

ENVIRONMENTAL PROTECTION HANDBOOK

FEBRUARY, 2013

University of Kentucky
Environmental Health and Safety
Environmental Management Department
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ADAPTED FROM:

Kentucky Transportation Cabinet and Kentucky Transportation Center. 2005. *Environmental Handbook for Management of Highways and Transportation Facilities.*

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City of Bowling Green. 2006. *Environmental Handbook for City of Bowling Green Facilities Management.*

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Carefully pour chemicals directly into the sprayer tank and use a water supply with a backflow preventor to dilute to the needed concentration.

DO

- ✓ Place drums on pallets to move with a forklift.
- ✓ Store chemicals in the original container in a clean, dry location.
- ✓ Check spray equipment for leaks before use.
- ✓ Pump or pour chemicals directly into the spray tank of the sprayer unit.
- ✓ Use a water supply that has a backflow preventer to dilute chemicals to the needed concentration.
- ✓ Carefully watch the fill sight tube to avoid overfilling the spray tank.
- ✓ Rinse empty containers three times and pour rinse water into the spray tank.
- ✓ Apply all chemicals per label directions.
- ✓ Have a spill kit and an empty container available when chemicals are delivered or moved.
- ✓ Replace used spill kit materials promptly after use.

DON'T

- ✗ Don't accept leaking containers from delivery trucks.
- ✗ Don't overfill the spray tank.
- ✗ Don't reuse or burn empty chemical containers.

Tips and Tricks

- ! Park delivery vehicle on the uphill side of the tank to drain delivery hose easily.
- ! Contact UK Environmental Management for list of needed spill kit contents
- ! UK Environmental Mgmt. 859-323-6280

Materials & Waste Management

- ▲ Return refillable chemicals containers to the vendor if applicable.
- ▲ Store containers in a designated location to protect from damage, destruction or theft.
- ▲ Containers that cannot be returned or recycled will be punctured and sent to a solid waste landfill that has agreed to accept the containers.
- ▲ Do not dispose of absorbed materials and soils that contain chemicals and are hazardous. Contact UK Environmental Management for assistance.

Facility Checklist

- ☐ Check **EACH** delivery shipment and do not accept leaking containers.
- ☐ Check chemical mixing and spraying operations **WEEKLY**.
- ☐ Check equipment including sprayers and pumps **WEEKLY** during application season.
- ☐ Check chemicals spill kits **MONTHLY** and promptly restock after use.
- ☐ Check chemical storage location **ANNUALLY**.
- ☐ Review chemical handling procedures **ANNUALLY**, improve as needed.
- ☐ Ensure MSDS sheets are current and available **ANNUALLY**.
- ☐ Ensure personnel handling and applying chemicals are trained and certified.

If...Then

- Quickly contain and clean up spills or leaks using absorptive devices from spill kits.
- Return spilled chemicals to the spray tank.
- Contain absorbed material from spills or leaks and distribute it at a target chemical application site.
- If absorbed chemical material cannot be used, conduct a waste determination. Clean-up from spilled materials that are found to be non-hazardous can be disposed in a solid waste landfill.
- Contact UK Environmental Management for guidance regarding spills.
- Call 911 immediately for large spills.

Training: 1 per Year

Season: Spring

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



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NOTES

- 1) UK Environmental Management is located at 355 Cooper Drive, Lexington, KY 40506-0490, 859-323-6280, ehs.uky.edu/env



The drainage system works more efficiently when curbs and grates are clean. Pollutants entering the stormwater system are reduced, protecting water quality. Litter pick up improves the aesthetics of our campus.

DO

- ✓ Inspect equipment prior to use and maintain the mower as needed.
- ✓ Inspect area prior to mowing and remove any objects that could become a projectile (such as stones and woody debris).
- ✓ Pick up all litter (paper, cardboard) prior to mowing area.
- ✓ Separate unknown wastes and wastes requiring special management from lawn litter during pickup operations.
- ✓ To the extent possible, contain litter in bags to reduce weather exposure.
- ✓ Clean debris and litter from stormwater structures to improve drainage and reduce stormwater pollution.
- ✓ At the shop, litter should be placed in the solid waste dumpsters.
- ✓ After application of the proper rate of granular herbicide, pesticide, or fertilizer, all residues are to be blown or swept from all hardscape.
- ✓ Liquid products are to be applied in a manner to dry before a rain event.
- ✓ If you encounter liquid contaminates in the landscape or on the ground, refer to **Fact Sheets 10.1 and 10.2** for clean-up procedures.

DON'T

- ✗ Don't mix unknown wastes or wastes requiring special management with litter or dispose into drains or solid waste containers.
- ✗ Don't dispose of litter at any location other than a solid waste receptacle.
- ✗ Don't blow grass clipping, leaves, sticks, cigarette butts, or litter into storm drains or onto impervious areas.
- ✗ Don't mow over and shred litter.
- ✗ Do not blow granular chemicals into patios, sidewalks, curbs, parking lots, streets, or storm inlets.
- ✗ Wash equipment over or near a storm inlet. (See **Fact Sheet 8.7**)

Facility Checklist

- ☐ Ensure that wastes requiring special management are handled properly.
- ☐ Inspect equipment prior to use for fluid leaks.
- ☐ Inspect area prior to mowing and remove any objects that could become a projectile.

Tips and Tricks

- ! Since most litter is considered non-hazardous, it can be disposed of in the dumpster.
- ! Optimize productive mowing time by planning mowing routes so that you are near disposal areas when your trash bags near capacity.
- ! UK Environmental Mgmt. 859-323-6280.

If...Then

- If you find debris that you consider different than "daily litter", then report it to your supervisor.
- If dumpsters are not available, tie trash bags closed and place them in a common area for pick up later. Secure them from blowing away in the wind.
- Ask the supervisor to contact UK Environmental Management for assistance with potentially dangerous waste.
- If you encounter human fluids or waste, have the supervisor contact UK Environmental Management immediately.

Training: 1 per Year

Season: Summer

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



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Photo from http://www.123rf.com/photo_4874059_man-on-commercial-zero-turn-lawn-mower-taking-care-of-large-property.html

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Don't pump pit fluids into storm drains without testing the water quality of the discharge.

DO

- ✓ Use pit drains to dispose of ground water and Stormwater seepage only.
- ✓ Pit Drains should have valves to close them in the event of a spill.
- ✓ Remove accumulated debris from the pit to prevent it from entering the drain.
- ✓ Clean the drain as needed to remove accumulated debris.
- ✓ Promptly repair leaks to the drain sump.
- ✓ Determine if a drain is necessary. If not, fill the drain with a plumber's plug or concrete.
- ✓ Chiller water should be captured and returned to the system or disposed of into the sanitary sewer.
- ✓ Consider pit drain conversion to sanitary sewer, if feasible.

DON'T

- ✗ Don't use the drain like a trash can.
- ✗ Don't allow spilled chemicals to get to the drain.
- ✗ Don't pump pit fluids into storm drains without testing the water quality of the discharge.
- ✗ Steam condensate shall not be discharged into the storm sewer system.

Materials & Waste Management

- ▲ Air dried sludge from pit may be disposed in a dumpster.
- ▲ Hazardous sludge from a spill must be managed by a hazardous waste vendor. Contact UK Environmental Management for assistance.
- ▲ If the facility is connected to a sanitary sewer, the water (not the hazard waste or sludge) from the pit may be discharged to the sanitary sewer system.
- ▲ An industrial cleaning service should be used to clean pits, drains and sumps when necessary.

Facility Checklist

- ☐ Check the drain trap **ANNUALLY** for debris accumulation and leaks.
- ☐ Check the pit **ANNUALLY** for solids accumulation on the bottom and floating material on the surface.

Tips and Tricks

! UK Environmental Mgmt. 859-323-6280

If...Then

- If fluid from dewatering of the pit is contaminated with solvents or due to a spill, conduct a hazardous waste determination.
- If solvents or chemical wastes are spilled, contain the spill and clean up using a spill kit. (See **Fact Sheet 10.1**) or Environmental Contractor. UK Environmental Management can offer assistance.

Training: 1 per Year

Season: Spring

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



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Photo from http://www.fibrelite.com/cs_us-ne-university.aspx

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Storing rock salt in a covered dome helps to protect surface and ground water from chloride contamination.

