

# **INDUSTRIAL STORMWATER BMPs**

*Improving local water quality one step at a time*

Webinar will begin at 1:00 p.m. CST.

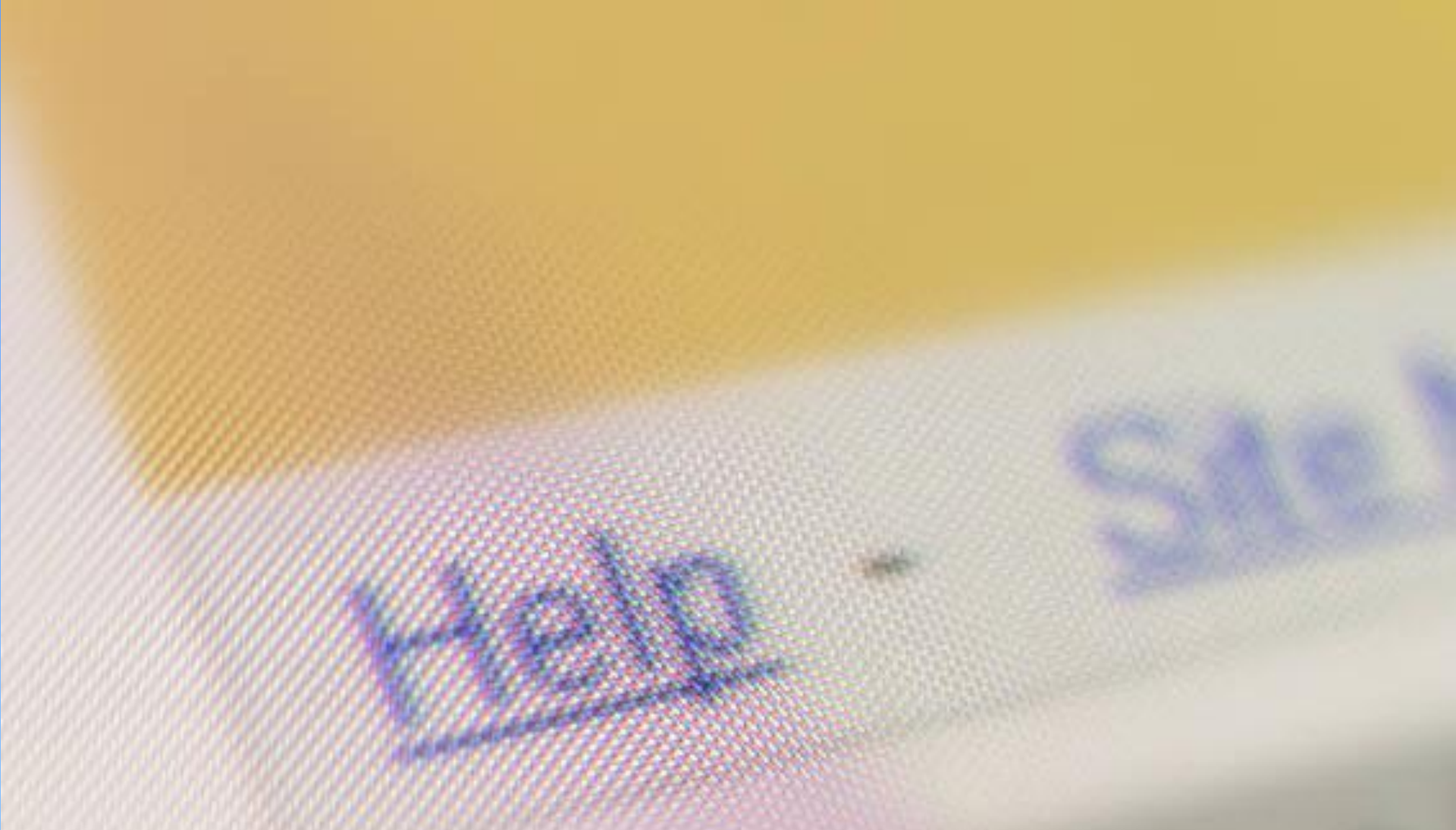
December 4, 2009

# Webinar Logistics

- Can't hear? If it's not the computer volume, then may access by phone. Click on the phone button and dial the number/pin number.
- Ask questions and offer comments by typing them into the long text box at the bottom of the screen. **Press enter.**
- Questions about the Webinar software? Type them in or call the help-desk at 785-532-7722.
- The presentation will be archived.
- A short evaluation will be sent via email.

# Overview

- Explain PPI's role with assisting industries
- Basic best management practices (BMPs)
- Advanced BMPs and structural controls
- Resources



Looking for help...

# **K-State PPI Assistance**

# How it all fits...

## Kansas State University

- College of Engineering
  - Engineering Extension
    - Pollution Prevention Institute (PPI)
      - Small Business Environmental Assistance Program (SBEAP)



# Assistance Provided by PPI

## Free service to:

- Small business and industry
- BOW staff
- KDHE watershed field coordinators
- Local WRAPS team members

## Provide technical assistance:

- By phone (800-578-8898)
- On site



# Assistance to Industries

- Multimedia
  - (air, waste, water, energy, GHG inventory and reporting, EMS)
- Environmental compliance assistance
- Free to small- and medium- sized businesses
- Confidential
- Staff located throughout the state

# The Problem

- Runoff at industrial sites may contaminate
  - water bodies
  - groundwater
  - soil
- Runoff may contain
  - Oil
  - Heavy metals
  - Silt
  - Chemicals

# The Solution

- No “cookbook” solutions
- Source reduction is the most effective option
- Preventive BMPs are best (vs. reactive)



# Benefits

- Prevent and reduce pollution to the watersheds
- Protect and improve water quality (surface and groundwater)
- Improve company image
- Cost savings opportunities
- Regulatory requirements

