

SECTION 2: POLLUTION PREVENTION AND GOOD HOUSEKEEPING

Pollution prevention includes best management practices that need to be set up at the beginning of the project. Pollution prevention practices consist of site management considerations that do not fit into other categories of erosion or sediment controls, such as materials management, good housekeeping, spill prevention, spill clean up and concrete washout.

Good housekeeping entails keeping the site clean and reducing water and air-borne pollutants. Best management practices include effective control of solid waste, sanitary waste, petroleum, hazardous waste and material storage.

This section addresses general components of pollution prevention at the construction site. Each site should be evaluated for more specific pollution prevention needs. Some protection measures are required by federal, state or local regulations. For example, any project disturbing an acre or more of land requires a land disturbance permit. The permit in turn requires a Stormwater Pollution Prevention Plan, or SWPPP (See [Chapter 1](#)).

The Stormwater Pollution Prevention Plan should contain sections for each of the following issues on a construction site. In addition, these practices should be routinely inspected with all other best management practices to ensure pollution sources are contained on the construction site and that pollutants do not mix with soil or stormwater.

Materials Management

Material delivery, handling and storage can generate significant pollution. The site superintendent needs to ensure best management practices are followed to minimize or eliminate the discharge of material pollutants to the storm drain system or watercourse.

Inventory

The site superintendent should develop and maintain an inventory of materials that will be stored outside on the site during construction. For example:

- Pipe, fittings and joint compounds for underground utility piping.
- Gravel and stone bedding material.
- Concrete forming materials.
- Other. (Specify) _____

Delivery

Locations for delivery should be determined and clearly marked. Where beneficial, visibly place signs with delivery instructions for the drivers. Employees trained in emergency spill clean-up procedures need to be present when dangerous materials or liquid chemicals are unloaded.

Storage

Fuels, oils and other petroleum products (e.g., forming oils and compounds; fertilizers; pesticides) or any other hazardous or toxic compounds should be stored under cover and not allowed to come in contact with stormwater on the site. On-site storage should meet all local, state and federal secondary containment rules and regulations. Additionally, local ordinances may require fencing and security measures for storage of these products.

Do not store hazardous chemicals, drums, or bagged materials directly on the ground. Place these items on a pallet and under cover in secondary containment.

Do not store incompatible materials, such as chlorine and ammonia in the same temporary containment facility.

Solid Waste Management



Figure 6.17 This dumpster is in need of routine maintenance and the trash and debris around the area must be disposed of in a proper manner. Source: ABC's of BMP's, LLC

The general contractor is responsible for disposing of all solid waste from the site in accordance with state and local laws and regulations. Dumpsters or other collection containers should be provided as needed and should be covered at all times to reduce the spread of litter and avoid public nuisance and vector concerns. Solid waste may not be buried on the site and may not be open burned except in conformance with the Missouri Air Conservation Law and regulations. Open burning violations are also a violation of the Missouri Solid Waste Management Law.

All solid wastes removed from the construction site must go to a permitted transfer station or landfill and cannot be taken to another unpermitted location for consolidation or processing. Material may be sorted on-site and diverted to acceptable reuse or recycling.

Deconstruction Waste Recycling

Recycling deconstruction waste is one way to minimize solid waste disposal costs and pollution. For information about local outlets for deconstruction materials, contact your area Solid Waste Management District.

There are 20 Solid Waste Management Districts in the State of Missouri. Search their contact information at:

- Solid Waste Management District Contacts located at www.dnr.mo.gov/env/swmp/swmd/swmdinfo.htm or by calling 800-361-4827.
- Missouri Construction and Demolition Waste Guidance www.dnr.mo.gov/env/cdwaste.htm.
- Additional information is available at:
 - Mid America Regional Council (Kansas City region) at 816-474-4240 or www.recyclespot.org.
 - Construction Industry Compliance Assistance Center at www.cicacenter.org/
 - Toolbase Services: Construction Waste Management at www.toolbase.org/Best-Practices/Construction-Waste/construction-waste-management.

Recommended Minimum Requirements

- Solid waste management procedures and practices are designed to minimize or eliminate the discharge of pollutants to the drainage system or to watercourses as a result of the creation, stockpiling or removal of construction site wastes.
- Construction projects should be designed and implemented to minimize the amount of wasted materials.
- Materials should be purchased with minimal packaging.
- Solid waste management procedures and practices must be implemented on all construction projects that generate solid wastes. Solid wastes that are commonly found on construction and demolition sites include but are not limited to:
 - Construction wastes (e.g., lumber, wood sheeting products, steel and metal scraps, sawdust, pipe and electrical cuttings, non-hazardous equipment parts, polystyrene (Styrofoam), wall board, miscellaneous types of insulation, roofing materials, empty containers and other materials used to transport and package construction materials).
 - Landscaping vegetation waste and landscape plant containers.
 - Packaging materials.
 - Litter, including food containers, beverage cans, coffee cups, paper bags, plastic wrappers and smoking materials, including litter generated by the public.