DO

- ✓ Check for, and correct, deficiencies in salt storage units.
- ✓ Keep salt dry by covering the dome entrance or the face of the salt pile with tarps.
- ✓ Sweep the storage areas clean before salt delivery and sweep up spilled salt after delivery.
- ✓ Move delivered salt into storage immediately.
- ✓ If salt is stored on an uncovered concrete or asphalt pad, shape the salt pile to avoid pooling water and cover immediately with a tarpaulin weighted with sand bags, cinder blocks, tires on ropes, etc.
- ✓ Store dry calcium chloride indoors on pallets.
- ✓ Load salt trucks on a paved surface.
- ✓ Sweep the paved staging area prior to loading trucks and sweep spilled salt back into storage.
- ✓ Load what is needed for the job and return unused product to storage.
- ✓ Use grading, berms, swales, curbs and dikes to prevent stormwater run-on and run-off; direct downspouts away from storage and loading areas.

Tips & Tricks

- ! Traffic dividers can be used to improve stockpiles of salt.
- ! UK Environmental Management can assist with Stormwater best management practice (BMP) selection
- ! UK Environmental Mgmt. 859-323-6280

DON'T

- ✗ Don't leave salt unprotected from weather.
- ✗ Don't store salt on permeable surfaces.
- ✗ Don't use building walls as a backing for loading.
- ✗ Don't overfill storage areas.

Materials & Waste Management

- ▲ Dry calcium chloride or rock salt that becomes dirty is to be worked into future snow and ice operations.

Facility Checklist

- ☐ Check **EACH** salt delivery operation.
- ☐ Check salt pads **DAILY** for proper cover with tarps and signs of runoff when in use.
- ☐ Check salt storage domes and sheds **DAILY** during snow and ice season (October to April) for water-tight roof & floors, tarpaulin covers for entrances, ventilation fans, lights, and building damage. Immediately report repair needs to the facility superintendent.
- ☐ Check salt storage areas for white chloride deposits **DAILY** during snow and ice season and **WEEKLY** during the rest of the year.
- ☐ Check salt domes, sheds and pads **MONTHLY** between May and September for structural integrity and runoff issues.
- ☐ Check salt pads **ANNUALLY** during summer for cracks and wear; repair as needed.
- ☐ To prevent salt tracking watch for and move salt away from storage entrances where rain is blown in.

If...Then

- If bags of dry calcium chloride break open, sweep up and put into a new bag or clean container for future use.
- If rainfall pools around salt storage areas, construct a drainage ditch, dikes or re-grade the area to send runoff to an area treated by a Stormwater Best Management Practice.
- If possible, the entrances of new salt storage facilities will face away from prevailing weather.

Training: 1 per Year

Season: Fall

Relevant Environmental Programs

- ☐ Air Quality
- ☐ 401/404/WQC
- ☒ KPDES
- ☒ MS4

- ☒ GWPP
- ☐ Waste
- ☐ Pesticides
- ☐ SPCC



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Clean trucks in an approved location.

DO

- ✓ Work in locations designated by the facility supervisor. (**See Section 8.7**)
- ✓ Clean trucks indoors only after obtaining the Supervisor's approval.
- ✓ Use shovels or other hand tools to scrape salt from the truck bed.
- ✓ Return loosened salt to the covered salt storage area for reuse.
- ✓ Use water to clean remaining salt from the vehicle and spreader.
- ✓ When washing trucks indoors, keep overspray off of the walls and doors of the maintenance building. Salt corrodes the metal parts.
- ✓ Keep water from running into storage stock piles or storage buildings.
- ✓ Inspect equipment during cleaning operation and maintain as needed.

DON'T

- ✗ Don't let overspray collect on overhead doors and walls when cleaning vehicles indoors.
- ✗ Don't wash equipment in areas not designated for this activity.

Materials & Waste Management

- ▲ Return loosened salt to the covered salt storage area for reuse.

Facility Checklist

- ☐ Ensure that trucks are being washed in the location specified by the Facility Supervisor.
- ☐ Ensure loose salt is returned to the covered salt storage area.
- ☐ Check all storage locations and ensure all salt is under cover and cleaned up.
- ☐ Check truck washing and salt staging areas for white salt deposits; adjust operations to avoid salt build-up.
- ☐ Check brine tanks, product valves closed, containment drains are capped or closed.
- ☐ Ensure that salt stored on pads is covered with tarps that are secured to keep them in place under windy conditions.

Tips and Tricks

- ! Tarps can be held in place using tires with ropes affixed to keep them spaced evenly over the stock piles.
- ! UK Environmental Management can assist with selecting an acceptable work area.
- ! UK Environmental Mgmt. 859-323-6280

If...Then

- If the pressure washer or steam cleaner is used, see **Section 8.8**.
- If salt builds up on the pavement or the ground, correct drainage and/or improve housekeeping to prevent salt accumulation.

Training: 1 per Year

Season: Winter

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



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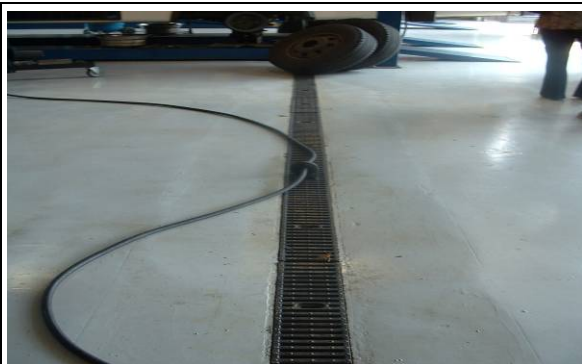
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Photo from: Indiana Dept. of Transportation. 2004. *Innovative Environmental Management of Winter Salt Runoff Problems at INDOT Yards*

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Don't pour waste fluids into floor drains.

DO

- ✓ Use floor drains to dispose of wash water only.
- ✓ Floor drains are required to have a grit collector and oil/water separator.
- ✓ Remove accumulated materials from the oil trap if spills enter the drain.
- ✓ Clean the floor drain at least annually.
- ✓ Promptly repair leaks to the floor drain sump.
- ✓ Determine if a floor drain is necessary. If not, fill the drain with a plumber's plug or concrete.
- ✓ Only floor drains connected to sanitary sewer are permitted.
- ✓ Oil removed from the oil/water separator shall be stored in approved drums for separate disposal and/or recycling.

DON'T

- ✗ Don't use the floor drain like a trash can.
- ✗ Don't pour waste oil, antifreeze, paint, cleaning fluids or other material into the floor drain.
- ✗ Don't allow spilled chemicals to get to the floor drain.
- ✗ Adding oil from the oil/water separator to the used oil tank is not recommended.

Materials & Waste Management

- ▲ Air dried sludge from floor drain may be disposed in a dumpster.
- ▲ Hazardous sludge from a spill must be managed by a hazardous waste vendor. Contact UK Environmental Management for assistance.
- ▲ If the facility is connected to a sanitary sewer, the water (not the oil) from the oil/water separator may be discharged to the sanitary sewer system.
- ▲ An industrial cleaning service should be used to clean floor drains and oil/water separators at least annually or more often as needed.

Facility Checklist

- ☐ Check the drain trap **MONTHLY** for oil accumulation and leaks.
- ☐ Check grit collector and oil/water separators **ANNUALLY**.
- ☐ Check the floor drain **MONTHLY** for solids accumulation on the bottom and floating material on the surface.
- ☐ Check spill kit **MONTHLY** and promptly restock after use.

Tips and Tricks

- ! Contact UK Environmental Management for list of needed spill kit contents.
- ! UK Environmental Mgmt. 859-323-6280

If...Then

- If used oil from the oil/water separator is contaminated with solvents or due to a spill, conduct a hazardous waste determination. Contact UK Environmental Management for assistance.

Training: 1 per Year

Season: Spring

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



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Kentucky Department for Environmental Protection. *Preventing Ground Water Pollution: Oil/Water Separators*. Undated. Division of Water, Ground Water Branch. Frankfort, Kentucky.

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Leaking above ground storage tanks can cause fires or explosions. In addition, leaking ASTs can contaminate nearby surface water and ground water.

DO

- ✓ Tanks must be located on an asphalt or concrete base or on impermeable soil and be provided with secondary containment.
- ✓ Keep product transfer valves closed when not in use.
- ✓ Check the condition of the tank for damage, spills, leaks or other issues each time the tank is used.
- ✓ Promptly report concerns to the Superintendent.
- ✓ Fuel and Oil transfer from ASTs to small containers should occur over a spill pallet.
- ✓ A trained employee shall be present during all filling operations.
- ✓ Ensure that all connections are tight before filling or pump out operations begin.
- ✓ Smaller containers should be stored indoors in locked cabinets and/or spill pallets

SECONDARY CONTAINMENT DO

- ✓ Secondary containment for tanks must be at least 110% of tank capacity.
- ✓ Remove collected oil before release of rain water.
- ✓ Release rainwater or snowmelt before the depth inside the containment unit reaches one foot.