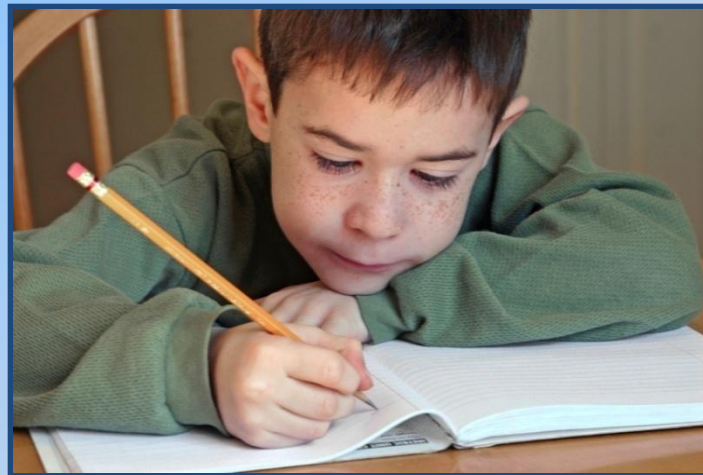


Get off to a good start...

# Basic BMPs

# Training and education

- Essential to all other BMPs
- Keep it simple (don't forget the “why”)
- Ongoing training is necessary
- Don't forget the new folks
- Develop a stormwater management policy



# Training and Education

- Training/education checklists
  - [www.epa.gov/OWM/mtb/empltrng.pdf](http://www.epa.gov/OWM/mtb/empltrng.pdf)
- Stormwater management policy examples
  - [www.stormwaterauthority.org/assets/Guidance%20Manual%20SWPPP.pdf](http://www.stormwaterauthority.org/assets/Guidance%20Manual%20SWPPP.pdf)
  - [www.epa.gov/npdes/pubs/industrial\\_swppp\\_guide.pdf](http://www.epa.gov/npdes/pubs/industrial_swppp_guide.pdf)

# Good Housekeeping

- Practical and cost-effective
- Document process, so it becomes routine
- Maintain schedule and inspections
- Employee buy-in
- Inventory control

# Good Housekeeping

- Can include:
  - Sweeping (don't use a hose)
  - Picking up debris
  - Not stockpiling waste (remove regularly)
  - Proper disposal of waste
  - Organize/separate wastes and products
  - Use labels
  - Use pallets

# Signage and Reminders

- Post reminder signs
  - Close lids
  - Don't dump, drains to river
- Use posters, newsletters, bulletin boards or other company-specific methods in place



# Minimize exposure

- Cover materials (includes waste)
- Always close lids
- Store or load/unload inside when possible



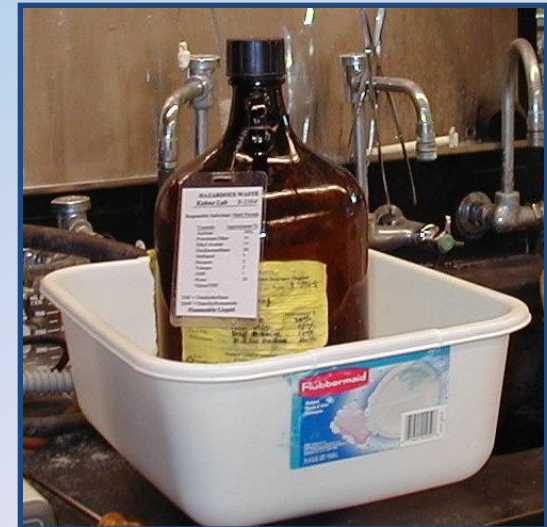
# Waste/Product Storage

- Always keep lids tightly closed
- Label appropriately
- Keep containers in good condition
  - Perform regular inspections
- Monitor inventory
  - Minimize the amount stored between offsite disposal
- Separate incompatible materials
- Provide cover and secondary containment



# Spill Prevention

- Secondary containment
- Use lids correctly
- Handle materials where spills can be contained
- Follow proper procedures for emptying rain water—keep valves closed



# Spill Clean-up

- Small spills: Wipe up immediately with rag
- Medium spills: Contain when possible, use dry absorbent materials
- Large spills: Contact KDHE/EPA/emergency response, cover storm/sewer drain inlets
- Keep spill cleanup equipment and material near locations where spills are more likely to occur

**KDHE Spill Hotline: 785-296-1679**  
(24 hrs/day)

Hazardous material spills and air releases that meet federal reportable quantities must also be reported to Kansas Division of Emergency Management: 800-275-0297



# Vehicle and Equipment Fueling

- Use concrete slab for the fueling area
- Have someone present during fueling
- Clean up overflows and spills immediately
  - Keep spill kit nearby
  - Train employees in proper clean up methods
- Don't top off or overfill gas tanks
- Perform routine cleaning
  - Damp cloth on pumps
  - Damp mop on pavement



# Vehicle Washing

- Use only a designated area:
  - Drain to tank or sanitary sewer
  - Proper grading is essential
  - Cover wash area
- Use commercial car wash



# Vehicle Maintenance

- Perform indoors and in designated area
- Use drip pans and containers
- Drain fluids from retired vehicles
- Regularly inspect equipment for leaks
- Keep equipment and equipment yard clean

