

Hazardous Waste Training for Self-Audit STEP 2

- Auto body
- Equipment and Tool
Maintenance and Repair (vehicle
or non-vehicle)
- Vehicle Maintenance and Repair



Outline

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Introduction

- Proceed with this training if your company performs at least one of the following services:
 - Auto body
 - Equipment and Tool Maintenance and Repair (vehicle or non-vehicle)
 - Vehicle Maintenance and Repair
- This training is intended to teach you the common wastes in your industry AND cover:
 - Labeling and Closure requirements
 - Disposal Requirements
 - Evaluation Requirements
 - Recordkeeping Requirements
 - Where to Find Other Resources (including factsheets)
- After reviewing this industry-specific training, you will be instructed to finish completing the STEP 2 electronic form.



Where You Find Regulated Wastes



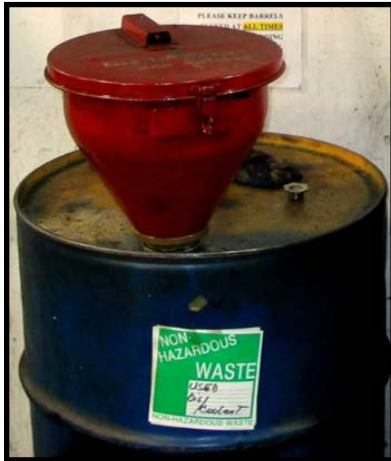
Common Automotive Wastes

This presentation will cover the following automotive wastes in more detail

- Used Oil
 - Shipped Off-Site
 - Burned On-Site in Space Heaters
- Used Oil Filters
- Used Oil Sorbents/Disposable Rags/Floor Dry
- Launderable Rags or Towels
- Petroleum Solvent-Based Parts Washer (PW)
 - Non-Recycling PW Unit
 - Shipped Off-Site
 - Mixed with Used Oil
 - Recycling PW Unit
 - Recycling Units With Distillation Units
 - Recycling Units With Filters
- Water-Based (Aqueous) Parts Washer
- Nonchlorinated Cleaners (e.g. aerosol brake, carburetor, electric, etc.)
- Chlorinated Cleaners (e.g. aerosol brake, carburetor, electric, etc.)
- Lead-Acid Batteries
- Lead Wheel Weights
- Antifreeze
- Fluorescent Lamps
- Refrigerants
- Waste Paint/Spent Thinner
- Paint Thinner Distillation Sludge
- Paint Booth Filters
- Disposable Paint/Solvent Rags



Used Oil – Shipped Off Site



LABELING & CLOSED CONTAINER REQUIREMENTS

- Used oil containers and fill pipes must be labeled “Used Oil”.
- Keep containers closed, and funnel lids latched, when not adding or removing waste

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4010>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Violations:
Failure to close and label used oil



Violations:
Open funnel still in bung opening (not closed) and failure to label used oil



Used Oil – Burned On-Site in Space Heaters



LABELING & CLOSED CONTAINER REQUIREMENTS

- Used oil containers and fill pipes must be labeled “Used Oil”
- Generators with qualifying space heaters can burn their own used oil generated on-site (refer to factsheet link “9070” listed below)
 - Any used oil received from off-site (from a different company) must be tested and shown to be on-specification before being burned in the space heater.



FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=9070>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Used Oil Filters



LABELING & CLOSED CONTAINER REQUIREMENTS

- Filters must be drained to remove free liquids
- Must be labeled “Used Oil Filters”
- Keep containers closed when not adding or removing waste

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4010>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Violations:
Failure to close
and label used oil
filter container



Violations: Used
oil filters in trash



Used Oil Sorbents/Disposable Rags/ Floor Dry



LABELING & CLOSED CONTAINER REQUIREMENTS

- Label containers using the word's "Used Oil".