Employee Training

Employees should be trained and educated as part of good housekeeping and pollution prevention on a construction site.

- Instruct employees and subcontractors about identification of solid waste and hazardous waste.
- Educate employees and subcontractors about solid waste storage and disposal procedures.
- Hold regular meetings to discuss and reinforce disposal procedures. incorporate procedures into regular safety meetings.

- Require employees and subcontractors follow solid waste handling and storage procedures.
- Prohibit littering by employees, subcontractors and visitors.
- Minimize production of solid waste materials wherever possible.

Collection, Storage, Recycling and Disposal

- Construction and landscaping material waste should be recycled and reused as much as possible.
 - Landscaping vegetation should be shredded and used as mulch when possible.
 - Materials from demolished structures should be recovered for reuse or recycling when possible.

Note: Any separating of recoverable materials for reuse or recycling must occur on the property of origin. Solid waste cannot be removed to another location for sorting or separating without a permit from the Department of Natural Resources' Solid Waste Management Program.

- Salvage or recycle useful vegetation debris, packaging or surplus building materials when practical. For example, trees and shrubs from land clearing can be converted into wood chips, and then used as mulch on graded areas. Recycle wood pallets, cardboard boxes and construction scraps.
- Provide dumpsters of sufficient size and number to contain the solid waste generated by the project. Dumpsters should be covered at all times and be properly serviced.
- Provide trash receptacles in the permittee's yard, field trailer areas and at locations where workers congregate for lunch and break periods.
- Locate solid waste storage areas at least 50 feet from drainage facilities and watercourses and should not be located in areas prone to flooding or ponding of water.
- Collect construction debris and litter from work areas within the construction limits of the project site on a daily basis and place in watertight dumpsters, regardless of whether the litter was generated by the permittee, the public or others.
- Empty dumpsters weekly from the site. Dispose of the contents in accordance with Missouri State solid waste regulations. While demolition and construction debris typically do not emit a lot of odors, food waste from workers can cause an odor problem and attract public complaints.
- Properly dispose of the waste at a permitted solid waste transfer station or a permitted sanitary or demolition landfill.
- Do not place collected litter and debris in or next to drain inlets, stormwater drainage systems or watercourses.
- Prohibit littering on the project site and perform periodic litter removal from the area to reduce public nuisance concerns from airborne and waterborne litter.
- To prevent clogging of the storm drainage system, litter and debris removal from drainage grates, trash racks, and ditch lines should be a priority.
- Remove construction debris and waste from the site as necessary to maintain a safe environment and to avoid public nuisance issues related to airborne and waterborne trash or vectors.

- Store or stack construction material visible to the public in an orderly manner and manage it to protect the value of the material. Materials stored in a waste like manner are regulated by the Missouri Department of Natural Resources' Solid Waste Management Program or Kansas Department of Health and Environment's Bureau of Waste Management.
- Prevent stormwater run-on from contacting stored solid waste through the use of covered containers. Recovered or recycled materials should be covered, or the area in use should include berms, dikes, other temporary diversion structures or the use of measures to elevate waste from site surfaces to avoid contact with stormwater.
- Construction and highway planting waste not stored in watertight dumpsters need to be securely covered from wind and rain by covering the waste with tarps or plastic sheeting or protected in conformance with the applicable disturbed soil area protection section.
- Dumpster washout on the project site is typically not allowed by the permits.
- Notify trash hauling contractors that only watertight dumpsters are acceptable for use on-site.
- Store potentially hazardous waste from non-hazardous construction site waste.
- Keep the site clean of litter debris.
- Make sure that toxic liquid wastes (e.g., used oils, solvents, and paints) and chemicals (e.g., acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Dispose of non-hazardous waste in accordance Missouri State solid waste regulations.
- Remove this temporary device and stabilize the site prior to filing [Form H - Request for Termination of a General Permit](#), Form--MO 780-1409 (see [Chapter 1 -Missouri Permit Requirements](#)) for termination of permit coverage.

Maintenance, Inspection and Removal

- Inspect all dumpsters on a weekly basis and after rain events.
- Remove full dumpsters from the project site and dispose the contents in accordance with Missouri Solid Waste Management Law and regulations.
- Handle and dispose litter stored in collection areas and containers properly.
- Remove construction debris and waste from the site as necessary. The debris and waste cannot cause a public nuisance or health hazard.

Common Problems and Solutions

Problem	Solution
Trash and debris blowing out of dumpster caused by lack of a cover or overfilling.	Cover dumpster and debris with a tarp or other waterproof cover until the dumpster service provider can bring a new dumpster or empty the existing one. Insist on a unit with a properly working lid or cover, if not provided.