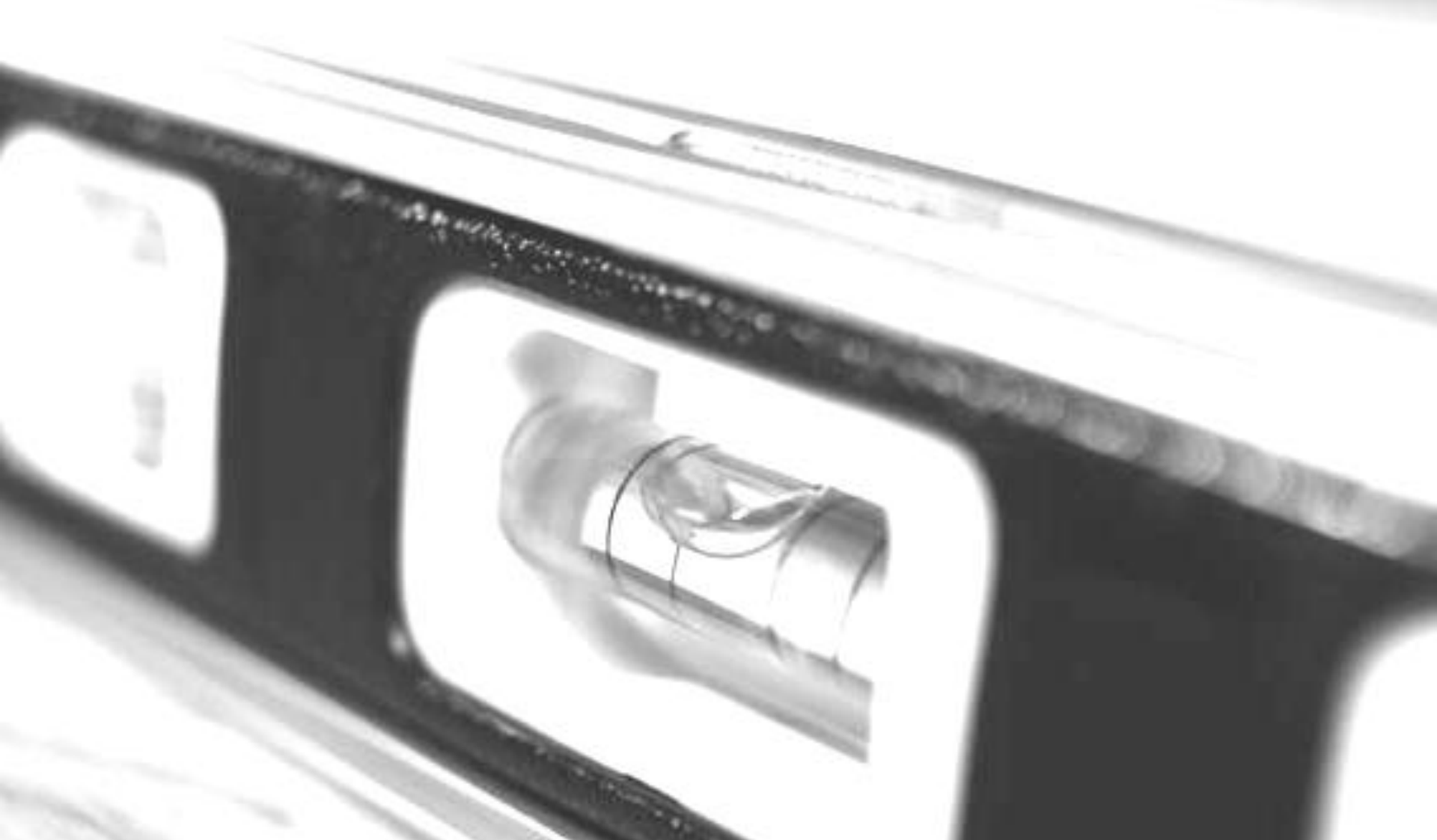
# Outdoor Equipment

- Identify all equipment that may be exposed to SW and their potential pollutants
  - Include roof top equipment, material transfer areas
- Inspect regularly for leaks
- Perform preventive maintenance



# Grounds Maintenance

- Minimize pressure washing
- Don't direct downspouts onto paved surfaces
- Clean storm drain inlets regularly
- Use dry cleanup methods
- Proper storage/application of pesticides
- Compost



Taking it to the next level...

# **Advanced BMPs and Structural Controls**

# Erosion and Sediment Control

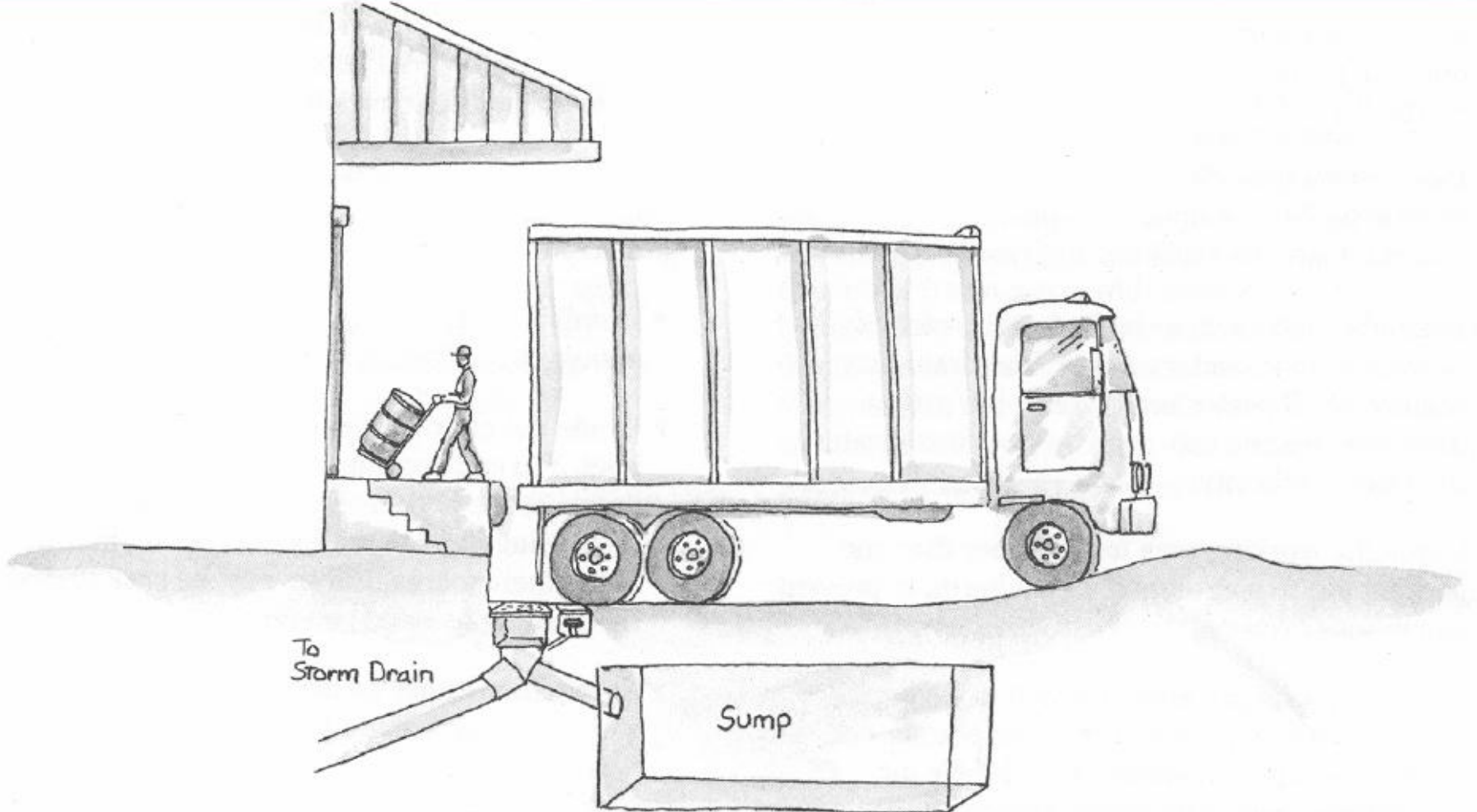
- Hydraulic controls
  - Increase infiltration
  - Reduce runoff
- Increase water-permeable surfaces
- Intercept runoff with infiltration trenches
- Construct detention/retention ponds
  - Or stormwater wetland