Examples include:

- "Used Oil Sorbents"
 - "Used Oil Rags"
 - "Used Oil Floor Dry"
- Keep containers closed when not adding or removing waste

DISPOSAL REQUIREMENTS

- Do not dispose oily rags and sorbents like floor dry and paper towels in the trash



Violation:
Used oily
rags in
trash

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4010>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Laundryable Rags or Towels



MORE INFORMATION

- Laundryable rags contaminated with used oil are allowed to be cleaned by an industrial laundry facility
 - Still follow oil sorbent labeling & closure requirements for used rags prior to cleaning
- Laundryable rags contaminated with solvents are allowed to be cleaned by an industrial laundry facility provided no liquids can be removed from the rag through hand wringing or spinning
 - All recovered solvents must be containerized, evaluated and managed separately

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4117>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Parts Washing Solvent (Petroleum-Based) Non Recycling Units



Common Petroleum-based Solvents:

- Petroleum Naptha
- Mineral Spirits
- Stoddard Solvent

DISPOSAL OPTIONS

- Waste solvent is generally disposed off site when spent
- VSQG's and Minimal generators can mix certain waste solvents with their used oil (refer to factsheet link "4096" listed below)

EVALUATION REQUIREMENTS (figuring out if your waste is hazardous)

- Solvent becomes a waste when spent (e.g.: when unusable or when you decide it must be disposed)
- Spent parts washing solvents must be evaluated
 - You may assume your spent solvent is hazardous waste
 - For information about testing, refer to factsheet link "4030" listed below and consult with your waste disposal vendor
 - Though testing can be the most accurate evaluation method, you can also use generator knowledge.
 - ✓ Generator knowledge is inadequate unless you can demonstrate all hazardous waste criteria, including the presence of metals and listed solvents (see factsheets below and slide's 16-18 for more information)

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4096>
- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4030>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Parts Washer Solvent (Petroleum-Based) Recycling Units



DISPOSAL OPTIONS

- Distillation oil or sludge, generated from certain recycling parts washers, could be mixed with use oil (refer to factsheet link “4096” listed below)
- Solvent filters could be mixed with used oil filters (refer to factsheet link “4096” listed below)
 - The filters remove particle contaminants in the solvent, which ultimately prolongs the useful life of the solvent. Though you may have a filtering parts washer, companies may eventually replace their old solvent with new solvent. If you have a filtering parts washer that will eventually require solvent replacement, refer to page 11 for evaluation and disposal information.



FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4096>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Parts Washer Solvent (Petroleum-Based) Recycling Units



EVALUATION REQUIREMENTS (figuring out if your waste is hazardous)

- The usable solvent becomes a “waste” when it is spent just before you recycle it (for example, distillation)
- Solvent must be evaluated when it first becomes a waste
 - You may assume your spent solvent is hazardous waste
 - For information about testing, refer to factsheet link “4030” listed below and consult with your waste disposal vendor
 - Though testing can be the most accurate evaluation method, you can also use generator knowledge.
 - ✓ Generator knowledge is inadequate unless you can demonstrate all hazardous waste criteria, including the presence of metals and listed solvents (see factsheets below and slide’s 16-18 for more information)



FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4096>
- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4030>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Water-Based (Aqueous) Parts Washer

Metro Sewer Authority

Metropolitan Council
Environmental Services
(MCES)

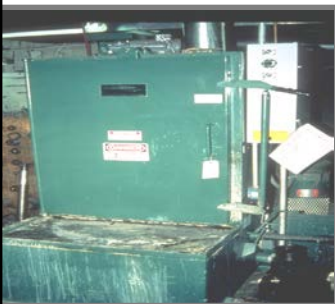
Phone # 651-602-4708

There are a variety of aqueous systems:

- Corrosive solutions (high or low pH bath)
- Detergent (soap-based)
- Heated unit
- Bioremediation/enzymatic unit

DISPOSAL OPTIONS

- Nonhazardous solutions are typically sewered
 - Always seek approval from your sewer authority prior to discharging any waste
- Hazardous solutions are shipped off site
- Skimmer oil, filters and solids can be mixed with your corresponding used oil waste streams