Sanitary Waste Management



Figure 6.18 Typical port-a-potty with secondary containment and tie downs. Source: BFA Inc.

Sanitary waste management consists of procedures and practices to minimize or eliminate the discharge of sanitary or septic waste materials to the storm drain system or watercourses. The general contractor is responsible for providing sanitary facilities appropriate to the number of employees on the site. Sanitary and septic waste management practices are to be implemented on all construction sites that use temporary or portable sanitary or septic waste systems. Sanitary waste may only be disposed of in accordance with the Missouri Clean Water Law.

Recommended Minimum Requirements

Written Procedures and Practices

Written procedures and practices should be referenced in the stormwater pollution prevention plan, or SWPPP. Plans should be posted on the portable facilities and at the office. The site superintendent and field personnel should ensure procedures and practices are followed at all times.

Documentation

Log all education, maintenance, inspection and removal activities in case questions arise during inspections and for reference when troubleshooting problems.

Education

- Educate employees, subcontractors and suppliers about potential dangers to humans and the environment from sanitary or septic wastes.
- Instruct employees, subcontractors and suppliers in identification of sanitary and septic waste.
- Educate employees, subcontractors and suppliers about sanitary and septic waste storage and disposal procedures.
- Hold regular meetings to discuss and reinforce disposal procedures. Incorporate procedures into regular safety meetings.
- Establish a continuing education program to update new employees.

Location, Storage and Disposal Procedures

- In order to reduce the risk of tipping and spillage, temporary sanitary facilities should be firmly anchored to the ground and located where they are protected from high winds.
- Temporary sanitary facilities should be located a minimum of 50 feet away from drainage facilities, watercourses and traffic circulation. Avoid locating sanitary facilities on an impervious surface. Secondary containment may be required for sanitary facilities located on impervious surfaces.
- Wastewater must not be discharged onto or buried within the construction site.
- If sanitary and septic systems discharge directly into sanitary sewer systems, where permissible, the contractor needs to comply with applicable city, county or sewer district requirements. Use of portable toilet facilities on the construction site may require a permit from the local municipality or health department.
- If using an on-site disposal system, such as a septic system, the contractor may need to comply with county health department requirements.
- Properly connect temporary facilities that discharge to the sanitary sewer system to avoid illicit discharges.
- Ensure sanitary and septic facilities are maintained in good working order. It is recommended that a licensed contractor be used or consulted.
- It is recommended to use reputable, licensed sanitary and septic waste haulers.

Maintenance, Inspections and Removal

- Inspect all sanitary waste management devices weekly and after each rainfall event that results in stormwater runoff – and as strong wind conditions occur. Discuss maintenance issues and requirements with the sanitary facility provider before installation.
- Make sure routine and timely disposal of waste materials is occurring.
- Respond immediately to correct problems caused by damage to or tipping of portable units. Clean up and dispose of spills in accordance with state and local regulations. Determine response times for waste haulers and adjust the callout routine to ensure timely disposal of waste is occurring.

- Anticipate fluctuations in facility usage based on the number and location of concurrent construction activities as well as variations in the total number of workers present on the site. Relocate facilities, add units, or increase the frequency of maintenance calls to waste haulers as necessary to make sure the units are convenient for use and do not overfill.
- Remove this temporary device and stabilize the site prior to filing [Form H - Request for Termination of a General Permit](#), Form--MO 780-1409 (see [Chapter 1 -Missouri Permit Requirements](#)) for termination of permit coverage.

Common Problems and Solutions

Problem	Solution
Waste management device falls over or is blown over by wind, caused by improper anchoring.	Anchor or otherwise tie down the device securely.
The sanitary or septic system facility is overflowing, caused by failure to routinely empty and dispose of the waste.	Call the sanitary facility provider to empty the waste immediately and dispose of it properly. Ensure the person in charge of the facility is clearly aware of their responsibility to oversee proper inspection and maintenance. Implement additional education for all involved.

Petroleum and Hazardous Waste Management



Figure 6.19 This site has a designated vehicle maintenance area with all petroleum products located within secondary containment areas. Source: BFA, Inc.

Petroleum and hazardous wastes must be managed and controlled on a construction site to ensure they do not contaminate the stormwater flow and discharge from the site. The site superintendent and field personnel must ensure proper management of petroleum and hazardous waste by providing secondary containment of petroleum and hazardous substances, and by ensuring proper use, containment and disposal. Site superintendents and field personnel should strive to reduce, reuse and recycle materials as much as possible and avoid purchasing, storing and using more petroleum and hazardous waste material than necessary.

While this is a guidance document, some of the information in this section might actually be required under federal, state or local regulations. The general contractor and site superintendent need to ensure they have a clear understanding of federal, state and local requirements, and they should ensure all field personnel are properly educated and trained in these areas.