# Loading Dock Design

- Construct roof and berms
- Grade pavement to slope toward an inlet with a sump and shutoff valve
  - Sump has capacity to hold spill while valve is closed
  - Keep valve closed except to release clean stormwater (if contaminated, discharge to sanitary sewer, with permission; or send liquid to a commercial waste disposal facility with appropriate characterization)

# Loading Dock Design



# Equipment Yard Design

- Grade the area or install curbs to direct stormwater to an onsite storm drain
- Construct inlet to drain with oil-water separator
- Segregate area where vehicles are serviced
  - Construct roof overhead
  - Pave area with concrete
  - Surround with berm to prevent stormwater runoff

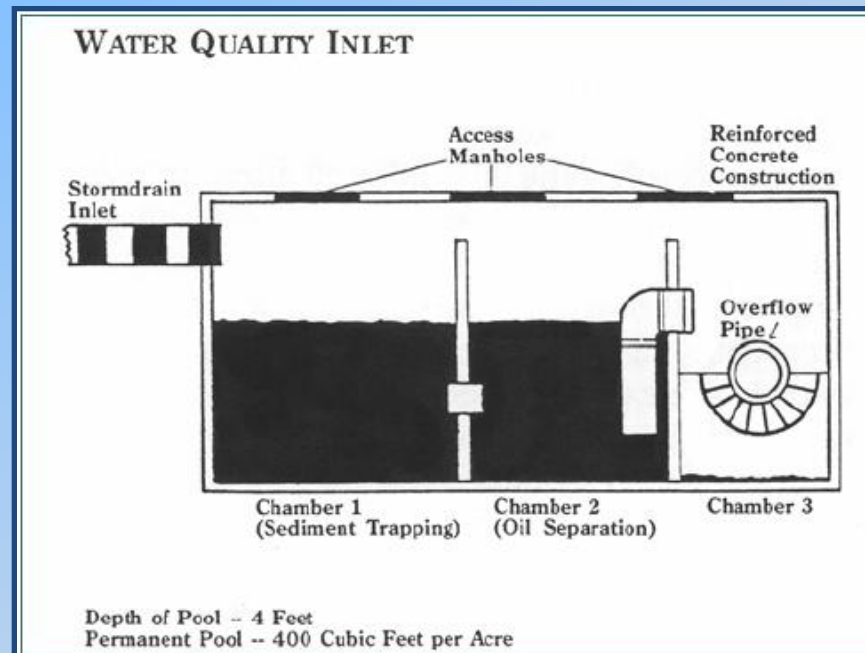
# Roads

- Access roads
  - Design roads so they are crowned and slope outward
  - Maintain grass in roadside ditches to filter pollutants
  - Keep ditches from clogging with sediments



# On-site Stormwater Mgmt

- Keep area of industrial activities as small as possible
- Provide roof or enclose the area, if possible
- Convey stormwater from industrial area to a water quality inlet



re-sound-ing  
loud: resounding  
tory. —re-sound-  
re-source (rē'sōrs)

n. 1. Something  
library is a valuable  
drawn upon when  
difficult or trying  
means of coping  
total means  
cluding su

## Additional resources

# Resources

- List of industry-specific fact sheets (EPA)  
*<http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm>*
- BMPs for Industrial Storm Water Pollution Control  
*[www.sacramentostormwater.org/documents/guides/industrial-BMP-manual.pdf](http://www.sacramentostormwater.org/documents/guides/industrial-BMP-manual.pdf)*
- Water Quality Self Assessment Checklists  
*[www.sbeap.org/WQChecklist.php](http://www.sbeap.org/WQChecklist.php)*
  - *Kansas Ag Service Centers*
  - *RV Parks and Campgrounds*
  - *Veterinary Clinic and Fairgrounds*
  - *Parking Lots*

# Industry-Specific Fact Sheets

<http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm>

## INDUSTRIAL STORMWATER

### FACT SHEET SERIES

*Sector N: Scrap Recycling and Waste Recycling Facilities*



U.S. EPA Office of Water  
EPA-833-F-06-029  
December 2006

#### ***What is the NPDES stormwater program for industrial activity?***

Activities, such as material handling and storage, equipment maintenance and cleaning, industrial processing or other operations that occur at industrial facilities are often exposed to stormwater. The runoff from these areas may discharge pollutants directly into nearby waterbodies or indirectly via storm sewer systems, thereby degrading water quality.