Water-Based (Aqueous) Parts Washer

Metro Sewer Authority

Metropolitan Council
Environmental Services
(MCES)

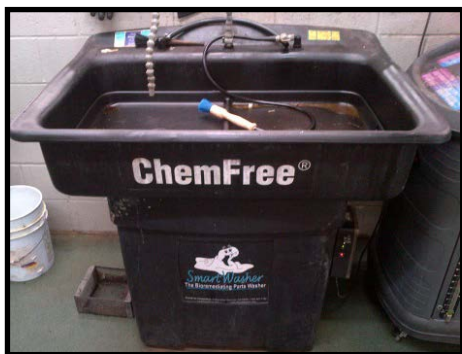
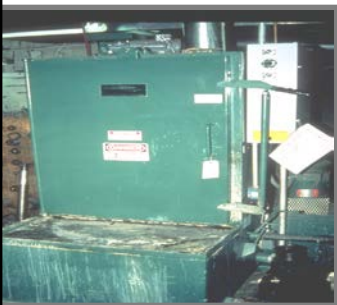
Phone # 651-602-4708

EVALUATION REQUIREMENTS (figuring out if your waste is hazardous)

- Most liquids and solids are nonhazardous
- However, liquids and solids from solutions with **sodium hydroxide** in them are almost always hazardous
- Most companies can use generator knowledge to demonstrate that a spent solution is hazardous or nonhazardous waste
- Testing required in certain situations, depending on the type of cleaner, part being cleaned, potential sources of contamination (like aerosol cleaners) and disposal frequency

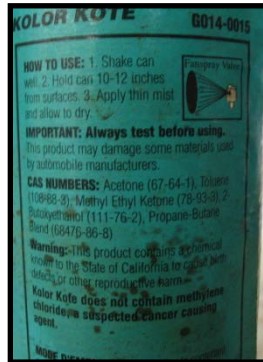
FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4097>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Nonhalogenated Cleaners

(brake, carburetor,
electric, etc.)



COMMONLY ADVERTISED AS NONCHLORINATED DISPOSAL OPTIONS

- Partially-filled (broken) containers can't go into the garbage
- Non-empty containers and solvent residues (drippings) are hazardous wastes and must be collected and managed properly
- If you use rags, towels or disposable wipes to clean up solvent residues (i.e.: wiping parts or cleaning spills on ground), refer to factsheet link "4117" on next page to determine how the rag and solvent within the rag should be disposed
- **Ignitable solvents can be mixed with liquid used oil** (refer to factsheet link "4096" listed on page 13 for more information on the 10% rule)
- **Avoid mixing TOXIC nonhalogenated solvents with your used oil or nonhazardous parts washing unit.** Doing so can result in the waste mixture being an F-listed hazardous waste.



Common **IGNITABLE** nonhalogenated solvents:

- Xylene
- Acetone
- Ethyl Acetate



Common **TOXIC** nonhalogenated solvents:

- Toluene
- Methyl Ethyl Ketone (MEK)
- Benzene

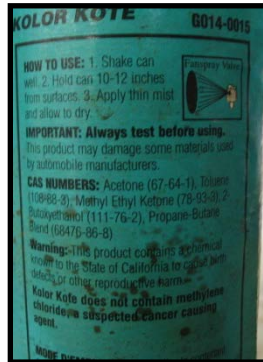


Violation: Partially-filled
broken aerosol in trash



Nonhalogenated Cleaners

(brake, carburetor,
electric, etc.)



Common **IGNITABLE** nonhalogenated solvents:

- Xylene
- Acetone
- Ethyl Acetate



Common **TOXIC** nonhalogenated solvents:

- Toluene
- Methyl Ethyl Ketone (MEK)
- Benzene

EVALUATION REQUIREMENTS (figuring out if your waste is hazardous)

- Even small quantities of **TOXIC** nonhalogenated cleaners mixed with other wastes (e.g.: allowing aerosol residue to drip into a used oil cart, parts washer or used oil sorbents) can make the entire waste mixture an **F-listed hazardous waste**

READ THE INGREDIENTS ON CAN CAREFULLY

- You might be purchasing an aerosol cleaner that is advertised as “Nonchlorinated”, but the solvent may still contain **TOXIC** ingredients like toluene, MEK and benzene. You can use these solvents provided you collect and properly dispose of solvent residues.