Recommended Minimum Requirements

Ensure hazardous waste management practices are implemented on construction projects that generate any waste from the use of:

- Petroleum products.
- Asphalt products.
- Concrete curing compounds.
- Pesticides.
- Acids.
- Paints.
- Stains.
- Solvents.
- Wood preservatives.
- Roofing tar.
- Soil binders
- Any materials deemed a hazardous waste according to federal and state laws and regulations.

More information about federal and Missouri laws and regulations is available on the Missouri Department of Natural Resources' Hazardous Waste Program Web page at www.dnr.mo.gov/env/hwp/lawsregs.htm or by calling 800-361-4827 or 573-751-3176

More information about Kansas laws and regulations is available on the Kansas Department of Health and Environment Web page www.kdheks.gov/waste/ or by calling 785-296-1600.

Documentation

Log all education, maintenance, inspection and removal activities in case questions arise during inspections and for reference when troubleshooting problems.

Education And Training

- Educate employees and subcontractors about potential dangers to humans and the environment from hazardous wastes.
- Train employees and subcontractors about hazardous waste delivery, handling, storage and disposal procedures.
- Instruct employees and subcontractors about:
 - Identification of hazardous and solid waste.
 - Safety procedures for common construction site hazardous wastes.
- Hold regular meetings to discuss and reinforce hazardous waste management procedures along with safety procedures.

Petroleum Products

All vehicles kept on-site need to be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Leaking vehicles and construction equipment should be removed from service until the problem has been corrected. Petroleum products should be stored in tightly sealed containers are clearly labeled. Any asphalt substances used on-site should be applied according to the manufacturer's specifications and recommendations. Empty containers should be disposed of per manufacturer's recommendations and meet all federal, state and local regulations.

Fueling and Servicing

No fueling, servicing, maintenance or repair of equipment or machinery should be done within 100 feet of a stream, or within 150 feet of a classified stream, losing stream or sinkhole. Tarps or drop cloths and drip pads should be used when servicing, repairing or performing maintenance on construction equipment in the field. When work is complete, the contaminated materials should be disposed of appropriately.

Disposal of Petroleum and Hazardous Materials

No fuels, oils, lubricants, solvents, coolant, washer fluid or other hazardous materials can be disposed of on-site. All hazardous material must be properly disposed of in accordance with State law.

- For guidance, contact 800-361-4827 in Missouri or 785-296-1667 in Kansas.

Setup, Storage, Maintenance, Inspection and Removal

- Do not store hazardous chemicals, drums, or bagged materials directly on the ground. Place these items on a pallet and under cover in secondary containment.
- Incompatible materials, such as chlorine and ammonia, must not be stored in the same temporary containment facility.
- The site superintendent should keep an accurate, up-to-date inventory of material delivered and stored on-site.
- Minimize material inventory when stored on-site (e.g., only a few days supply).
- Employees trained in emergency spill clean-up procedures need to be present when dangerous materials or liquid chemicals are unloaded.
- Locate temporary storage areas away from vehicular traffic and in upland areas.
- Spill containment is highly recommended for chemical storage and transfer areas. (See [Spill Prevention and Control](#)).
- Locate an ample supply of appropriate spill clean-up materials near storage areas.
- Keep storage areas clean, well organized and equipped with ample clean-up supplies as appropriate for the materials being stored.
- Post proper storage instructions at all times in an open and conspicuous location. Storage areas should be clearly marked, directing placement of containers and materials.
- Store materials in their original containers. Maintain original product labels on the container where they can be easily seen. Damaged or otherwise illegible labels should be replaced immediately.
- Store bagged and boxed materials on pallets. Do not allow materials to accumulate on the ground. Cover bagged and boxed materials during non-working days and prior to rain events.
- Store materials exposed to precipitation in watertight, structurally sound, closed containers. All chemicals should be stored in approved containers and not exposed to stormwater.

Secondary Containment

Materials such as fuel (e.g., gasoline, diesel, kerosene), oil products (e.g., motor oil, transmission fluid, hydraulic oils, grease), miscellaneous liquids (e.g., windshield washer fluid, antifreeze, paint, concrete cure, liquid fertilizer, concrete sealer, calcium chloride, salt brine) should be stored in secondary containment. This represents a partial list.

- Throughout the rainy season, each secondary containment facility should have a permanent cover. The facility should at least be covered during non-working days, prior to rain events and during rain events. The cover should include side wind protection. The cover should be securely fastened to be effective during all rain events, overnight and during any extended period of time when the site will be left unattended.