In 1990, the U.S. Environmental Protection Agency (EPA) developed permitting regulations under the National Pollutant Discharge Elimination System (NPDES) to control stormwater discharges associated with eleven categories of industrial activity. As a result, NPDES permitting authorities, which may be either EPA or a state environmental agency, issue stormwater permits to control runoff from these industrial facilities.

#### ***What types of industrial facilities are required to obtain permit coverage?***

This fact sheet specifically discusses stormwater discharges various industries including scrap recycling and waste recycling facilities as defined by Standard Industrial Classification (SIC) Major Group Code 50 (5093). Facilities and products in this group fall under the following categories, all of which require coverage under an industrial stormwater permit:

# Industry-Specific Fact Sheets

<http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm>

## INDUSTRIAL STORMWATER FACT SHEET SERIES

### *Sector N: Scrap Recycling and Waste Recycling Facilities*

#### ***What BMPs can be used to minimize contact between stormwater and potential pollutants at my facility?***

A variety of BMP options may be applicable to eliminate or minimize the presence of pollutants in stormwater discharges from scrap recycling and waste recycling facilities. You will likely need to implement a combination or suite of BMPs to address stormwater runoff at your facility. Your first consideration should be for pollution prevention BMPs, which are designed to prevent or minimize pollutants from entering stormwater runoff and/or reduce the volume of stormwater requiring management. Prevention BMPs can include regular cleanup, collection and containment of debris in storage areas, and other housekeeping practices, spill control, and employee training. It may also be necessary to implement treatment BMPs, which are engineered structures intended to treat stormwater runoff and/or mitigate the effects of increased stormwater runoff peak rate, volume, and velocity. Treatment BMPs are generally more expensive to install and maintain and include oil-water separators, wet ponds, and proprietary filter devices.

BMPs must be selected and implemented to address the following:

#### **Good Housekeeping Practices**

Good housekeeping is a practical, cost-effective way to maintain a clean and orderly facility to prevent potential pollution sources from coming into contact with stormwater. It includes establishing protocols to reduce the possibility of mishandling materials or equipment and training employees in good housekeeping techniques. Common areas where good housekeeping practices should be followed include trash containers and adjacent areas, material storage areas, vehicle and equipment maintenance areas, and loading docks. Good housekeeping practices must include a schedule for regular pickup and disposal of garbage and waste materials and routine inspections of drums, tanks, and containers for leaks and structural conditions. Practices also include containing and covering garbage, waste materials, and debris. Involving employees in routine monitoring of housekeeping practices has proven to be an effective means of ensuring the continued implementation of these measures.

# Industry-Specific Fact Sheets

<http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm>

**Table 2. BMPs for Potential Pollutant Sources at Scrap Recycling and Waste Recycling Facilities**

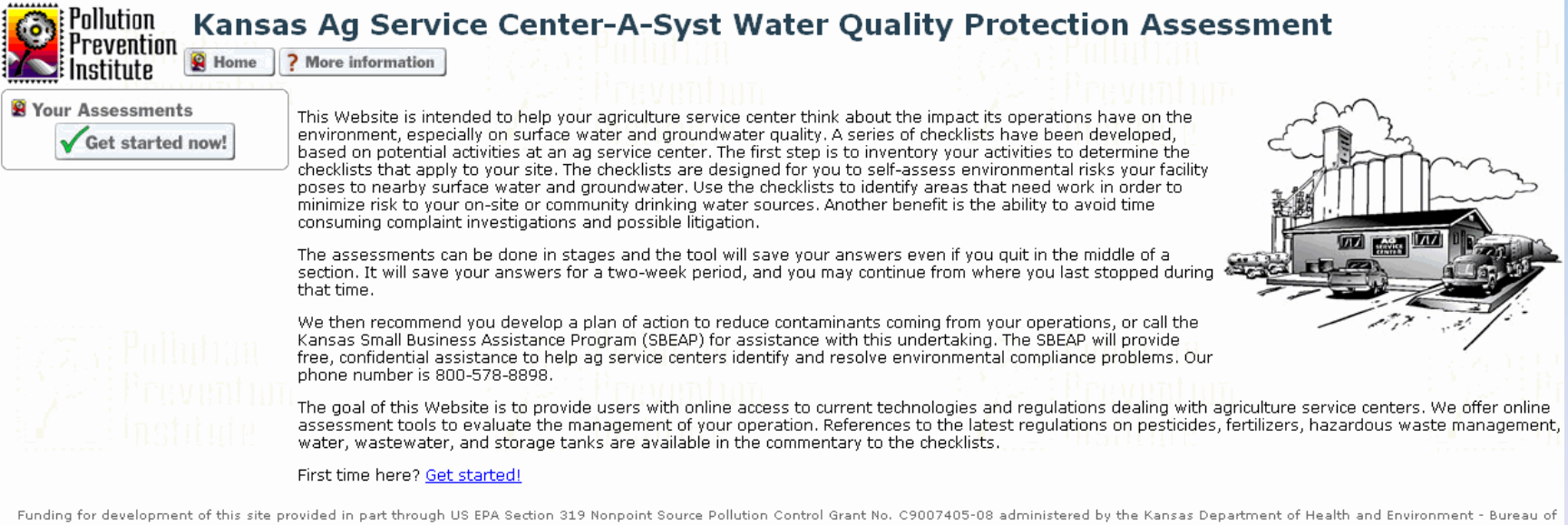
Activity	BMPs
<i>Scrap and Waste Recycling Facilities (non-source separated, non-liquid recyclable materials)</i>	
Inbound recyclable and waste material control	<ul style="list-style-type: none"> <li data-bbox="697 444 1524 536">❑ Provide information/education to suppliers of scrap and recyclable waste materials on draining and properly disposing of residual fluids (e.g., from vehicles and equipment engines, radiators and transmissions, oil filled transformers, and individual containers or drums), prior to delivery to your facility.</li> <li data-bbox="697 551 1524 601">❑ Create a written list of materials that will not be accepted at the facility and materials that will be accepted, but require special handling procedures.</li> <li data-bbox="697 615 1524 665">❑ Train employees engaged in the inspection and acceptance of inbound recyclable materials.</li> <li data-bbox="697 679 1524 758">❑ Inspect incoming materials for items on the prohibited materials/ special handling list. Have truck drivers picking up loads offsite conduct preliminary inspections for items on the list before hauling.</li> <li data-bbox="697 772 1524 793">❑ Check incoming scrap materials for potential fluid contents and batteries.</li> <li data-bbox="697 808 1524 901">❑ Drain all fluids from vehicles upon arrival at the site. Segregate the fluids and properly store or dispose of them. Drain fluids only in designated area over impervious surfaces or drip pans. Contain the area to prevent stormwater run-on and runoff. Cover area with roofs or tarps.</li> <li data-bbox="697 915 1524 936">❑ Keep waste streams separate (e.g., waste oil and mineral spirits).</li> <li data-bbox="697 951 1524 1029">❑ Store liquid wastes, including used oil, in materially compatible and non-leaking containers and disposed or recycled in accordance with RCRA. Nonhazardous substances that are contaminated with a hazardous substance are considered a hazardous substance.</li> <li data-bbox="697 1043 1524 1065">❑ Recycle antifreeze, gasoline, used oil, mineral spirits, and solvents.</li> <li data-bbox="697 1079 1524 1129">❑ Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers properly.</li> <li data-bbox="697 1143 1524 1165">❑ Label and track the recycling of waste material (e.g., used oil, spent solvents, batteries).</li> <li data-bbox="697 1179 1524 1200">❑ Drain oil filters before disposal or recycling.</li> <li data-bbox="697 1215 1524 1236">❑ Store cracked batteries in a nonleaking secondary container.</li> <li data-bbox="697 1250 1524 1315">❑ Promptly transfer used fluids to the proper container. Do not leave full drip pans or other open containers around the shop. Empty and clean drip pans and containers.</li> <li data-bbox="697 1329 1524 1350">❑ Do not pour liquid waste down floor drains, sinks, or outdoor storm drain inlets.</li> </ul>