DON'T

- ✗ Don't accept deliveries or continue to use tanks that are known or suspected to be leaking.
- ✗ Don't add to storage tanks that are full.
- ✗ Don't allow release of oil or other contaminants.

Materials & Waste Management

- ▲ See **Fact Sheet 9.6** for used oil storage tank management.

Facility Checklist

- ☐ Check tank filling and containment draining **DAILY** or during activity.
- ☐ Visually check the secondary containment and tank area **MONTHLY** and report leaks, spills and maintenance issues to the Superintendent immediately.
- ☐ Check valves, automatic shut-off valves and pipes **MONTHLY** and before materials transfer.
- ☐ Check corrosion resistant tanks and pipes at the manufacturer's recommended schedule.
- ☐ Check spill kit **MONTHLY** and promptly restock after use. (See **Fact Sheet 10.1**)

Tips and Tricks

- ! Above Ground Storage Tanks include: oil, used oil, hydraulic fluid, transmission fluid, antifreeze, etc.
- ! A container is any tank or drum and includes stationary and mobile (fuel or hydraulic) tanks.

If...Then

- Contain and clean-up spills and leaks immediately. Spilled material that are wastes or are suitable for use can be returned to the tank or similar container. (See **Fact Sheets 10.1 and 10.2**)

Training: 1 per Year

Season: Spring

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



INFORMATION SOURCES

40 CFR 112 Oil Pollution Prevention (SPCC Requirements)

Kentucky Department for Environmental Protection. *Preventing Groundwater Pollution: Secondary Containment*. Undated. Division of Water, Ground Water Branch. Frankfort, Kentucky.

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City of Bowling Green. 2006. *Environmental Handbook for City of Bowling Green Facilities Management*. (Fact Sheet 8.3)

NOTES

- 1) For more information regarding Kentucky's Fire Code and Safety Standards for AST's, go to <http://www.pmlis.com/ast.html>.



Secondary containment is used to protect the area in the event of a spill.

DO

- ✓ Locate the bulk liquid storage area where spill containment can be readily accomplished, away from floor drains, or where spills could reach water in the area designated in the permit.
- ✓ Secondary containment requirements (100% for indoor drums, 110% for outdoor drums) apply to bulk oil (motor, hydraulic, tack) and grease.
- ✓ Place containers that are in use on spill pallets.
- ✓ Bulk liquids may be moved with front-end loader, backhoe, forklift or other equipment. The container should be secured with chains or other restraining devices.
- ✓ Forklifts should have a barrel or tote lifter.
- ✓ Use a pump or valve and tilt rack to transfer bulk liquids to smaller containers or for use.
- ✓ Completely empty containers.
- ✓ Smaller containers should be stored indoors in locked cabinets and/or spill pallets.
- ✓ Fluid transfer from Bulk to small containers should occur over a spill pallet.

DON'T

- ✗ Don't allow any leaking containers to be unloaded from delivery trucks.
- ✗ Don't dispose of unused bulk liquids in any floor drains, streams, sinkholes, storm sewers, sanitary sewers or on the ground.
- ✗ Don't store drums upright in the outdoors where water can damage the container and contaminate the contents. Consider indoors storage of all drums.
- ✗ Do not store materials that can freeze in unheated areas.

Materials & Waste Management

- ▲ Empty drums that are not collected by the vendor shall be sent to a solid waste landfill.
- ▲ Spilled materials that are suitable for use can be returned to the tank or similar container.

Facility Checklist

- ☐ Check **ALL** bulk liquid deliveries to ensure all containers are intact before unloading.
- ☐ Check liquid bulk storage areas **MONTHLY** to ensure containers are intact.
- ☐ Check drums for labeling, bulging, rusting or other damage.
- ☐ Check spill kit **MONTHLY** and promptly restock after use.

Tips and Tricks

- ! Purchase oil in small containers (less than 50 gallons) to help keep from having to implement an SPCC plan.
- ! **Bulk liquids** are stored in 55 gallon or larger containers.
- ! AST's shall be clearly labeled and handled separately.
- ! **Empty** means "no removable residue" remains in the container.
- ! **Empty** for 55 gallon drums means less than 1 inch of liquid remains in the drum.
- ! SPCC requirements apply to bulk oil and grease storage.
- ! Empty drums found should be checked by UK Environmental Management and disposed of properly.
- ! Before sending marked or labeled drums to landfill, call vendor to request pick up.
- ! UK Environmental Mgmt. 859-323-6280

If...Then

- Have a spill kit and an empty barrel available at all times to contain spills or leaks.
- Contain and clean up spills using spill kits. See **Fact Sheets 10.1 and 10.2.**

Training: 1 per Year

Season: Spring

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



INFORMATION SOURCES

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Kentucky Transportation Cabinet. *Groundwater Protection Plan for the Kentucky Transportation Cabinet's Marshall County Maintenance Facility and Operations, District One (1), County Number 079, Lot Number 450*. Undated. Benton, Kentucky.

Kentucky Transportation Cabinet. *Spill Prevention Control and Countermeasures Plan Template*. February, 2003. Frankfort, Kentucky.

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City of Bowling Green. 2006. *Environmental Handbook for City of Bowling Green Facilities Management*. (Fact Sheet 8.5)

NOTES

- 1) UK Environmental Management is located at 355 Cooper Drive, Lexington, KY 40506-0490, 859-323-6280, ehs.uky.edu/env.
- 2) KY Environmental Response Team 800-928-2380 or 502-564-2380



Proper storage and use of fertilizer protects ground water, wells and streams from nutrient pollution.

DO

- ✓ Store bags of fertilizer, dry calcium chloride or other bulk materials indoors, on pallets, in clean, dry, weather-tight facilities.
- ✓ Use a storage area with a concrete or paved floor.
- ✓ Keep brooms, shovels, bags or other containers, in the work area to clean up spills.
- ✓ Bulk materials not in bags are to be applied when purchased.

DON'T

- ✗ Don't store any fertilizer, calcium chloride or other bulk materials outside.
- ✗ Don't store bulk materials that are not in bags.
- ✗ Don't store bulk materials in wet locations or where rainwater runs toward the storage location.
- ✗ Don't store bags of bulk materials on dirt floors.
- ✗ Don't dispose of un-used bulk materials in streams, storm drains, sanitary sewers, or sinkholes.

Materials & Waste Management

- ▲ Excess fertilizer should be properly stored.

Facility Checklist

- ☐ Check storage areas **MONTHLY** for proper storage.
- ☐ Check the storage area **ANNUALLY** to ensure it is weather tight.
- ☐ Review storage procedures **ANNUALLY**, improve as needed.

Tips and Tricks

- ! This fact sheet does not apply to bulk storage of road salt. (see **Fact Sheet 7.1**)
- ! UK Environmental Mgmt. 859-323-6280

If...Then

- Spilled bulk materials must be swept up for reuse.
- If spilled materials cannot be re-used, UK Environmental Management should be contacted for guidance on disposal.
- Notify the UK Environmental Management when bulk dry materials are spilled and are or can be exposed to weather.

Training: 1 per Year

Season: Spring

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



INFORMATION SOURCES

Kentucky Transportation Cabinet. *Environmental Awareness: A Road Master Training Course*. Undated. (Unit 5 Groundwater p 11, p 32)

Kentucky Transportation Cabinet and Kentucky Transportation Center. 2005. *Environmental Handbook for Management of Highways and Transportation Facilities*. (Fact Sheet 2.2.3)

City of Bowling Green. 2006. *Environmental Handbook for City of Bowling Green Facilities Management*. (Fact Sheet 8.6)

NOTES

- 1) UK Environmental Management is located at 355 Cooper Drive, Lexington, KY 40506-0490, 859-323-6280, ehs.uky.edu/env.



Clean trucks and equipment in the designated location.