- No not allow rainwater to collect within the secondary container. Remove any rainwater waste that does collect within the structure immediately so it does not reduce the capacity to contain spills or leaks. Collect and properly dispose contaminated rainwater, spills and leaks in accordance with local, state and federal regulations. (See [Spill Prevention and Control](#)).
- Provide Adequate cover to the secondary container to prevent the entry of rainwater. Depending on the type of secondary container used, adequate cover could include a tarpaulin, fitted lid or roof.
- Provide a temporary containment facility for a volume able to contain precipitation from a 24-hour, 25-year storm event, plus the greater of 10 percent of the aggregate volume of all containers or 100 percent of the capacity of the largest container within its boundary, whichever is greater.
- A temporary containment facility should be impervious to the materials stored therein for a minimum contact time of 72 hours.

Provide sufficient separation between stored containers, secondary or otherwise, to allow for spill cleanup and emergency response access. (See [Spill Prevention and Control](#)).

Inspection

- Inspect all construction equipment prior to use each day for leaks or spills.
- Inspect all areas where petroleum and hazardous waste materials are stored.
 - Inspect weekly and after each rainfall event that results in stormwater runoff.
 - Repair or replace perimeter controls, containment structures, covers and liners as needed to maintain proper function.
- Collect and clean up spills, leaks or accumulated rainwater and dispose of appropriately.
- If a rain event causes secondary containment devices to fill with water, dewater the containment system in the appropriate manner.
- Make sure routine and timely disposal of waste materials occurs.

Removal

- Collect, remove and dispose hazardous waste only at authorized disposal areas.
- Remove and stabilize petroleum and hazardous materials stored on the construction site prior to filing [Form H - Request for Termination of a General Permit](#), Form--MO 780-1409 (See [Chapter 1 -Missouri Permit Requirements](#)) for termination of permit coverage.

Common Problems and Solutions

Problem	Solution
Temporary containment device is full or overflowing after a rain event due to failure to dewater or lack of adequate storage volume.	Contain the discharge and ensure it does not leave the site. Ensure dewatering occurs in a timely manner following storm events. If necessary, enlarge the containment system to allow additional storage volume, and maintain the system appropriately.
Sheen shows up in dewater discharge, due to failure to remove sheen prior to dewatering.	Ensure there is no visible sheen on rainwater prior to dewatering. Use appropriate absorbents to recover materials to the extent possible. Properly dispose of absorbent materials and then finish dewatering.

Spill Prevention and Control

Spill prevention and control procedures and practices are necessary to prevent and control spills in a manner that minimizes or prevents the discharge of spilled material to the drainage system or watercourses. This includes calling the spill hot line to report the spill.

It is not the intent of this guidance to supersede or replace normal site assessment and remediation procedures concerning hazardous materials. (See [Petroleum and Hazardous Waste Management](#)). Significant spills, releases or contamination warrant an immediate response by trained professionals.

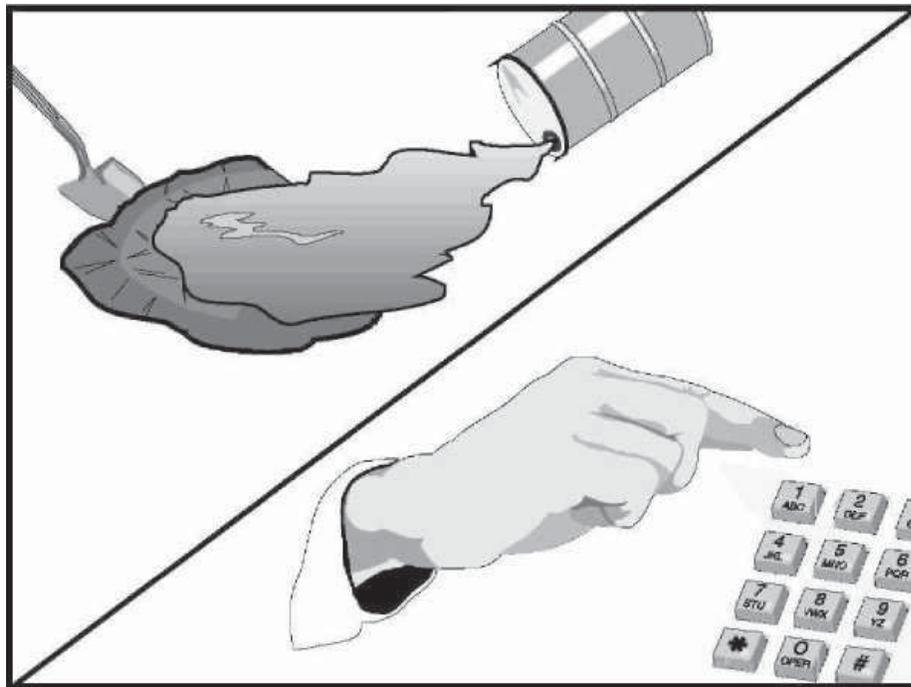


Figure 6.20 Contain spills and report them to the appropriate agency .

In Missouri, contact the department's emergency spill hot line at 573-634-2436.
In Kansas, contact the KDHE 24-hour spill hotline at 785-296-1679.