[www.sacramentostormwater.org/documents/guides/industrial-BMP-manual.pdf](http://www.sacramentostormwater.org/documents/guides/industrial-BMP-manual.pdf)



# Ag Service Centers

[www.sbeap.org/WQChecklist.php](http://www.sbeap.org/WQChecklist.php)



**Pollution Prevention Institute**

## Kansas Ag Service Center-A-Syst Water Quality Protection Assessment

[Home](#) [? More information](#)

**Your Assessments**  
[Get started now!](#)


This Website is intended to help your agriculture service center think about the impact its operations have on the environment, especially on surface water and groundwater quality. A series of checklists have been developed, based on potential activities at an ag service center. The first step is to inventory your activities to determine the checklists that apply to your site. The checklists are designed for you to self-assess environmental risks your facility poses to nearby surface water and groundwater. Use the checklists to identify areas that need work in order to minimize risk to your on-site or community drinking water sources. Another benefit is the ability to avoid time consuming complaint investigations and possible litigation.

The assessments can be done in stages and the tool will save your answers even if you quit in the middle of a section. It will save your answers for a two-week period, and you may continue from where you last stopped during that time.

We then recommend you develop a plan of action to reduce contaminants coming from your operations, or call the Kansas Small Business Assistance Program (SBEAP) for assistance with this undertaking. The SBEAP will provide free, confidential assistance to help ag service centers identify and resolve environmental compliance problems. Our phone number is 800-578-8898.

The goal of this Website is to provide users with online access to current technologies and regulations dealing with agriculture service centers. We offer online assessment tools to evaluate the management of your operation. References to the latest regulations on pesticides, fertilizers, hazardous waste management, water, wastewater, and storage tanks are available in the commentary to the checklists.

First time here? [Get started!](#)



Funding for development of this site provided in part through US EPA Section 319 Nonpoint Source Pollution Control Grant No. C9007405-08 administered by the Kansas Department of Health and Environment - Bureau of

# Ag Service Centers

[www.sbeap.org/WQChecklist.php](http://www.sbeap.org/WQChecklist.php)

## Activity Inventory


Please check all of the activities below that apply to your facility. We'll provide the recommended assessments based on your selections below:

- Sells, stores, handles, or applies pesticides.
- Sells, stores, handles, or applies fertilizers.
- Handles products or chemicals that could accidentally spill on the ground.
- At anytime sold, stored, handled, or dispensed liquid fuel.
- Sells, stores, or handles grain.
- Water supply is from an on-site well.
- Generates trash that may or may not be hazardous.
- Has an on-site wastewater treatment system.
- Handles products or chemicals that could contaminate storm water.
- Maintains and repairs equipment and vehicles on site.