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4005>
- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4017>
- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4117>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Halogenated (includes Chlorinated) Cleaners

(brake, carburetor,
electric, etc.)

9	$2p_{3/2}^0$	F Fluorine 18.9984032 $1s^2 2s^2 2p^5$ 17.4228
17	$2p_{3/2}^0$	Cl Chlorine 35.45 $[Ne]3s^2 3p^5$ 12.9676
35	$2p_{3/2}^0$	Br Bromine 79.904 $[Ar]3d^{10} 4s^2 4p^5$ 11.8138
53	$2p_{3/2}^0$	I Iodine 126.90447 $[Kr]4d^{10} 5s^2 5p^5$ 10.4513
85	$2p_{3/2}^0$	At Astatine (210) $[Hg]6p^5$ 9.350



Common TOXIC halogenated solvents:

- Trichloroethylene (TCE)
- Tetra**chloro**ethylene or per**chloro**ethylene (perc)
- Methylene **Chloride**
- 1,1,1 - Trichloroethane



DISPOSAL OPTIONS

- Partially-filled (broken) containers can't go into the garbage
- Non-empty containers and solvent residues are hazardous wastes and must be collected and managed properly
- All F-listed halogenated solvents are toxic, so do not mix toxic halogenated solvent residues with used oil
- If you use rags, towels or disposable wipes to clean up solvent residues (i.e.: wiping parts or cleaning spills on ground), refer to factsheet link "4117" listed below to determine how the rag and solvent within the rag should be disposed

EVALUATION REQUIREMENTS (figuring out if your waste is hazardous)

- Even small quantities of TOXIC halogenated cleaners mixed with other wastes (e.g.: allowing aerosol residue to drip into a used oil cart, parts washer or used oil sorbents) can make the entire mixture an F-listed hazardous waste

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4005>
- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4017>
- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4117>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Lead Acid Batteries



STORAGE REQUIREMENTS

- Place in secondary containment, like a plastic tray
- Tray must be covered if stored outdoors

DISPOSAL OPTIONS

- Must be recycled

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4007>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Lead Wheel Weights



DISPOSAL OPTIONS

- Scrap lead (a toxic heavy metal) must be recycled to be exempted from hazardous waste regulation
- Keep receipts or other records to demonstrate that waste is being recycled
- It's recommended that you label your scrap metal container **“Scrap Lead Wheel Weights For Recycling”** to prevent accidental trash disposal

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4090>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Antifreeze

DISPOSAL OPTIONS

- Many companies dispose of their spent antifreeze offsite for recycling. Some companies are able to recycle and reuse antifreeze on site with proper equipment.
- Companies generating less than 600 gallons per year (or less than 50 gallons/month) of antifreeze can discharge to sanitary sewer in the Minneapolis/St. Paul metropolitan area; outside that area, check with the sewer authority.
 - **Antifreeze contaminated with oil cannot be sewered**
- Companies generating 600 gallons or more per year (or more than 50 gallons/month) of antifreeze cannot sewer and must recycle waste on or off-site.

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4057>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Fluorescent Lamps



STORAGE REQUIREMENTS

- Used lamps must be containerized
- Containers must be closed
- Containers must be labeled:
 - “Used Lamps”,
 - “Waste Lamps”, or
 - “Universal Waste Lamps”

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4007>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Violation: Failure to containerize used lamps



Violation: Intentionally breaking lamps. If a lamp accidentally breaks, you must place in a seal-tight container to prevent an airborne mercury release



Refrigerants



REQUIREMENTS

- Obtain appropriate recycling and/or recovery equipment and certify that equipment with the MPCA
- Employees must be certified
- Keep refrigerant disposal records

OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/gp0r4b6>
- ❖ See **Equipment Certification Form**



Waste Paint/Thinner



LABELING & CLOSED CONTAINER REQUIREMENTS

- Must be labeled:
 - “Hazardous Waste”
 - Clear descriptive name, such as “Paint/Thinner”
 - Accumulation Start Date
- Must be closed when not adding waste

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4033>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Violation: Open funnel in bung opening (open container)



Paint/Thinner Distillation Sludge (generated from a recycling unit)



Violation:

Failure to label
pail of
undistilled
waste
paint/thinner

LABELING & CLOSED CONTAINER REQUIREMENTS

- Containers of untreated solvent and the treated waste distillation sludge (sometimes called “pucks”) must be labeled:
 - “Hazardous Waste”
 - Clear descriptive name, such as “Untreated Paint/Thinner” and “Paint/Thinner Distillation Sludge”
 - Accumulation Start Date

- Keep containers closed when not adding waste

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4033>
- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=9016>
- ❖ <http://www.pca.state.mn.us/veiz8a8>

We recommend you label distilled solvent as clean, useable solvent to distinguish it from waste (undistilled) solvent and sludge



Paint Booth Filters



Nonhazardous paint booth filters are improperly stored outside in an uncovered dumpster. These filters can contaminate stormwater, so they represent a significant material. Read below.

Facilities with **uncovered** scrap bins, trash compactors or other significant materials exposed to the elements need to complete a Stormwater Pollution Prevention Plan, and then apply for stormwater permit coverage

LABELING & CLOSED CONTAINER REQUIREMENTS

- Hazardous waste paint booth filters must be properly labeled and closed (similar storage requirements as hazardous waste paint/thinner)
- Collect the solvent; Don't spray gun cleaning solvents into the filters as it will make the filters hazardous waste
- Never store spent filters outside in an uncovered container, even if they are nonhazardous

DISPOSAL OPTIONS

- Nonhazardous filters are to be managed as an industrial solid waste
- If hazardous waste, send to an authorized hazardous waste disposal facility

EVALUATION REQUIREMENTS (figuring out if your waste is hazardous) – Refer to factsheet link “4083” listed below

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4083>
- ❖ <http://www.pca.state.mn.us/veiz8a8>
- ❖ <http://www.pca.state.mn.us/nwqh14d3> (Stormwater)



Disposable Paint/Solvent Rags



LABELING & CLOSED CONTAINER REQUIREMENTS

- Hazardous waste paint /solvent rags must be properly labeled and closed (similar storage requirements as hazardous waste paint/thinner)

DISPOSAL OPTIONS

- If hazardous waste, send to an authorized hazardous waste disposal facility
- You must follow the flow chart outlined in MPCA's factsheet #4.61 (refer to factsheet link "4117" listed below) to determine whether or not your rags are hazardous waste or nonhazardous waste.

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4117>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Recordkeeping

What Types of Records to Keep & for How Long?

- Waste Evaluation Records (e.g.: analytical, waste profiles, generator knowledge, etc.)
 - Keep for as long as you generate that waste and for at least 3 years after waste is no longer generated
- Recycling and Disposal Records:
 - Keep any recycling and disposal record for 3 years from the date of shipment
 - Shipping paper or receipt
 - Special waste tracking invoice
 - Disposal log
 - Hazardous waste manifest
- Weekly hazardous waste container inspection logs
 - Keep for 3 years

Where to Store Records?