Recommended Minimum Requirements

Documentation

Log all education, maintenance, inspection, clean up and removal activities in case questions arise during inspections and for reference when troubleshooting problems.

Education and Training

- Ensure the contractor provides adequate training to the site superintendent and all field personnel about the proper protocol for reporting and cleaning up spills.
- Educate employees and subcontractors about potential dangers to humans and the environment from spills and leaks.
- Educate employees and subcontractors about what a “significant spill” is for each material they use and what is the appropriate response for “significant” and “insignificant” spills.
- Hold regular meetings to discuss and reinforce appropriate disposal procedures. Incorporate disposal procedures into regular safety meetings.
- Establish a continuing education program to train new employees.

In addition to good housekeeping and material management practices listed previously, the following practices need to be followed for spill prevention and clean-up:

- The spill response plan should be documented and its availability should be referenced in the written stormwater pollution prevention plan or SWPPP.
- Clearly post methods on-site for storage and spill cleanup, including manufacturer’s recommendations.
- Make site superintendent and field personnel aware of the procedures and the location of material safety data sheets, or MSDSs, information and cleanup supplies. For federal requirements for Spill Controls and Countermeasure Plans, or SPCC, see 40 CFR Part 112 on the Web at www.campuserc.org/virtualtour/grounds/WasteOils/Pages/SPCCDetails.aspx.
- Keep material and equipment necessary for spill cleanup in the material storage area on-site. Equipment and materials include, but are not be limited to, brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust and plastic and metal trash containers specifically for this purpose.
- Clean up all spills immediately after discovery and properly containerize spills for proper disposal. Burial is not acceptable.
- Keep the spill area well ventilated. Personnel need to wear appropriate protective clothing to prevent injury from contact with a hazardous substance.

Reporting

Spills of toxic or hazardous material must be reported immediately to the appropriate state or local government agency, pursuant to reportable quantity regulations for specific materials or if a waterway is, or may be, impacted. Each county should have a Local Emergency Planning Committee, or LEPC. If you are unable to contact the committee directly, contact your local fire department, city hall or county courthouse. When permits are applicable, the permittee or authorized representative is required to notify the Missouri Department of Natural Resources or Kansas Department of Health and Environment’s Environmental Emergency Response in accordance with 40CFR117 and CFR302 as soon as they have knowledge of the discharge of any hazardous substance or petroleum product in excess of the reportable quantity.

- In Missouri, contact the 24-hour emergency spill hotline at 573-634-2436.
- In Kansas, contact the 24-hour emergency spill hotline at 785-296-1679.

In Missouri, state law requires the responsible party (spiller) to report petroleum product releases greater than 50 gallons to the Missouri Department of Natural Resources at 573-634-2436 at the earliest practical moment after discovery. If the release is from an underground storage tank, or UST, or piping, the reportable quantity is 25 gallons or more. Reports are also required for above ground storage tanks, or AST, that have released 50 gallons or greater. Further, federal law requires the responsible party to report any release of oil if the oil reaches or threatens any waterway. The definition of waterway includes sewers, groundwater, wetlands, lakes, creeks, streams, rivers and areas that may not have running water in them at the time, such as road ditches that drain into other waterways.

Adjust spill prevention plan to include measures to prevent this type of spill from being repeated. The plan needs to show how to clean up the spill if another one does occur.

Hazardous Products

- Keep products in original containers unless they are not resealable. If product is transferred to a new container, mark and label properly.
- Retain original labels and material safety data sheets. (See [Petroleum and Hazardous Waste Management](#)).

Disposal

If surplus product or a container must be disposed of, disposal must be done in accordance with State law. For local disposal information, contact your solid waste district, your local emergency planning committee or:

- In Missouri call 800-361-4827.
- In Kansas call 785-296-1667.

Maintenance, Inspections and Removal

- Inspect spill kits on a weekly basis and after each rainfall event that results in stormwater runoff. Inspect the spill kit anytime after material from the kit is utilized and note what material will need to be replaced.
- Maintain the appropriate contents of the spill kit as necessary. List contents of spill kit and attach it to the underside of the spill kit lid or some other readily accessible location. Include on the list the name and phone number of the person or company to contact to replace spill kit items.
- Remove this temporary device and stabilize the site prior to filing [Form H - Request for Termination of a General Permit](#), Form--MO 780-1409 (See [Chapter 1 -Missouri Permit Requirements](#)) for termination of permit coverage.