Get Assessments

# Ag Service Centers

[www.sbeap.org/WQChecklist.php](http://www.sbeap.org/WQChecklist.php)



**Pollution Prevention Institute**

**Kansas Ag Service Center-A-Syst Water Quality Protection Assessment**

[Home](#) [? More information](#)

**Your Assessments**

We recommend the following assessments based on your activities:

- [Storm Water and Erosion Management](#)
- [Spill Prevention, Control, & Countermeasure Planning](#)
- [Equipment/Vehicle Maintenance and Repair](#)

[Choose new activities](#) [reset all](#)

Information expires: 12/17/2009


**Welcome back.** You can view your status to the left in the "Your Assessments" window

This Website is intended to help your agriculture service center think about the impact its operations have on the environment, especially on surface water and groundwater quality. A series of checklists have been developed, based on potential activities at an ag service center. The first step is to inventory your activities to determine the checklists that apply to your site. The checklists are designed for you to self-assess environmental risks your facility poses to nearby surface water and groundwater. Use the checklists to identify areas that need work in order to minimize risk to your on-site or community drinking water sources. Another benefit is the ability to avoid time consuming complaint investigations and possible litigation.

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# Ag Service Centers

[www.sbeap.org/WQChecklist.php](http://www.sbeap.org/WQChecklist.php)

**Pollution Prevention Institute**

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## Kansas Ag Service Center-A-Syst Water Quality Protection Assessment

### Your Assessments

We recommend the following assessments based on your activities:

- Storm Water and Erosion Management
- Spill Prevention, Control, & Countermeasure Planning
- Equipment/Vehicle Maintenance and Repair

 **Choose new activities** [reset all](#)  
Information expires: 12/17/2009

### Storm Water and Erosion Management

Please answer each of the following questions by selecting Yes, No, or Not Applicable from the drop-down box. When you're finished, click the "Get Results" button at the bottom of the page for a detailed summary of your assessment.

1. Is soil at the site covered with perennial vegetation or mulch, eliminating bare soil?
2. Does the roof drain to the lawn, instead of discharging to pavement or directly to storm drains?
3. Is the landscaping such that surface runoff flows through vegetated areas before leaving the site?
4. Is storm water on the site prevented from coming in contact with fertilizer or agrichemical products?
5. Are there minimal onsite areas or runoff areas that are barren or have distressed vegetation?
6. Is storm water diverted away from the septic system and soil absorption field?
7. For construction projects that disturb at least one acre of property, do you have the proper permits and a stormwater pollution prevention plan?
8. Do you know if you are subject to the Phase I NPDES storm water program and need a permit?

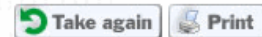
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# Ag Service Centers

[www.sbeap.org/WQChecklist.php](http://www.sbeap.org/WQChecklist.php)

## Storm Water and Erosion Management

Completed: 12/3/2009



Thank you for taking the Assessment.

A report in 1994 by the Kansas Department of Health and Environment indicated 97 percent of streams and 82 percent of lakes in Kansas would not fully support all uses as designated by state statute. A high percentage of streams are contaminated by bacteria and sediment. A high percentage of lakes are also contaminated by nutrients and pesticides. Sources of water quality problems include both natural and man-made pollution. Pollution reaches water from many sources and pathways, which can generally be divided into point source and nonpoint source pollution.

Storm water runoff and the pollutants it carries are the most common causes of nonpoint source pollution of lakes, rivers, and streams. Nonpoint source pollution is not easily monitored at the point of origin. Many water quality specialists believe most future improvements in water quality in the United States will be made by reducing nonpoint source pollution.

Sediment is the largest water pollutant in Kansas as measured by weight or volume, but it is not a health hazard. Soil erosion causes turbidity in streams, rivers, and lakes. The reduced light penetration reduces photosynthesis and has an adverse effect on fish and other aquatic life. Sediment also carries other contaminants, such as nutrients, organic matter, pesticides, and hazardous materials.

### 1. Is soil at the site covered with perennial vegetation or mulch, eliminating bare soil?

#### *You answered Yes*

Good job! The summary below explains the benefits of this practice:

Areas of bare soil often exist on newly seeded lawns and around construction projects. Even on gentle slopes, water from rain and snow can remove large amounts of soil and carry it to wetlands, rivers, and lakes. Planting grass or other ground cover is the best way to stop erosion. Putting a straw or chip mulch over newly seeded areas will slow erosion. Straw bales, diversion ditches, and commercially available silt fences around construction sites can help slow runoff and trap sediment on site. If you are working with a contractor, insist that precautions are taken to control runoff and erosion during construction.

### 2. Does the roof drain to the lawn, instead of discharging to pavement or directly to storm drains?

#### *You answered No*

You might consider the following information below:

Building roofs, like pavement, shed water. If downspouts from roof gutters empty onto grassy areas, the water will have a chance to soak into the ground. Aim downspouts away from foundations and paved surfaces. For roofs without gutters, plant grass, spread mulch, or use gravel under the drip line to prevent soil erosion and increase the ground's capacity to absorb water. Consider using cisterns or rain barrels to catch rainwater for watering lawns and gardens in dry weather. A Web site with plans, instructions, resources, and information for constructing rain gardens is found at [www.raingardens.org](http://www.raingardens.org). Rain gardens are designed to absorb storm water runoff from impervious surfaces such as roofs and parking lots.

### 3. Is the landscaping such that surface runoff flows through vegetated areas before leaving the site?

#### *You answered Not Applicable*

An essential part of storm water management is keeping water from leaving your facility's property, or at least slowing its flow as much as possible. Many lawns are sloped to encourage water to run off onto neighboring property or streets. Instead, consider providing low areas landscaped with shrubs and flowers to encourage water to soak into the ground. If your facility's yard is hilly, construct terraces along slopes to slow the flow of runoff and make mowing easier. If the facility is on a large lot, consider "naturalizing" areas with prairie, woodland, or wetland plants. If your property adjoins a lake or stream, one of the best ways to slow and filter runoff is to leave a buffer strip of thick vegetation along the waterfront. Good sources for ideas are your county K-State Research and Extension, county conservation district, or Natural Resources Conservation Service offices.