- Must be kept at the site of generation, or
if electronic, be accessible from the site of generation

FACTSHEETS AND OTHER RESOURCES

- ❖ <http://www.pca.state.mn.us/index.php/view-document.html?gid=4039>
- ❖ <http://www.pca.state.mn.us/veiz8a8>



Poor Housekeeping Contributes to Violations



Here are the violations observed from this one inspection:

- Failure to clean up used oil and antifreeze spills
- Failure to clean up waste paint/solvent spills
- Open waste paint/solvent containers
- No labeling on the actual hazardous waste storage container
- Failure to containerize, label and close used oil filters
- Failure to containerize and label used oil rags



How to Avoid Violations



Tips to Avoid Violations

- Report all Wastes
- Apply for License
- Organize Containers
- Label Containers
- Close your Containers
- Clean Up Spills
- Maintain Spill Kits
- Train Your Employees
- Manage Your Waste Properly
- Keep Records
- More information available on our website:

www.hennepin.us/hwgenerators



Enforcement

Citation Factsheet

- ❖ <http://www.hennepin.us/~media/hennepinus/Business/recycling-hazardous-waste/documents/payable-fine-citation-factsheet-april-2012.pdf>
- ❖ www.hennepin.us/hwgenerators

\$575.00 citation for operating without a license

\$575.00 citation for not reporting a waste

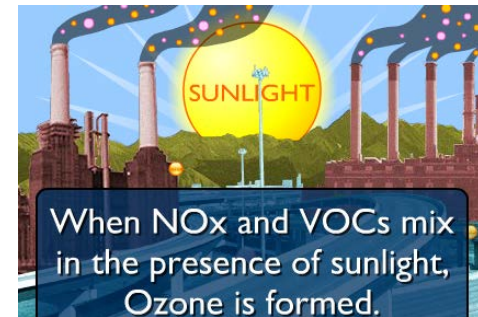
Violation	Rule Reference	Fine	Violation	Rule Reference	Fine
Management of Universal Waste	ORD 7(2)(5)(A)	\$600	"Hazardous Waste" label and description (V)	MNR 7045.0292(6)(F)	\$325
Recordkeeping Universal Waste	ORD 7(2)(5)(D)	\$200	Satellite Labeling	MNR 7045.0292(8)(B)(2)	\$325
Appliance Processor General Duties	ORD 7(2)(6)(A)	\$825	Impermeable Surface - Satellite	MNR 7045.0292(8)(B)(5)	\$825
Appliance Processing PCB Management	ORD 7(2)(6)(B)	\$825	Accumulation Start Date - Satellite	MNR 7045.0292(8)(D)	\$325
Appliance Processing Refrigerant Management	ORD 7(2)(6)(C)	\$825	Manifest Copies on Site	MNR 7045.0294(1)(5)	\$275
Appliance Processing Gas Cooling Equipment Management	ORD 7(2)(6)(D)	\$825	VSQG Collection Program Receipts	MNR 7045.0294(1b)	\$275
Appliance Processing Mercury Management	ORD 7(2)(6)(E)	\$825	Keep Inspection Reports	MNR 7045.0294(2a)	\$275
Appliance Processor Licensing	ORD 7(2)(6)(G)	\$575	Test Result Records	MNR 7045.0294(3)	\$825
Appliance Processing Certification	ORD 7(2)(6)(H)	\$825	Records Easily Available	MNR 7045.0294(5)	\$275
Appliance Processing Signed Statement	ORD 7(2)(6)(I)	\$825	Exception Report	MNR 7045.0298(1)	\$825
Contracts for Demolition	ORD 7(2)(7)(D)	\$825	LQG Job Titles	MNR 7045.0558(6)(A)(B)(C)	\$525
Demolition Recordkeeping	ORD 7(2)(7)(E)	\$825	LQG Annual Training	MNR 7045.0558(6)(D)	\$825
Operating Without License	ORD 7(3)(1)	\$575	LQG Training Records	MNR 7045.0558(7)	\$325
Submit License Renewal Application	ORD 7(3)(5)	\$575	Required Notices	MNR 7045.0562(1)	\$275
Submit License Application – Facility	ORD 7(3)(5)(C)	\$500	Preparedness and Prevention	MNR 7045.0566(2)	\$825

How can you avoid receiving a citation?

1. Report all wastes to Hennepin County using the Step 2 electronic form
2. Finish the steps to obtain a generator license if you are directed to do so
3. Properly manage and dispose of your waste



PREVENT OZONE FORMATION BY REDUCING YOUR VOC EMISSIONS



WHY REDUCE VOLATILE ORGANIC COMPOUNDS (VOC's)?