DO

- ✓ Wash vehicles in the vehicle wash station that drains to a grit collector and oil/water separator.
- ✓ Outside washing areas must be in designated areas only. Designated area should be reviewed by UK Environmental Management and approved by the facility supervisor.
- ✓ Keep vehicles and equipment in clean and good working order.
- ✓ Repair leaks of oil, transmission and hydraulic fluid, radiators, etc., promptly.
- ✓ Collect waste wash water from degreasing and place it in containers for removal and proper disposal.
- ✓ See **Fact Sheet 8.8** when using pressure washers and steam cleaners.
- ✓ See **Fact Sheet 7.5** for post winter storm cleanup.

DON'T

- ✗ Wash trucks and equipment in outside areas that drain directly to storm drains.
- ✗ Don't allow pressure washer overspray to collect on building walls or doors.
- ✗ Don't allow spilled solvent or degreasing wastes to reach the floor drain.
- ✗ Don't use soaps or detergents for outdoor cleaning operations.

Materials & Waste Management

- ▲ Store collected drip pan waste in clearly labeled drums.
- ▲ Conduct a hazardous waste determination for collected degreasing wastes.
- ▲ Dispose of collected wastes using an industrial waste vendor.

Facility Checklist

- ! Check to ensure vehicle and equipment cleaning is being done in the designated location.

Tips and Tricks

- ! Grass areas are an acceptable alternative to wash down vehicles and equipment to clean them of dirt from typical road or mowing use.
- ! The supervisor will know where approved wash locations are located.
- ! PPD Grounds has a vehicle wash facility. Contact PPD for more information. 859-257-3844.
- ! UK Environmental Mgmt. 859-323-6280.

If...Then

- If solvents or degreasing wastes are spilled, contain the spill and clean up using a spill kit. Contact UK Environmental Management for guidance for proper disposal.

Training: 1 per Year

Season: Fall

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



INFORMATION SOURCES

Kentucky Transportation Cabinet. *Environmental Awareness: A Road Master Training Course*. Undated. (Unit 5 p 25)

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City of Bowling Green. 2006. *Environmental Handbook for City of Bowling Green Facilities Management*. (Fact Sheet 8.7)

Photo from www.waste2water.com *Equipment and Vehicle Washing Idea Book*

NOTES

- 1) UK Environmental Management is located at 355 Cooper Drive, Lexington, KY 40506-0490, 859-323-6280, ehs.uky.edu/env.



Wastes from pressure washers must be carefully managed to prevent contamination and ensure permit compliance.

DO

- ✓ Operate the pressure washer as per the manufacturer's operating instructions.
- ✓ For outdoor cleaning, use water only (no soap).
- ✓ Collect all wastewater from water-based or solvent-based *degreasing operations* in drip pans.
- ✓ Store drip pan waste in drums and conduct a hazardous waste determination.
- ✓ For outdoor *cleaning operations*, wastewater must flow to a BMP.
- ✓ Remove dirt from heavy equipment outdoors.
- ✓ See **Fact Sheet 7.5** for cleaning salt and deicer trucks.
- ✓ When using pressure washers to clean equipment, use only in designated vehicle wash areas. See **Fact Sheet 8.7**.

DON'T

- ✗ Don't allow pressure washer overspray to get on building walls or doors.
- ✗ Don't allow spilled solvent or degreasing wastes to reach the floor drain.
- ✗ Don't use soaps or detergents for outdoor cleaning operations.
- ✗ Don't degrease outdoors.

Materials & Waste Management

- ▲ Store collected drip pan waste in clearly labeled drums.
- ▲ Conduct a hazardous waste determination for collected degreasing wastes.
- ▲ Dispose of collected degreasing wastes using an industrial waste vendor.

Facility Checklist

- ☐ Identify and approve work locations and conditions for pressure washers.
- ☐ Check use of pressure washers **ANNUALLY** to ensure proper procedures are being followed.
- ☐ Check runoff from outdoor use **AT RANDOM** several times per year to ensure that use will not cause a violation of the permit limits.
- ☐ Check spill kit **MONTHLY** and promptly restock after use.

Tips and Tricks

- ! Cleaning operation means removing deicers or dirt from equipment and vehicles using water only.
- ! Degreasing operation means using the pressure washer with water or solvents to remove grease, tar, oils, etc., from engines, vehicles and equipment.
- ! The preferred discharge location for pressure washer cleaning operations is to a floor drain that is connected to a sanitary sewer system.
- ! Soaps and detergents can cause emulsions and lead to failure of oil/water separators.

If...Then

- If solvents or degreasing wastes are spilled, contain the spill and clean up using a spill kit.
- If collected degreasing waste determination states the waste is hazardous, then collect the waste for proper management. **DO NOT** dispose of the waste in streams, storm drains, sanitary sewers, or sinkholes.

Training: 1 per Year

Season: Fall

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



INFORMATION SOURCES

Kentucky Transportation Cabinet. *Environmental Awareness: A Road Master Training Course*. Undated. (Unit 5 p 25)

Kentucky Transportation Cabinet. *Groundwater Protection Plan for the Kentucky Transportation Cabinet's Marshall County Maintenance Facility and Operations, District One (1), County Number 079, Lot Number 450*. Undated. Benton, Kentucky. (pages 32, 49)

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City of Bowling Green. 2006. *Environmental Handbook for City of Bowling Green Facilities Management*. (Fact Sheet 8.8)

NOTES



Clean painting equipment in the designated location.

DO

- ✓ Wash equipment in the paint room that drains to a collector or sanitary sewer.
- ✓ Outside washing areas must be in designated areas only. Designated area should be reviewed by UK Environmental Management and approved by the facility supervisor.
- ✓ Keep equipment in clean and good working order.
- ✓ Repair equipment leaks of oil and other fluids promptly.
- ✓ Collect waste wash water and place it in containers for removal and proper disposal if an approved drain is not nearby.
- ✓ See **Fact Sheet 8.8** when using pressure washers and steam cleaners.

DON'T

- ✗ Wash equipment in outside areas that drain directly to stormdrains.
- ✗ Don't allow pressure washer overspray to collect on building walls or doors.
- ✗ Don't allow spilled solvent wastes to reach the floor drain.
- ✗ Don't use soaps or detergents for outdoor cleaning operations.

Materials & Waste Management

- ▲ ALL paint must be non-hazardous.
- ▲ Store collected drip pan waste in clearly labeled drums.
- ▲ Conduct a hazardous waste determination for collected wastes.
- ▲ Dispose of collected wastes using an industrial waste vendor.

Facility Checklist

- ☐ Check to ensure equipment cleaning is being done in the designated location.
- ☐ Drain is connected to Sanitary Sewer and approved for use.
- ☐ Check aerosol can disposal drum and have it picked up by UK Environmental Management when full.
- ☐ Assure aerosol can disposal drums are labeled as "Hazardous Waste"

Tips and Tricks

- ! Use eco-friendly paints when feasible.
- ! UK Environmental Mgmt. 859-323-6280.
- ! Commonwealth Stadium and Shivley Field have indoor paint storage facilities.

If...Then

- If solvents or degreasing wastes are spilled, contain the spill and clean up using a spill kit. (See **Fact Sheet 10.1**)

Training: 1 per Year

Season: Spring

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



INFORMATION SOURCES

Kentucky Transportation Cabinet. *Environmental Awareness: A Road Master Training Course*. Undated. (Unit 5 p 25)

Kentucky Transportation Cabinet. *Groundwater Protection Plan for the Kentucky Transportation Cabinet's Marshall County Maintenance Facility and Operations, District One (1), County Number 079, Lot Number 450*. Undated. Benton, Kentucky. (p 49, p 32)

Kentucky Transportation Cabinet and Kentucky Transportation Center. 2005. *Environmental Handbook for Management of Highways and Transportation Facilities*. (Fact Sheet 3.11)

New York State Department of Transportation. *Environmental Handbook for Transportation Operations A Summary of the Environmental Requirements and Best Practices for Maintaining and Constructing Highways and Transportation Systems*. NYSDOT Environmental Analysis Bureau. April, 2006. 37.

City of Bowling Green. 2006. *Environmental Handbook for City of Bowling Green Facilities Management*. (Fact Sheet 8.7)

Photo from <http://www.spraytechsys.com/graco/LineLazerIV/FieldLazer.htm>

NOTES

- 1) UK Environmental Management is located at 355 Cooper Drive, Lexington, KY 40506-0490, 859-323-6280, ehs.uky.edu/env.



The University of Kentucky encourages facilities to reduce, reuse, recycle and exchange to reduce environmental concerns, improve safety and reduce costs.