# Parking Lots

[www.sbeap.org/WQChecklist.php](http://www.sbeap.org/WQChecklist.php)

**Pollution Prevention Institute**

[Home](#) [? More information](#)

**Your Assessments**  
We recommend the following assessments based on your activities:  
[Water Quality Assessments for Parking Lots](#)  
 Choose new activities [reset all](#)  
Information expires: 12/17/2009

## Water Quality Assessments for Parking Lots

Please answer each of the following questions by selecting Yes, No, or Not Applicable from the drop-down box. When you're finished, click the "Get Results" button at the bottom of the page for a detailed summary of your assessment.

1. Do you know what your city ordinance says about cleaning parking lots, sidewalks, and streets?
2. Whenever practical, do you use dry cleaning methods to clean surfaces?
3. Do you use a street sweeper?
4. Do you properly dispose of the sweepings?
5. Do you divert cleaning water to landscaping or collect the water in a container to discharge to a sanitary sewer?
6. Are employees trained on proper cleaning methods?
7. When cleaning oily deposits, do you use absorbent materials before sweeping or washing?
8. Do you use the least-toxic materials available to clean pavement?
9. Have you evaluated how environmentally friendly your winter de-icing methods and material(s) are?
10. Does runoff flow into bio-retention cells?
11. Are rooftop drains arranged to prevent drainage directly onto paved surfaces?
12. Do you have "No Littering" signs and trash receptacles strategically placed in high-traffic areas?
13. Do you keep lids tightly closed on trash containers?

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# Parking Lots

[www.sbeap.org/WQChecklist.php](http://www.sbeap.org/WQChecklist.php)

## Water Quality Assessments for Parking Lots

Completed: 12/3/2009



Thank you for taking the Assessment.

It is important to evaluate cleaning and maintenance methods for your business' parking lots, sidewalks, and roads. Not only can this improve the outside appearance of your facility, but it can also improve local water quality. Paved surfaces negatively impact water quality in several ways:

### 1. Do you know what your city ordinance says about cleaning parking lots, sidewalks, and streets?

*You answered Yes*

Good job! The summary below explains the benefits of this practice:

In some cities, ordinances related to cleaning paved surfaces have been put in place. Often, these ordinances dictate how certain cleaning methods must be carried out and how paved surfaces should be maintained. Because these requirements vary, it is necessary to understand site-specific regulations you must meet. Talk with your local government public works department if you have questions.

### 2. Whenever practical, do you use dry cleaning methods to clean surfaces?

*You answered No*

You might consider the following information below:

By using dry cleaning methods to clean up paved surfaces, you conserve water and prevent runoff, which can contaminate the surrounding area and local water bodies. If you do use water, dry sweep or vacuum the area beforehand. This cleans up the majority of debris and reduces water use.

### 3. Do you use a street sweeper?

*You answered Not Applicable*

For businesses with large parking lots, street sweepers may be a practical way to clean paved surfaces. Street sweepers can help keep the amount of debris and litter to a minimum without using valuable employee time. This not only helps your business look great, but it keeps the trash from washing into storm drains and eventually into local rivers and lakes. In many cities, businesses can hire a sweeping service – check your local business directory to see if this is available in your area.

### 4. Do you properly dispose of the sweepings?

*You answered Don't Know*

You might consider the following information below:

Street sweepings are usually made up of sand, salt, leaves, and miscellaneous debris. Under normal sweeping operations, this material should be non-hazardous and can either be recycled or disposed of in a sanitary landfill. Please check with your city government to confirm this. If you choose to recycle street sweepings, avoid using them in sensitive areas such as children's play areas and locations near water supplies. Recycled street sweepings can be used as daily cover material for landfills.

### 5. Do you divert cleaning water to landscaping or collect the water in a container to discharge to a sanitary sewer?

*You answered Yes*

Good job! The summary below explains the benefits of this practice:

Water used for cleaning is not allowed to be dumped into storm drains because these drains flow directly into local streams, rivers, and lakes. This means the wash water must go somewhere else. Landscape vegetation slows down water movement and allows particles to settle out. Because of the roots, vegetation also helps water infiltrate into the soil, reducing the amount of runoff. If the water is collected in a container to discharge into a sanitary sewer, obtain written permission from the local wastewater treatment plant.

# Contact Information

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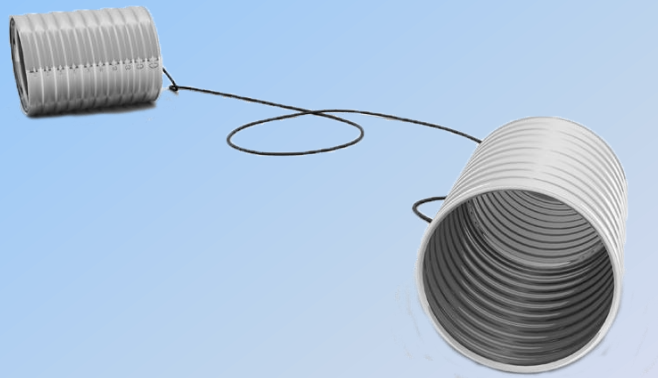
Kansas Department of Health and Environment

Bureau of Water, Industrial Program Section

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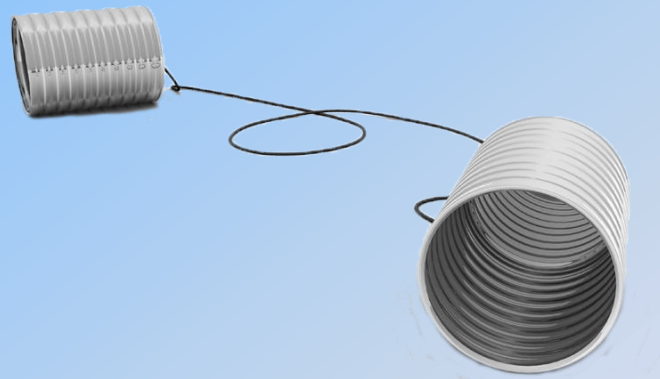
Web Site: [www.kdheks.gov/stormwater](http://www.kdheks.gov/stormwater)



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