Common Problems and Solutions

Problem	Solution
Spills are not handled properly, due to site personnel being unaware of spill kit or its location.	<p>Educate all contractors and subcontractors as they begin work on the site.</p> <p>Ensure they know the location of the spill kits and how to use them.</p>
Spill went undetected for a significant period or was not reported, caused by lack of education, lack of inspections or inattention.	<p>Educate all site personnel that all spills are to be reported to the site superintendent immediately and the spill should be contained and cleaned up immediately.</p> <p>Ensure all site personnel are properly trained.</p>

Emergency Numbers

- In Missouri:** Contact the department's emergency spills hotline at 573-634-2436. More information about federal and Missouri laws and regulations is available on the Missouri Department of Natural Resources' Hazardous Waste Program webpage at www.dnr.mo.gov/env/hwp/lawsregs.htm or by calling 800-361-4827 or 573-751-3176
- In Kansas:** Contact the department's 24-hour spill hotline at 785-296-1679. More information about Kansas laws and regulations is available on Kansas Department of Health and Environment webpage at www.kdheks.gov/waste or by calling 785-296-1600

Concrete Washout



Figure 6.21 Concrete washout pit with signage. Source: ABC's of BMP's, LLC

Concrete washout water is a pollutant due to the high pH solution of the wash water. Concrete wash water must be contained on a construction site, and the high pH water cannot be allowed to exit the site and enter a waterway. Alkalinity and chemical additives could be harmful to fish, stream bottom macro invertebrates and wildlife.

Washing waste concrete into waters of the state or in a location where it is likely to enter waters of the state, such as a drainage ditch, is prohibited by State Law and Regulations (644.051 RSMo, 10 CSR 20-6.010). As long as state and local regulations allow, a concrete washout area can be as little as a depressional area where the concrete truck drivers can empty their trucks after use. This may not be allowed in areas of karst topography where cracks and fissures in the rock would allow the wash water to enter ground water easily. Lined pits may need to be used or other containment systems.

Recommended Minimum Requirements

- Procedures for concrete washout should be documented and referenced in the stormwater pollution prevention plan. The site superintendent and field staff should be trained on the procedures and should ensure they are practiced. Construct the concrete washout area to contain the concrete washout so the solids may harden. In approved locations, locate the washout area so the liquid portion of the washout may soak into the ground. The hardened material can then be disposed of properly with construction waste.
- Concrete washout area(s) need to be clearly marked with proper signage, and locations must be shown on the site map within the stormwater pollution prevention plan. The concrete washout area or device should not be placed within 50 feet of a stream or within 100 feet of a classified stream, losing stream or sinkhole.

Construction

- Unless otherwise noted by state and local requirements, the concrete washout can be contained in an excavated pit or bermed area and then buried on-site a minimum of 24 inches below finished grade. The depth must provide a minimum of 24 inches of topsoil over the disposed concrete to allow proper vegetative growth in the area. In areas where concrete wash water is not allowed to be disposed of in the soil, a lined container must be used and after the concrete hardens and there is no liquid as a possible pollutant, the material can be disposed of properly along with other construction waste.
- The number of washout facilities installed should depend on the expected demand for storage capacity. On large sites with extensive concrete work, place washouts in multiple locations for ease of use.
- Install signage adjacent to each washout facility to inform concrete equipment operators to use the proper facilities. Also locations of the washout facilities should be shown on the stormwater pollution prevention plan site map.
- Locate concrete washout on-site at least 100 feet from storm drains, water bodies (wet or dry), open ditches, etc.

Maintenance, Inspections and Removal

- Concrete washout pits must be inspected on a weekly basis and after each rainfall event that results in stormwater runoff. Cover the washout area before predicted rainfall events to prevent overflows. When the concrete reaches 75 percent of the storage capacity of the pit, the hardened concrete must be disposed of in an approved manner.
- These devices are temporary and should be removed from the site after all concrete has been poured and they are no longer necessary.



Figure 6.22 EnviroSac Concrete Washout Bag – Concrete Pump Supply, LLC.

Common Problems and Solutions

Problem	Solution
Concrete wash water is hosed into a storm drain or directly to the creek due to lack of education or inattention to compliance.	Ensure all employees understand it is illegal to wash concrete water into storm drains and streams.
Concrete trucks are hosed out onto areas considered “in need of rip-rap”, due to a lack of education about the environmental harm caused by concrete wash water, the use of current engineering methods preferred over rip-rap or the thoroughly regulated nature of washout disposal.	<p>Ensure employees and concrete truck operators are well informed of the requirement to properly dispose of concrete washout.</p> <p>Discuss concrete management techniques with the concrete supplier before and after deliveries are made.</p> <p>Make sure concrete truck drivers are aware of the presence of concrete waste management facilities.</p>
Concrete wash water is not contained within the system due to inadequately sized storage area.	Ensure the wash water does not enter a water body. Clean dried material out of the system as needed to ensure adequate storage, or enlarge the system so wash water is fully contained until dry.



Figure 6.23 Concrete washout system that can be installed and maintained by vendor. Source: Concrete Washout Systems Inc.