DO

- ✓ Reduce, reuse, recycle and exchange as the first step in managing solid waste.
- ✓ **Reduce** the amount of wastes generated and toxicity of products used to the greatest extent possible.
- ✓ **Reuse** concrete, asphalt and soil for road repair.
- ✓ **Recycle** newspaper, cardboard, glass, plastic and metal containers and items, copper wire and tubing, rubber, and other items at local recycling facilities.
- ✓ **Exchange** vehicle batteries, water pumps, carburetors, alternators, pesticide containers, etc., with vendors or when local purchases are made.
- ✓ Use available recycling contracts.
- ✓ Store materials for recycling in a location that is consistent with the permit.
- ✓ Divert runoff from recycling storage locations.
- ✓ Always ask for a Material Safety Data Sheet (MSDS) before ordering any new product.
- ✓ Keep lids on all solvents and turn off solvent parts washer when not in use.
- ✓ Have qualified personnel service equipment that contains Freon.

DON'T

- ✗ Don't throw away items that can be reused, recycled or exchanged.
- ✗ Don't accumulate batteries; avoid regulation.

Materials & Waste Management

- ▲ Follow appropriate guidelines from recycling contracts, vendors or recycling centers for allowable items, materials management, separation and transportation arrangement.
- ▲ Double wrap broken or cracked vehicle batteries in heavy plastic and exchange promptly.
- ▲ Refer to the UK Environmental Management Department "Battery Management" fact sheet for proper labeling of batteries.

Facility Checklist

- ☐ Check storage areas for recyclable materials to ensure that the handlers' conditions are being met.
- ☐ Check to ensure that materials are routinely transferred to a recycling vendor or facility.
- ☐ Assure all containers for recycling are properly labeled.

Tips and Tricks

- ! Containers that can be recycled: washer fluid, new oil, new anti-freeze, battery acid gas line anti-freeze, diesel conditioner, radiator cleaner, brake fluid, starting fluid, liquid soap, solvents, brake cleaner, carburetor cleaner, paints, toluene, hand cleaner, janitorial products, etc.
- ! Recycling contracts may be available for tires, batteries, anti-freeze, vehicle oils, oil filters, fuel filters, parts cleaning machine systems, etc.
- ! Recycling and exchanging materials is a good housekeeping practice and ensures compliance with hazardous waste and solid waste regulations and avoids costly penalties.
- ! Remember that "biodegradable" does not necessarily mean environmentally safe or that the product is exempt from regulations.
- ! Solvent losses due to evaporation, equipment leaks or spills and inappropriate usage can range from 25-40 percent
- ! UK Environmental Mgmt. 859-323-6280

If...Then

- If you are not sure whether an item can be recycled, contact UK PPD Recycling Department at 859-257-8491.

Training: 1 per Year

Season: Winter

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



INFORMATION SOURCES

Kentucky Department for Environmental Protection. *Managing Automotive Repair Shop Wastes*. January, 1995. Division of Waste Management. Frankfort, Kentucky.

Kentucky Transportation Cabinet. *Environmental Awareness: A Road Master Training Course*. Undated. (Unit 3 pages 2-9; Unit 5 p 17)

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New York State Department of Transportation. *Environmental Handbook for Transportation Operations A Summary of the Environmental Requirements and Best Practices for Maintaining and Constructing Highways and Transportation Systems*. NYSDOT Environmental Analysis Bureau. April, 2006. 56-57.

Ohio Department of Transportation. *Section 800 Hazardous Waste Management Manual*. Office of Environmental Services. Columbus, Ohio. April, 2004. (814.15.4 AEROSOL CANS/COMPRESSED GAS CYLINDERS)

City of Bowling Green. 2006. *Environmental Handbook for City of Bowling Green Facilities Management*. (Fact Sheet 9.1)

NOTES

- 1) UK Environmental Management is located at 355 Cooper Drive, Lexington, KY 40506-0490, 859-323-6280, ehs.uky.edu/env.



Construction waste and materials handling is part of any Stormwater Pollution Prevention Plan (SWPPP).

DO

- ✓ Arrange for solid waste service that provides covered dumpsters.
- ✓ Place trash in dumpster and close the lids.
- ✓ Keep dumpsters closed from weather.
- ✓ Have damaged dumpsters replaced or repaired.
- ✓ Use plastic bags for litter patrols and other solid waste.
- ✓ Store potentially hazardous left over products in a compatible, intact container.
- ✓ Keep water from running through stored solid waste.
- ✓ Have wastes hauled off before they over fill containers.
- ✓ Recycle as much material as feasible (cardboard, metals, glass, etc.) to keep it out of landfills. See **Fact Sheet 9.1**.
- ✓ Staging areas shall have erosion control installed per the SWPPP plan
- ✓ Concrete wash out areas shall be provided per the SWPPP plan.
- ✓ Handle Fuels and Oil per **Fact Sheet 8.3**
- ✓ Handle Bulk Liquids per **Fact Sheet 8.5**
- ✓ Follow **Fact Sheet 8.7** for equipment cleaning

DON'T

- ✗ Don't dispose of hazardous wastes in the dumpster.
- ✗ Don't dispose of whole tires, lead-acid batteries, liquids, large spill clean-up.
- ✗ Don't store solid wastes that are not in a dumpster on site for more that 30 days.
- ✗ Don't place spill cleanup in the dumpster unless approved by waste handler.
- ✗ Wash out concrete trucks onto the ground.

Materials & Waste Management

- ▲ Waste from hazardous materials may or may not be hazardous wastes. Have these wastes evaluated. Contact UK Environmental Management for assistance when needed.
- ▲ Solid waste landfills are the authority on what may or may not be disposed at their facility.

Facility Checklist

- ☐ Check solid waste storage areas per the SWPPP or at a minimum **WEEKLY**.

Tips and Tricks

- ! Use of closed top containers avoid many spill concerns and are strongly encouraged.
- ! Most things that may go into the dumpster are empty containers and wastes that are not hazardous waste and wastes that do not have free liquids.
- ! Clean-up from small spills (one or two bags) of "un-used" oil may go into the dumpster.
- ! Clean-up waste of spills of any fluids from equipment must be contained and evaluated.
- ! Liquid wastes generally cannot drip to be accepted at the landfill.
- ! UK Environmental Mgmt. 859-323-6280.

If...Then

- Contain and clean-up spills and leaks immediately. Spilled material that are wastes or are suitable for use can be returned to the storage container. (See **Fact Sheets 10.1 and 10.2**)

Training: 1 per Year

Season: Winter

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



INFORMATION SOURCES

Kentucky Transportation Cabinet and Kentucky Transportation Center. 2005. *Environmental Handbook for Management of Highways and Transportation Facilities. (Fact Sheet 4.2)*

New York State Department of Transportation. *Environmental Handbook for Transportation Operations A Summary of the Environmental Requirements and Best Practices for Maintaining and Constructing Highways and Transportation Systems*. Environmental Analysis Bureau. April, 2006. (Section 5 (Waste Management)).

City of Bowling Green. 2006. *Environmental Handbook for City of Bowling Green Facilities Management*. (Fact Sheet 9.2)

Photo from http://www.123rf.com/photo_1850967_dumpster-with-construction-debris.html

NOTES

- 1) UK Environmental Management is located at 355 Cooper Drive, Lexington, KY 40506-0490, 859-323-6280, ehs.uky.edu/env.



Materials & Waste Management

- ▲ Separate fluorescent lamp ballasts from bulbs and manage as a hazardous waste if they contain PCBs.
- ▲ Manifests are not required for shipment.

Facility Checklist

- ☐ Check and approve Universal Waste storage location and methods.
- ☐ Check containers **QUARTERLY** to ensure containers are closed, sound and properly labeled.
- ☐ Ensure that Universal Wastes are removed by an appropriate handler **ANNUALLY**.

Tips and Tricks

- ! Universal Wastes are:
 - lamps
 - mercury containing equipment
 - non-alkaline batteries
 - PCB containing light ballasts
 - Certain unused pesticides
- ! Small quantity handlers generate less than 11,000 pounds per year of Universal Wastes.
- ! Spent lamps include: fluorescent lamps, high pressure sodium, mercury vapor, metal halide, high intensity discharge (HID) and neon bulbs or tubes.
- ! Lead acid batteries are typically exchanged when the new battery is purchased.
- ! Fluorescent lamps with a green cap are not TCLP hazardous and may be disposed as solid waste.
- ! UK Environmental Mgmt. 859-323-6280

If...Then

- Use a mercury spill cleanup kit to immediately clean up broken ampules.
- Call UK Environmental Management immediately in the event of a mercury spill.
- Sweep broken lamps and dispose of glass in the dumpster; include remaining lamp parts with Universal Waste.

