energy-efficient.
- Cost less to use.
- Reduce greenhouse gas emissions and other pollution from energy production.
- Last up to ten times longer than standard incandescent light bulbs.

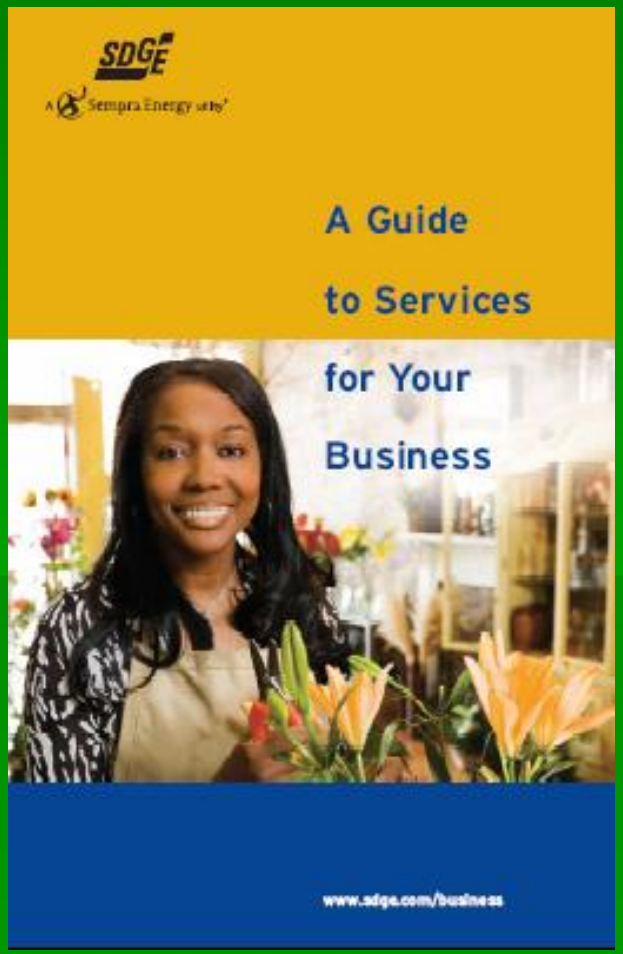
What to Look For When Buying Fluorescent Lamps and Tubes

- Energy efficiency, lumens per watt.
- Long lamp life - minimum of 20,000 hours rated life.
- Save $$, Extend lamp life and conserve energy by turning lights off when not in use.
- Manufacturers or vendors that promote or assist with recycling.

www.energystar.gov/index.cfm?c=cfls.pr_cfls_lumens

Interested in other Energy Saving Tips?

Grab a booklet from the Hazardous Materials Division table.



Summary – 8 Principles

1. Pollution Prevention means reducing waste at its source.
   It's always better to prevent pollution than to manage it.

2. The owner, manager, and mechanics must be committed to P2 for success.

3. Know your waste management costs.
   Understanding costs will help you understand the benefits of minimizing waste generation through P2.

4. Never mix non-hazardous wastes with hazardous wastes.
   The combined waste will be regulated as hazardous. Keep them separate!

Summary – 8 Principles

5. Involve your employees when identifying P2 opportunities.

6. Train all employees in your P2 goals.

7. Identify the processes that generate waste and pollution. This will help you focus on solutions to your pollution problems.

8. Keep up to date on new technologies & ideas for P2.

The Western Regional Pollution Prevention Network's website "Resources" section: (http://www.wrppn.org)

Department of Toxic Substances Control P2 program
1-800-700-5854 or
http://www.dtsc.ca.gov/PollutionPrevention/VSR/index.cfm

AND…

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Questions ???