Dust Control and Air Emissions

Prohibited Open Burning Under State Regulations

In Missouri, any waste generated by a business, trade, industry, salvage or demolition operation cannot be burned without a permit issued by the Department of Natural Resources or its delegated local agency. Permits will only be considered for untreated wood wastes. Wastes that may not be burned include but are not limited to tires, rubber products, hazardous materials, styrofoam, plastics, petroleum based products, demolition waste, treated wood and any asbestos containing material.

Required Open Burning Permits

In Missouri, the open burning of certain trade wastes, primarily untreated wood wastes such as pallets or crates, throughout the state, and vegetation from land clearing operations in the Springfield-Greene County area and the Kansas City and St. Louis Metropolitan areas, may be permitted only when it can be shown open burning is the only feasible method of disposal and disposal is in the public interest. In the St. Louis nonattainment area, permits will not be issued unless it can be shown emissions from open burning would be less than any other waste management or disposal method. The open burning permit requires the facility, in most cases, to use an air curtain destructor.

For more information in Missouri contact the Missouri Department of Natural Resources at 800-361-4827, or:

- Contact your nearest Missouri Department of Natural Resources' Regional Office. Contact information located on the Web at www.dnr.mo.gov/regions/regions.htm.
- See *Facts on Open Burning Under Missouri Regulations* fact sheet at www.dnr.mo.gov/pubs/pub2047.pdf.
- Visit the Missouri Department of Natural Resources' Air Pollution Control Program website at www.dnr.mo.gov/env/apcp/publications.htm or call 573-751-4817.
- Visit the Missouri Department of Natural Resources' Solid Waste Management Program webpage at www.dnr.mo.gov/env/swmp/index.htm, or call 573-751-5401.

In Kansas, open burning is regulated by the Kansas Department of Health and Environment. Any open burning of tree and brush typically requires a permit. For more information:

- *Open Burning of Wood Waste* - Technical Guidance Document BAR2000-01.
- *Open Burning for Tree and Brush Sites* - Technical Guidance Document 2002.
- Technical Guidance Document (burning of waste).

For more information in Kansas, contact your Kansas Department of Health and Environment district office, or call 785-296-1550.

Note: Local governments may have stricter laws and policies regarding burning or disposal of wastes.

Dust Control Regulations

In Missouri, state regulation places limits on the amount of visible dust that can leave a property boundary. The general contractor is responsible for implementing control measures as necessary when handling, transporting or storing any material; construction, repair, cleaning or demolition of a building or its appurtenances; construction of use of a road, driveway or open area; or operation of a commercial or industrial installation without applying reasonable measures to prevent visible dust from leaving the property boundary.

For more information about this regulation:

- See 10 CSR 10-6.170 Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin at www.sos.mo.gov/adrules/csr/current/10csr/10csr.asp.
- Visit the Missouri Department of Natural Resources' Air Pollution Control Program website at www.dnr.mo.gov/env/apcp/publications.htm or call 573-751-4817.

Dust control measures used to protect air quality must not cause a violation of the water quality standards, permit conditions or other regulations. For more information about dust control measures, see [Surface Stabilization – Erosion Controls](#).

General Housekeeping Reminders

Some general reminders of information provided in this pollution prevention and good housekeeping section, include:

- An effort should be made to store only enough product to do the job. All materials stored on-site should be stored in a neat, orderly manner in their appropriate containers and, if applicable, under a roof or other enclosure.
- Products should be kept in their original containers with the original manufacturer's label. If a replacement container is used, it must be clearly labeled and the original label retained.
- Whenever possible, all of a product should be used up before disposing of the container.
- Manufacturer's recommendations for proper use and disposal of contents and containers must be followed. Refer to the [Material Safety Data Sheets](#).
- The site superintendent should inspect daily to ensure proper usage, storage and disposal of materials.
- Fertilizers need to be applied only in the minimum amounts recommended by the manufacturer.
- All paint containers need to be tightly sealed and stored when not required for use. Excess paint may not be dumped into the storm sewer system but should be properly disposed of according to manufacturer's instructions, Material Safety Data Sheets and State and local regulations. (See [Petroleum and Hazardous Waste Management](#)). Non hazardous non bulk household products are allowed by regulation to be disposed of sanitary landfills. However, landfill operators may impose more stringent restrictions. Contact the local government for more information and refer to [Solid Waste Management](#).
- Disposal of waste oil. If used oil has come into contact with hazardous materials, it is considered to be waste oil. It must be disposed of according to hazardous waste regulations. (See [Petroleum and Hazardous Waste Management](#)).
- Used oil (non hazardous) should be disposed of at the nearest used-oil recycling center. For more information, check with the local government and refer to the Missouri Solid Waste Management webpage at www.dnr.mo.gov/env/swmp/index.html or call 800-361-4827.
- Mudtracking is a common problem at construction sites. Refer to [Site Preparation](#) for proper exit pad installation and maintenance.