Training: 1 per Year

Season: Winter

Relevant Environmental Programs

- ☐ Air Quality
- ☐ 401/404/WQC
- ☐ KPDES
- ☐ MS4

- ☐ GWPP
- ☒ Waste
- ☐ Pesticides
- ☐ SPCC

DO

- ✓ Store **spent lamps** that contain hazardous components in boxes, drums or other containers that are properly closed and labeled.
- ✓ Store waste **mercury thermostats** and **non-lead acid batteries** in closed, structurally sound containers.
- ✓ Repackage damaged universal waste containers in a closed, structurally sound container that is compatible with the waste and protects against damage and leaks.
- ✓ Clearly label the container "Universal Waste – (contents)".
- ✓ Store Universal Wastes for no longer than 1 year.
- ✓ Contact UK Environmental Management for assistance with wastes that contain mercury and other questions regarding universal waste.

DON'T

- ✗ Don't crush spent lamps.
- ✗ Don't remove mercury ampules from thermostats.
- ✗ Don't put Universal Wastes in the dumpster.



INFORMATION SOURCES

Kentucky Department for Environmental Protection. *Universal Waste*. Undated. Division of Waste Management. Frankfort, Kentucky.

Kentucky Transportation Cabinet. *Environmental Awareness: A Road Master Training Course*. Undated. (Unit 3)

Kentucky Transportation Cabinet and Kentucky Transportation Center. 2005. *Environmental Handbook for Management of Highways and Transportation Facilities*. (Fact Sheet 4.4)

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NOTES

- 1) UK Environmental Management is located at 355 Cooper Drive, Lexington, KY 40506-0490, 859-323-6280, ehs.uky.edu/env.



Antifreeze that contains more than 5 mg/l (ppm) TCLP lead must be managed as a hazardous waste.

DO

- ✓ Collect all antifreeze drained from vehicles.
- ✓ If the antifreeze is usable, return it to the vehicle.
- ✓ Clearly label containers of re-usable or waste antifreeze.
- ✓ Store waste antifreeze in re-sealable, plastic, 30 gallon, or smaller, drums.
- ✓ Store waste antifreeze indoors, in a secure location.
- ✓ Maintain a log for each drum of waste antifreeze to record the first date antifreeze is added and the date the drum is filled.
- ✓ Drums of waste antifreeze will be tested for TCLP lead when 25 gallons has accumulated, or as needed.
- ✓ If the lead test result is over 5 mg/l TCLP lead, manage the waste as a hazardous waste through the UK Environmental Management Department.

DON'T

- ✗ Don't pour waste antifreeze in a floor drain, storm drain, septic system, dry well or on the ground.
- ✗ Don't mix other wastes, used oil, cleaners, solvents or brake fluid with waste antifreeze.

Materials & Waste Management

- ▲ Contact UK Environmental Management to request tests for total lead and TCLP lead.
- ▲ A chain of custody form, provided by the laboratory, must accompany each sample.
- ▲ Send a copy of the chain of custody and test results to UK Environment Management.
- ▲ Waste antifreeze is non-regulated if total lead or TCLP lead is less than 5 mg/l (ppm).

Facility Checklist

- ☐ Monitor re-useable and waste antifreeze storage drums for leaks, spills and housekeeping **DAILY**.
- ☐ Check waste antifreeze volumes **MONTHLY**.
- ☐ Check recordkeeping **MONTHLY**.
- ☐ Check spill kit **MONTHLY** and promptly restock after use.

Tips and Tricks

- ! A 30 gallon drum of antifreeze weighs 200 pounds.
- ! UK Environmental Mgmt. 859-323-6280

If...Then

- Immediately contain and clean up all spills, using a spill kit. (See **Fact Sheet 10.1**)
- Immediately protect floor drains from a spill with absorbent socks or pillows.
- Immediately pump waste antifreeze from leaking drums into a secure container.

Training: 1 per Year

Season: Winter

Relevant Environmental Programs

- | | |
|---------------|--------------|
| ○ Air Quality | ● GWPP |
| ○ 401/404/WQC | ● Waste |
| ● KPDES | ○ Pesticides |
| ● MS4 | ○ SPCC |



INFORMATION SOURCES

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Kentucky Transportation Cabinet and Kentucky Transportation Center. 2005. *Environmental Handbook for Management of Highways and Transportation Facilities*. (Fact Sheet 4.5)

New York State Department of Transportation. *Environmental Handbook for Transportation Operations A Summary of the Environmental Requirements and Best Practices for Maintaining and Constructing Highways and Transportation Systems*. NYSDOT Environmental Analysis Bureau. April, 2006. 58.

Ohio Department of Transportation. *Section 800 Hazardous Waste Management Manual*. Office of Environmental Services. Columbus, Ohio. April, 2004. (814.15.6 ANTIFREEZE)

City of Bowling Green. 2006. *Environmental Handbook for City of Bowling Green Facilities Management*. (Fact Sheet 9.4)

NOTES

- 1) UK Environmental Management is located at 355 Cooper Drive, Lexington, KY 40506-0490, 859-323-6280, ehs.uky.edu/env.



Covered storage for waste tires reduces mosquitoes that may carry disease. This tire storage container needs to be covered.

DO

- ✓ Facilities that handle more than 100 waste tires must be registered with the Kentucky Division of Waste Management. Size is not a factor when counting to determine if registration is required.
- ✓ Un-registered facilities may accumulate less than 100 waste tires and should plan for disposal when 90 waste tires have accumulated.
- ✓ Stack all tires neatly in a designated Tire Storage Area.
- ✓ Stack tires for salvage sale separately.
- ✓ Cover stacks of tires to prevent accumulation of water which fosters breeding mosquitoes that may carry diseases.
- ✓ Registered facilities must store tires 30 feet from utility easement, property line or highway right of way and 250 feet from a residence, karst feature or stream, store tires where fire fighting equipment will have access in case of a fire, obtain and keep receipts for disposal of tires for three years.

DON'T

- ✗ Don't allow more than 100 tires to accumulate at facilities that are not registered.
- ✗ Don't burn tires.
- ✗ Don't put waste tires in the dumpster or landfill. Landfills do not accept tires.

Materials & Waste Management

The two methods of waste tire management apply:

▲ **Salvage Sale.** Tires with street value may be removed from the waste pile for salvage sale. These tires must be covered to keep water from accumulating.

▲ **Used Tire Recycling.**

Facility Checklist

- ☐ Check the storage area **MONTHLY** to ensure runoff is diverted and tires are covered.
- ☐ Update the waste tire inventory count **MONTHLY** at facilities that are not registered.

Tips and Tricks

- ! Disposal of whole tires in a solid waste landfill is prohibited by law.
- ! Keeping tires covered to prevent water entrapment keeps environmental inspectors happy.
- ! Contact UK Environmental Management for assistance, if needed.
- ! UK Environmental Mgmt. 859-323-6280

If...Then

- Notify the Superintendent immediately if more than 90 tires are being stored at an unregistered facility.

Training: 1 per Year

Season: Winter

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



INFORMATION SOURCES

KRS 224.50-852 Waste tire program -- Administrative regulations.

Kentucky Transportation Cabinet. *Environmental Awareness: A Road Master Training Course*. Undated. (Unit 3 p 8-9, Unit 5)

Kentucky Transportation Cabinet and Kentucky Transportation Center. 2005. *Environmental Handbook for Management of Highways and Transportation Facilities*. (Fact Sheet 4.6)


New York State Department of Transportation. *Environmental Handbook for Transportation Operations A Summary of the Environmental Requirements and Best Practices for Maintaining and Constructing Highways and Transportation Systems*. Environmental Analysis Bureau. April, 2006. 65.

Ohio Department of Transportation. *Section 800 Hazardous Waste Management Manual*. Office of Environmental Services. Columbus, Ohio. April, 2004. (814.15.34 TIRES)

City of Bowling Green. 2006. *Environmental Handbook for City of Bowling Green Facilities Management*. (Fact Sheet 9.5)

NOTES

- 1) UK Environmental Management is located at 355 Cooper Drive, Lexington, KY 40506-0490, 859-323-6280, ehs.uky.edu/env.