- **Save money:**
 - Use the right amount of material for the right purpose
 - Be efficient – use and buy less chemicals
 - There may be the added benefits of using less protective equipment, and having less regulation
- **Result in cleaner work environments, which can reduce the risk of fire and have positive impacts on absenteeism and worker retention**
- **Reduce health care costs (even if we do not pay the direct costs of VOC related health care, we all pay the taxes and insurance that cover VOC impacts):**
 - Each decrease of 1 ppb OZONE produces an annual health benefit of \$35 million in Minnesota in 2020



TIPS TO REDUCE VOC's and OZONE FORMATION

- **Used Oil**
 - Shipped Off-Site
 - **Burned On-Site in Space Heaters**
- **Petroleum Solvent-Based Parts Washer (PW)**
 - **Non-Recycling PW Unit**
 - Shipped Off-Site
 - Mixed with Used Oil
 - **Recycling PW Unit**
 - Recycling Units With Distillation Units
 - Recycling Units With Filters
- **Nonchlorinated Cleaners (e.g. aerosol brake, carburetor, electric, etc.)**
- **Chlorinated Cleaners (e.g. aerosol brake, carburetor, electric, etc.)**
- **Waste Paint/Spent Thinner**
- **Paint Thinner Distillation Sludge**
- **Paint Booth Filters**
- **Disposable Paint/Solvent Rags**
- **Launderable Rags or Towels**
- **Conduct routine maintenance of your used oil heater to ensure it is in proper operating condition and allows for complete combustion of used oil.**
- **Only burn used oil for heating purposes, and do not burn during summer months**
- **Switch to higher flash point solvents to reduce evaporation and fire risk**
- **Replace your solvent-based parts washer with a water-based (aqueous) parts washer**
- **Use refillable aerosol containers to eliminate the propellant**
- **Purchase LOW VOC aerosols**
- **Capture emissions (e.g. carbon absorption; sealed rag containers; spray gun cleaning solvent into a container rather than into air; store VOC liquids and wastes in sealed containers)**
- **Switch your solvent-based paint system with a water-borne paint system**



GRANT MONEY AVAILABLE TO REDUCE VOC & OTHER EMISSIONS

- Minnesota Pollution Control Agency (MPCA) (<http://www.pca.state.mn.us/ktqh28>)
 - \$320,000 in grants are available from State of Minnesota to reduce VOC use
 - For EA Grant Program assistance, contact [Mary Baker](#): 651-757-2208 or 1-800-657-3864 toll free

DEADLINE AUGUST 13, 2014

- City of Minneapolis Businesses: <http://www.minneapolismn.gov/environment/WCMS1P-105418>
 - **Innovative Green Grant** - The City of Minneapolis is offering grants up to \$45,000 each, to help fund innovative green business practices that focus on air quality improvement by reducing VOC emissions, particulate matter emissions, or other significant Hazardous Air Pollutants.
 - **Vehicle Repair, Service, and Maintenance Businesses** - The City of Minneapolis is offering grants up to \$20,000 each to help fund vehicle repair, service, and maintenance businesses move to painting, cleaning alternatives, and repair processes that reduce emissions, hazardous waste, or energy usage.

DEADLINE JUNE 20, 2014

- Visit MnTAP's website for VOC reduction idea
http://www.mntap.umn.edu/industries/air/current_events.html
 - **MnTAP will assist with grant and loan applications** as needed to help complete application paperwork or to develop proposals. Contact Matt Domski at 612-624-5119 for assistance.



Recap & Your Next Steps

- Congratulations, you have finished the STEP 2 automotive training.
- Please return to the STEP 2 electronic form and complete the fields. **You may use this presentation to help answer the STEP 2 questions, so we suggest you keep this presentation open.**
- If you have questions about this training, please call 612-348-3777 and ask for the environmentalist on call.