	<h2>Materials & Waste Management</h2> <ul style="list-style-type: none">▲ Drained used oil filters should be recycled.▲ Small amounts of used absorbent materials can be sent to an approved solid waste landfill.▲ Use an approved vendor to move used oil and oil filters to recycling facilities▲ Hot drained oil filters may be sent to a solid waste landfill, with prior approval from the operator.																		
<p><i>This used oil tank is stored indoors, clearly labeled and the work area is orderly.</i></p>	<h2>Facility Checklist</h2> <ul style="list-style-type: none"><input type="checkbox"/> Check for leaks, spills and housekeeping DAILY.<input type="checkbox"/> Check oil levels WEEKLY.<input type="checkbox"/> Check spill kits MONTHLY and promptly restock after use.<input type="checkbox"/> Check waste tank level indicators MONTHLY, and plan waste management accordingly.<input type="checkbox"/> Check corrosion resistant tanks and pipes at the manufacturer's recommended schedule.<input type="checkbox"/> Visually check the secondary containment and tank area MONTHLY and report leaks, spills and maintenance issues to the Superintendent immediately.																		
<h2>DO</h2> <ul style="list-style-type: none">✓ Maintain a 250 to 660 gallon used oil storage tank above ground, indoors protected from weather, in good condition, on an asphalt or concrete base and clearly labeled.✓ Provide extra used oil storage containers.✓ Provide a drum for used oil filters.✓ Carefully pour used oil into the Used Oil containers without spilling.✓ Waste fuel from fuel filters may be added if allowed by the recycling vendor.✓ Drain oil filters on the drain rack for 24 hours and place in the Used (Waste) Oil Filter drum.✓ Notify the Superintendent when the tank reaches 80% full.✓ Record the date and volume of waste removed, hauler and treatment facility receiving the waste.✓ The Superintendent will promptly request vendor removal.✓ Label all used oil containers, filter racks, and collection vessels with the words "Used Oil".	<h2>Tips and Tricks</h2> <ul style="list-style-type: none">! Run equipment until operating temperature is reached (about 20 minutes) to completely drain oil.! Crushing oil filters conserves space.! The use of oil for dust control is prohibited.! Motor oil, hydraulic oil, transmission and power steering fluid, gear and lube oil are "used oils".! If the facility is subject to SPCC requirements, follow the guidelines set forth in the Facility Plan.! Contact PPD recycling at 859-257-8491 for assistance on used oil filter recycling.																		
<h2>DON'T</h2> <ul style="list-style-type: none">✗ Don't add other wastes such as cleaners, brake fluid or used antifreeze to used oil.✗ Adding oil from the oil/water separator to the used oil tank is not recommended when the oil is part of a used oil furnace fuel supply.✗ Don't pour used oil in a storm drain, septic system, floor drain, dry well, sewer or on the ground for disposal, dust or weed control.✗ Don't add to storage tanks that are full.	<h2>If...Then</h2> <ul style="list-style-type: none">➤ Contain and clean-up spills and leaks immediately. Spilled material that are wastes or are suitable for use can be returned to the tank or similar container. (See Fact Sheets 10.1 and 10.2)																		
	<table><tr><td colspan="2">Training: 1 per Year</td><td colspan="2">Season: Winter</td></tr><tr><td rowspan="4">Relevant Environmental Programs</td><td><input type="radio"/> Air Quality</td><td><input checked="" type="radio"/> GWPP</td><td></td></tr><tr><td><input type="radio"/> 401/404/WQC</td><td><input checked="" type="radio"/> Waste</td><td></td></tr><tr><td><input checked="" type="radio"/> KPDES</td><td><input type="radio"/> Pesticides</td><td></td></tr><tr><td><input checked="" type="radio"/> MS4</td><td><input checked="" type="radio"/> SPCC</td><td></td></tr></table>		Training: 1 per Year		Season: Winter		Relevant Environmental Programs	<input type="radio"/> Air Quality	<input checked="" type="radio"/> GWPP		<input type="radio"/> 401/404/WQC	<input checked="" type="radio"/> Waste		<input checked="" type="radio"/> KPDES	<input type="radio"/> Pesticides		<input checked="" type="radio"/> MS4	<input checked="" type="radio"/> SPCC	
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UK

9.6 USED OIL AND OIL FILTERS



INFORMATION SOURCES

40 CFR 112 Oil Pollution Prevention (SPCC Requirements)

40 CFR 279 Used Oil Management

401 KAR 44:020. Standards for used oil generators

401 KAR 44:080. Standards for use as a dust suppressant and disposal of used oil.

KRS 224.01. Reportable quantities and release notification requirements for hazardous substances, pollutants, or contaminants hazardous substances, pollutants, or contaminants

Kentucky Department for Environmental Protection. *Managing Automotive Repair Shop Wastes*. January, 1995. Division of Waste Management. Frankfort, Kentucky.

Kentucky Transportation Cabinet. *Environmental Awareness: A Road Master Training Course*. Undated. (Unit 3 p 8, Unit 5, p 17, 23)

Kentucky Transportation Cabinet. *Spill Prevention Control and Countermeasures Plan Template*. February, 2003. Frankfort, Kentucky.

Kentucky Transportation Cabinet and Kentucky Transportation Center. 2005. *Environmental Handbook for Management of Highways and Transportation Facilities*. (Fact Sheet 4.7)

New York State Department of Transportation. *Environmental Handbook for Transportation Operations A Summary of the Environmental Requirements and Best Practices for Maintaining and Constructing Highways and Transportation Systems*. NYSDOT Environmental Analysis Bureau. April, 2006. 62-63.

City of Bowling Green. 2006. *Environmental Handbook for City of Bowling Green Facilities Management*. (Fact Sheet 9.6)

NOTES



Many concrete and metal construction materials can be reused or recycled.

DO

- ✓ Reuse or recycling are the preferred options.
- ✓ Disposal in a construction and demolition (C&D) or an approved solid waste landfill are less preferable options.
- ✓ Reuse concrete for road repair and Stormwater projects (gabion baskets, rip rap, fill).
- ✓ Reuse aluminum and steel guardrails for traffic barriers or retaining wall projects.
- ✓ Reuse metal drums for storing wastes.
- ✓ Use a drum recycling vendor to remove excess empty drums.
- ✓ Divert runoff from storage locations.
- ✓ Store concrete and metal in an orderly way to encourage reuse and recycling.
- ✓ Remove excess materials periodically to keep the site in good order.
- ✓ Insure no asbestos, lead based paint, or PCB containing caulking is disposed with the metal and concrete waste.

DON'T

- ✗ Don't allow water to collect on or in stored materials or drums.

Materials & Waste Management

- ▲ Concrete is considered “inert” material by the Division of Waste management and may be used as “clean fill” for projects.
- ▲ Concrete waste that can not be used in projects may be disposed in C & D waste landfills.
- ▲ Use a metal recycling vendor for metal items that cannot be reused.
- ▲ Metal items may be sent to an approved solid waste landfill.

Facility Checklist

- ☐ Check storage locations to ensure compliance with the permit.
- ☐ Check drainage to ensure runoff is diverted away from storage locations.
- ☐ Check to ensure wastes are stored separately by type of material.

Tips and Tricks

- ! C&D landfill disposal fees are lower than solid waste landfill fees.
- ! Metal and concrete wastes do not cause ground water pollution and are therefore excluded from the Ground Water Protection Plan.
- ! Construction projects by outside contractors may have additional or differing requirements. Check with the UK Project Manager or contract documents for guidance.
- ! UK Environmental Mgmt. 859-323-6280

If...Then

- If you are unsure if an item can be recycled or not, contact UK Environmental Management for assistance.

Training: 1 per Year

Season: Winter

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



INFORMATION SOURCES

Kentucky Transportation Cabinet. *Environmental Awareness: A Road Master Training Course*. Undated. (Concrete - Unit 3 p. 5, 17; Metal - Unit 3 p. 7, 16, 25; Exclusion - Unit 5 p. 33)

Kentucky Transportation Cabinet and Kentucky Transportation Center. 2005. *Environmental Handbook for Management of Highways and Transportation Facilities*. (Fact Sheet 4.8)

New York State Department of Transportation. *Environmental Handbook for Transportation Operations A Summary of the Environmental Requirements and Best Practices for Maintaining and Constructing Highways and Transportation Systems*. Environmental Analysis Bureau. April, 2006. 20, 54-55.

City of Bowling Green. 2006. *Environmental Handbook for City of Bowling Green Facilities Management*. (Fact Sheet 9.7)

NOTES

- 1) UK Environmental Management is located at 355 Cooper Drive, Lexington, KY 40506-0490, 859-323-6280, ehs.uky.edu/env.



The spill kit contains protective equipment and absorbent materials for emergency use. Place spill kits where materials are stored or used.

DO

- ✓ Treat spills of products or wastes that are flammable, toxic, reactive or corrosive as posing a risk to health and the environment.
- ✓ Refer to the Material Safety Data Sheet (MSDS) for spill response procedures and personal protective equipment needs.
- ✓ Isolate the area.
- ✓ Safely **stop the release** if possible and protect streams, sewers and other waterways.
- ✓ **Report all releases** above the reportable quantity to UK Environmental Management; call **911 or UKPD at 859-257-UKPD (8573) when warranted.**
- ✓ If the spill exceeds reportable quantities on the "List of Lists" (40 CFR 302) or enters a water of the Commonwealth, call UK Environmental Management for determination if the KY Environmental Response Team and the National Response Center should be contacted.
- ✓ **Clean up** the spilled material.
- ✓ Use an environmental consultant to oversee clean up of spills involving removal of soil.
- ✓ Store absorbent in drums and conduct a waste determination if a hazardous spill is known or suspected.
- ✓ Review emergency response actions after an incident to highlight appropriate responses and needed improvements.

If...Then

- If the materials can be reused, place them in a suitable container and label them.

DON'T

- ✗ Don't risk injury to yourself or co-workers.
- ✗ Don't panic, respond calmly and quickly.
- ✗ Don't stop the release if it is hazardous to do so.

Materials & Waste Management

- ▲ Store contaminated absorbent in drums until the results of a waste determination are available.
- ▲ Promptly manage spill cleanup waste with other hazardous wastes.

Facility Checklist

- ☐ Check product and waste storage areas for leaks, spills and housekeeping **MONTHLY**.
- ☐ Check hazardous waste storage areas for leaks, spills and housekeeping **MONTHLY**.
- ☐ Check spill kits **MONTHLY** and promptly restock after use.
- ☐ Check spill response and cleanup procedures **ANNUALLY**.
- ☐ Check for the presence of copies of MSDS sheets for all products handled at the facility **ANNUALLY**.

Tips and Tricks

- ! Reportable quantities are 25 gallons or more of a petroleum product within a 24-hour period and 75 gallons or more of diesel fuel in a 24-hour period or any amount that creates a visible sheen on surface waters.
- ! EPA's "List of Lists" document, which identifies reportable chemicals, can be downloaded from the KY Environmental Response Team's website.
- ! Wring oil absorbent pads into a bucket to collect spilled material for reuse or disposal
- ! **Contact UK Environmental Management for list of needed spill kit contents.**
- ! If granular absorbents are not available, use any material that can absorb or slow down runoff, such as clothes or soil.
- ! UK Environmental Mgmt. 859-323-6280
- ! KY Environmental Response Team 800-928-2380 or 502-564-2380



10.1 HAZARDOUS AND NON-HAZARDOUS SPILLS AT THE FACILITY

Training: 1 per Year

Season: Winter

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC
- CERCLA

INFORMATION SOURCES

40 CFR 302

Kentucky Transportation Cabinet. *Environmental Awareness: A Road Master Training Course*. Undated. (Unit 3 p 7, 8)

Kentucky Transportation Cabinet. *Spill Prevention Control and Countermeasures Plan Template*. February, 2003. Frankfort, Kentucky.

Kentucky Transportation Cabinet. *Stormwater Best Management Practices Plan for District 5 – Poplar Level Lost 392*. Undated. (p 6-7)

Kentucky Transportation Cabinet and Kentucky Transportation Center. 2005. *Environmental Handbook for Management of Highways and Transportation Facilities*. (Fact Sheet 5.1)

New York State Department of Transportation. *Environmental Handbook for Transportation Operations A Summary of the Environmental Requirements and Best Practices for Maintaining and Constructing Highways and Transportation Systems*. Environmental Analysis Bureau. April, 2006. 42-43.

United States Environmental Protection Agency. *List of Lists: Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-To-Know Act (EPCRA) and Section 112(r) of the Clean Air Act*. October, 2001. Office of Solid Waste and Emergency Response. Washington, D.C. EPA 550-B-01-003.

City of Bowling Green. 2006. *Environmental Handbook for City of Bowling Green Facilities Management*. (Fact Sheet 10.1)

NOTES

- 1) UK Environmental Management is located at 355 Cooper Drive, Lexington, KY 40506-0490, 859-323-6280, ehs.uky.edu/env.
- 2) KY Environmental Response Team 800-928-2380 or 502-564-2380



Petroleum spills can contaminate surface water and ground water and can cause violations of the KPDES permit.

DO

- ✓ Safely **stop the release** if possible by closing valves and/or turning power off.
- ✓ Notify the facility superintendent of all spills at the facility.
- ✓ Notify UK Environmental Management if the spill is 25 gallons or more of a petroleum product within a 24-hour period or 75 gallons or more of diesel fuel in a 24-hour period or any amount that creates a visible sheen on surface waters.
- ✓ **Clean up** the spilled material.
- ✓ Use an environmental consultant to oversee clean up of spills involving removal of soil.
- ✓ Return any useable product to the container or store in drums for later use.
- ✓ Use sorbent materials to clean up spill residues with the secondary containment area.
- ✓ Excavate all visibly contaminated soil.
- ✓ Store sorbent materials and excavated soil in drums or covered stockpiles, and perform tests as needed to secure approval for disposal.

DON'T

- ✗ Don't risk injury to yourself or co-workers.
- ✗ Don't panic, respond calmly and quickly.
- ✗ Don't stop the release if it is hazardous to do so.

Materials & Waste Management

- ▲ If the material is confirmed non-hazardous, wastes may be accepted by the Solid Waste Landfill.
- ▲ Material sent to a landfill must not drip.
- ▲ Follow the landfill's procedures and contact them if there are questions.
- ▲ If wastes are hazardous or not accepted by the landfill, contact UK Environmental Management for management of the waste.

Facility Checklist

- ☐ Check spill kits **MONTHLY** and promptly restock after use.
- ☐ Check spill response and cleanup procedures **ANNUALLY**.
- ☐ Ensure that all employees that handle petroleum product transfers are adequately trained.

Tips and Tricks

- ! Clean up of visibly contaminated soil is required even if there are no notification requirements.
- ! Notification requirements apply to all petroleum products, including asphalt.
- ! Tests for disposal usually include BTEX and free liquids
- ! Contact UK Environmental Management for list of needed spill kit contents. UK Environmental Mgmt. 859-323-6280
- ! KY Environmental Response Team 800-928-2380 or 502-564-2380

If...Then

- If the spill can't be safely and effectively handled by facility personnel, the facility superintendent will promptly **call 911 or 859-257-UKPD (8573) and UK Environmental Management at 859-323-6280.**
- If the spill reaches a waterbody or storm drain, immediately notify UK Environmental Management. EMD will call the KY Environmental Response Team if required.

Training: 1 per Year

Season: Winter

Relevant Environmental Programs

- Air Quality
- 401/404/WQC
- KPDES
- MS4

- GWPP
- Waste
- Pesticides
- SPCC



INFORMATION SOURCES

- Kentucky Transportation Cabinet. *Environmental Awareness: A Road Master Training Course*. Undated.
- Kentucky Transportation Cabinet. *Spill Prevention Control and Countermeasures Plan Template*. February, 2003. Frankfort, Kentucky. (p35)
- Kentucky Transportation Cabinet and Kentucky Transportation Center. 2005. *Environmental Handbook for Management of Highways and Transportation Facilities*. (Fact Sheet 5.2)
- New York State Department of Transportation. *Environmental Handbook for Transportation Operations A Summary of the Environmental Requirements and Best Practices for Maintaining and Constructing Highways and Transportation Systems*. Environmental Analysis Bureau. April, 2006. 42.
- United States Environmental Protection Agency. *List of Lists: Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-To-Know Act (EPCRA) and Section 112(r) of the Clean Air Act*. October, 2001. Office of Solid Waste and Emergency Response. Washington, D.C. EPA 550-B-01-003.
- City of Bowling Green. 2006. *Environmental Handbook for City of Bowling Green Facilities Management*. (Fact Sheet 10.2)

NOTES

- 1) UK Environmental Management is located at 355 Cooper Drive, Lexington, KY 40506-0490, 859-323-6280, ehs.uky.edu/env.
- 2) KY Environmental Response Team 800-928-2380 or 502-564-2380